

The Stochastic Human Exposure and Dose Simulation Model: High-Throughput

SHEDS-HT Beta Version 0.1.7

Source Documentation

Consumer Product Inputs

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Prepared by: Kristin Isaacs

US Environmental Protection Agency, Office of Research and Development, National Exposure Research Laboratory

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The United States Environmental Protection Agency through its Office of Research and Development funded and collaborated in the research and development of this software, in part under Contract EP-C-14-001 to ICF International. The model is publicly available in Beta version form. All input data used for a given application should be reviewed by the researcher so that the model results are based on appropriate data sources for the given application. This model, default input files, and R package are under continued development and testing. The model equations and approach are published in the peer-reviewed literature (Isaacs et al. Environ. Sci. Technol. 2014, 48, 12750-12759). The data included herein do not represent and should not be construed to represent any Agency determination or policy.

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Purpose

This material documents the creation of the SHEDS-HT default **source variables** and **source scenarios** file. These default data include consumer product habits and practices (use pattern) information for the SHEDS-HT consumer product categories (called “sources”) in SHEDS terminology. See the Technical and User Manual for more information about these input files, including the variables they contain and their formats. The data documented herein builds on the data reported in the following reference:

Isaacs KK, Glen WG, Egeghy P, Goldsmith MR, Smith L, Vallero D, Brooks R, Grulke CM, Özkaynak H. SHEDS-HT: an integrated probabilistic exposure model for prioritizing exposures to chemicals with near-field and dietary sources. Environ Sci Technol. 2014 Nov 4;48(21):12750-9.

The relevant data records from sources are documented, along with final SHEDS-HT default values.

Sources

The data sources used are documented in the following table, along with a short label used to reference them in this manual.

Data source (Short Label)	Reference
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients	Consumer Product Ingredient Safety: Exposure and Risk Screening Methods for Consumer Product Ingredients. 2nd Edition; American Cleaning Institute: Washington, DC, 2010
Exposure Factor Handbook (EFH; individual tables referenced)	Exposure Factors Handbook 2011 Edition; EPA/600/R-09/052F; United States Environmental Protection Agency: Washington, DC, 2011
Parkinson's Environment and Gene (PEG) study	Narayan S, Liew Z, Bronstein JM, Ritz B. Occupational pesticide use and Parkinson's disease in the Parkinson Environment Gene (PEG) study. Environ Int. 2017 Oct;107:266-273. doi: 10.1016/j.envint.2017.04.010. Epub 2017 Aug 2.
RIVM Children's Toys fact sheet	Bremmer, H.; van Veen, M. Children's Toys Fact Sheet. To assess the risks for the consumer; RIVM report 612810012/2002; National Institute for Public Health and the Environment: Bilthoven, The Netherlands, 2002
RIVM Cleaning Product Fact Sheet	Prud'homme de Lodder, L.; Bremmer, H.; Van Engelen, J. Cleaning Products Fact Sheet, To assess the risks for the consumer; RIVM report 320104003/2006; National Institute for Public Health and the Environment: Bilthoven, The Netherlands, 2006
RIVM Cosmetics Fact Sheet	Bremmer, H.; Prud'homme de Lodder, L.; Van Engelen, J. Cosmetics Fact Sheet. To assess the risks for the consumer. Updated version for ConsExpo 4; RIVM report 320104001/2006; National Institute for Public Health and the Environment: Bilthoven, The Netherlands, 2006
RIVM Disinfectant Fact Sheet	Prud'homme de Lodder, L.; Bremmer, H.; Pelgrom, M.; Park J.; Van Engelen, J. Disinfectant Products Fact Sheet. To assess the risks for the consumer; RIVM report 320005003/2006; National Institute for Public Health and the Environment: Bilthoven, The Netherlands, 2006
RIVM DIY Fact Sheet	ter Berg, W.; Bremmer, H.; Van Engelen, J., Do-It-Yourself Products Fact Sheet. To assess the risks for the consumer. RIVM report 320104007/2007. National Institute for Public Health and the Environment: Bilthoven, The Netherlands, 2007
RIVM Paint Fact Sheet	Bremmer, H.; van Engelen J. Paint Products Fact Sheet: To assess the risks for the consumer. Updated version for ConsExpo 4; RIVM report 320104008/2007; National Institute for Public Health and the Environment: Bilthoven, The Netherlands, 2007
SUPERB (Moran et al. 2012)	Moran, R.; Bennett, D.; Tancredi, D.; Wu, X.; Ritz, B. Hertz-Pannier, I. Frequency and longitudinal trends of household care product use. Atmos. Env., 2012 , 55, 417-424

SUPERB (Bennett et al. 2012)	Bennett, D. H.; Wu, X. M.; Teague, C. H.; Lee, K.; Cassady, D. L.; Ritz, B.; Hertz-Pannier, I. Passive sampling methods to determine household and personal care product use. <i>J. Exposure Sci. Environ. Epidemiol.</i> 2012 , 22, 148-160
SUPERB (Wu et al. 2010)	Wu, X. M.; Bennett, D. H.; Ritz, B.; Cassady, D. L.; Lee, K.; Hertz-Pannier, I. Usage pattern of personal care products in California households. <i>Food Chem. Toxicol.</i> 2010 , 48, 3109-3119
SUPERB (Wu et al. 2011)	Wu, X. M.; Bennett, D. H.; Ritz, B.; Frost, J.; Cassady, D.; Lee, K.; Hertz-Pannier, I. Residential insecticide usage in northern California homes with young children. <i>J. Exp. Sci. and Env. Epidemiol.</i> 2011 , 21, 427-436
SUPERB -Central CAL (Armes et al. 2011)	Armes, M. N.; Liew, Z.; Wang, A.; Wu, X.; Bennett, D. H.; Hertz-Pannier, I.; Ritz, B. Residential pesticide usage in older Adults residing in Central California. <i>Int. J. Environ. Res. Public Health</i> 2011 , 8, 3114-3133
Loretz et al. 2005	Loretz, L.; Api, A.; Babcock, L.; Barraj, L.; Burdick, J.; Dressler, W.; Gettings, S.; Hsu, H.; Pan, Y.; Re, T.; Renskers, K.; Rothenstein, A.; Scrafford, C.; Sewall, C. Exposure data for cosmetic products: lipstick, body lotion, and face cream. <i>Food Chem. Toxicol.</i> 2005, 43, 279-291.
Loretz et al. 2006	Loretz, L.; Api, A.; Barraj, L.; Burdick, J.; Davis, D.; Dressler, W.; Gilberti, E.; Jarrett, G.; Mann, S.; Pan, Y.; Re, T.; Renskers, K.; Scrafford, C.; Vater, S. Exposure data for personal care products: hairspray, spray perfume, liquid foundation, shampoo, body wash, and solid antiperspirant. <i>Food Chem. Toxicol.</i> , 2006 , 44, 2008-2018
Loretz et al. 2008	Loretz, L.; Api, A.; Babcock, L.; Barraj, L.; Burdick, J.; Cater, K.; Jarrett, G.; Mann, S.; Pan, Y.; Re, T.; Renskers, K.; Scrafford, C. Exposure data for cosmetic products: facial cleanser, hair conditioner, and eye shadow. <i>Food Chem. Toxicol.</i> , 2008 , 46, 1516-1524
Weegels and Van Veen 2001	Weegels ME, van Veen MP. Variation of consumer contact with household products: a preliminary investigation. <i>Risk Anal.</i> 2001 Jun;21(3):499-511.
Westat	Household Solvent Products: A National Usage Survey; EPA-OTS 560/5-87-005. United States Environmental Protection Agency: Washington, DC, 1987
Sathyarayana et al. (2008)	Sathyarayana, S; Karr, CJ; Lozano, P; Brown, E; Calafat, AM; Liu, F; Swan, SH. Baby care products: possible sources of infant phthalate exposure. <i>Pediatrics</i> , 2008 , 121, e260-e268

General Rules for Selecting SHEDS-HT Default Inputs for Consumer Product Categories

The following are some general rules that were applied when determining source scenario and source variable inputs.

- Products intended for release to surfaces indoors will have a product.indirect scenario
- Durations of use are durations of direct active use of the product (as opposed to time on skin, e.g.)
- Specialty products or other rarely used products with no data will have an assumed population prevalence of 0.01

Dermal Scenario Rules

- All products will have a direct dermal scenario
- Products assumed to have a wash-off post-use will have a 1% residual on the skin of mass of contact

- Powder products will have 30% residual on the skin of mass of contact due to brush-off
- Products applied to skin will have f.contact=1
- Products applied to hair will have an assumed f.contact= 0.
- Spray products not applied to the skin are assumed to have an f.contact=0.01
- Home improvement products (excluding paints and primers and spray products) lawn and garden products, and pesticides are assumed to have a f.contact value = .5 g divided by the mean product mass (based on the general range of RIVM DIY product skin mass values ranging from .01-.5g)
- Home improvement products, (excluding paints and primers and spray products) are assumed to have a f.contact value = .5 g divided by the mean product mass (based on the general range of RIVM DIY product values ranging from .08-0.5g)
- Paints and primers (except Arts and Crafts paints and spray paints) will have an f.contact value equal to .03 g/min *(the RIVM default value, 30 mg/min, see Paint Fact Sheet) multiplied by the mean product duration divided by the mean product mass
- Arts and Crafts paints will have f.contact = 1.4 g (the RIVM "poster paint" default value, see Children's Toys Fact Sheet) divided by the mean product mass
- Cleaning products will have a default value f.contact= .01 (See RIVM Cleaning product fact sheet) Other products have assumed/estimated custom values as noted in the tables below

Inhalation Scenario Rules

- All products will have an inhalation of vapor scenario
- Products assumed to be primarily aerosol spray products will have a uniform distribution of fraction aerosolized of 0.5-1.0 based on RIVM cleaning product fact sheet Table 9
Products assumed to be primarily trigger spray products will have a uniform distribution of fraction aerosolized of 0.1-0.2 based on RIVM cleaning product fact sheet Table 9
- Products assumed to be mix of aerosol/trigger spray products will have a uniform distribution of fraction aerosolized of 0.1-1.0 based on RIVM cleaning product fact sheet Table 9
- Products released outdoors will have an aerosol cloud volume of 480 m³
- Products released indoors will have an aerosol cloud volume of 24 m³

Down the Drain Scenario Rules

- In general, personal care products (e.g. toothpaste, shampoo) and other products to be applied to skin (e.g. body paint), interior cleaners designed to be applied and then removed (e.g. surface cleaners), laundry products, products for application to clothes (e.g. antistatic spray), and other products for washing/cleaning of humans or pets (e.g., adhesive remover for hands, pet shampoo) are assumed to have a residential down-the-drain disposal fraction f.drain = 1.0
- Products designed for permanent application to residential or other surfaces (e.g., paints, spray adhesives) were assumed to have f.drain values ranging from 0 to 0.1, to account for potential disposal of a portion of the mass used down the drain (e.g. via cleaning of containers or brushes).
- Other products (e.g., wood polishes, arts and craft products) with larger uncertainties as to ultimate fate (retention on surfaces or disposal) are assigned f.drain ranging from 0 to 0.3.
- Products designed solely for complete application to outdoor surfaces with little potential for clean-up indoors (e.g. exterior cleaners or lawn products) or products that would only be disposed of via solid waste (e.g. play dough) have no down the drain disposal

1 . P.AC.010.029 arts and crafts adhesive-spray

spray adhesives for primarily craft purposes, including spray mounts and stencil placement sprays

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedin	applied to surfaces (no washoff); some f.drain to account for clean-up of materials
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM DIY Fact Sheet	Glue - Tube glue (hobby, small tube)	9 g	1/week	10 min	
RIVM DIY Fact Sheet	Glue - Two-component glue	20 g	3 /year	30 min	
RIVM DIY Fact Sheet; vapor only	Glue - Hot melt adhesive	65 g	1/month	25 min	
RIVM DIY Fact Sheet	Glue - Spray glue	170 s * 1.5 g/s = 255 g	1/month		
SUPERB (Bennett et al. 2012)	Hobby products				40; 12 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	assume 10 bursts of 1 s for hobby use of spray glue
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	18	Lognormal	0	99	B	approx average of hobby glues (hobby tube/hot melt)
Direct use prevalence (fraction)	use.prev	0.4	point	0	12	B	hobby product prevalence for families with children
Direct use prevalence (fraction)	use.prev	0.26	point	13	99	M	average of hobby product prevalence for families and older adults
Direct use prevalence (fraction)	use.prev	0.26	point	13	99	W	average of hobby product prevalence for families and older adults
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	hobby product prevalence for families with children
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning

Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	product fact sheet Table 9 see General Rules
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B	value for indoor product

2 . P.AC.010.999 arts and crafts adhesive-NOC

glue sticks, glitter glues, fabric glues, craft glue, and other adhesives used for primarily craft purposes

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM DIY Fact Sheet	Glue - Tube glue (hobby, small tube)	9 g	1/week	10 min	
RIVM DIY Fact Sheet	Glue - Two-component glue	20 g	3 /year	30 min	
RIVM DIY Fact Sheet; vapor only	Glue - Hot melt adhesive	65 g	1/month	25 min	
RIVM DIY Fact Sheet	Glue - Spray glue	170 s * 1.5 g/s = 255 g	1/month		
SUPERB (Bennett et al. 2012)	Hobby products				40; 12 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	30	Lognormal	0	99	B	Approx average of reported
Frequency (per year)	use.freq	22	lognormal	0	99	B	Approx average of reported
Duration of Direct Use (min)	duration	22	Lognormal	0	99	B	Approx average of reported
Direct use prevalence (fraction)	use.prev	0.4	point	0	12	B	hobby product prevalence for families with children
Direct use prevalence (fraction)	use.prev	0.26	point	13	99	M	average of hobby product prevalence for families and older adults
Direct use prevalence (fraction)	use.prev	0.26	point	13	99	W	average of hobby product prevalence for families and older adults
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	hobby product prevalence for families with children
Fraction of product mass in contact with skin	f.contact	0.017	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

3 . P.AC.020.000 arts and crafts cleaner

solvent-based products for cleaning paint, adhesives, etc. from hands or surfaces

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Bennett et al. 2012)	Hobby products				40; 12 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	~.5 oz
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.02	point	0	12	B	assumed less than general "hobby product" values
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.02	point	0	99	B	assumed less than general "hobby product" values
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

4 . P.AC.030.029 arts and crafts finish-spray

spray shellacs or polyurethane coatings for primarily craft purposes

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedin	applied to surfaces (no washoff); some f.drain to account for clean-up of materials
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Bennett et al. 2012)	Hobby products				40; 12 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	Assumed
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.02	point	0	12	B	assumed less than general "hobby product" values
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.02	point	0	99	B	assumed less than general "hobby product" values
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

5 . P.AC.030.999 arts and crafts finish-NOC

shellacs or polyurethane coatings for primarily craft purposes

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Bennett et al. 2012)	Hobby products				40; 12 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.02	point	0	12	B	assumed less than general "hobby product" values
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.02	point	0	99	B	assumed less than general "hobby product" values
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

6 . P.AC.040.000 arts and crafts paint

paints and colorants for primarily craft purposes (including acrylic and enamel paints)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to surfaces (no washoff); some f.drain to account for clean-up of materials
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Paints	0.13-1612 (g/use; min-max ranges for North America)	0.003-1 (per day; min-max ranges for North America)		
SUPERB (Bennett et al. 2012)	Hobby products				40; 12 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	30	Lognormal	0	99	B	~1 oz
Frequency (per year)	use.freq	24	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.4	point	0	12	B	Values for households with parents
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	Values for households with parents
Fraction of product mass in contact with skin	f.contact	0.047	Point	0	99	B	See general rules for arts and craft paint
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

7 . P.AC.050.029 body paint-spray

body paints, markers, glitters, play cosmetics, and halloween cosmetics (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Leg and Body Paints		(per day: CTFA; cosmetics company; Simmons Market Research) 0.003; 0.011;		
RIVM Cosmetics Fact Sheet	Face paint: adults	1.7 g	6 /year	480 min	
RIVM Cosmetics Fact Sheet	Face paint: children	1.4 g	12 /year	480 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	Approx face paint x 10
Frequency (per year)	use.freq	12	lognormal	0	12	B	
Frequency (per year)	use.freq	6	lognormal	13	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.2	point	0	12	B	assume 20 min to apply
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules

Volume of aerosol cloud for spray products (m³) volume 24 Point 0 99 B value for indoor product

8 . P.AC.050.999 body paint-NOC

body paints, markers, glitters, play cosmetics, and halloween cosmetics

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Leg and Body Paints		(per day: CTFA; cosmetics company; Simmons Market Research) 0.003; 0.011;		
RIVM Cosmetics Fact Sheet	Face paint: adults	1.7 g	6 /year	480 min	
RIVM Cosmetics Fact Sheet	Face paint: children	1.4 g	12 /year	480 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	12	B	
Frequency (per year)	use.freq	6	lognormal	13	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.2	point	0	12	B	assume 20 min to apply
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

9 . P.AC.060.000 bubble solution

liquid bubble solutions, including solutions for bubble machines

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	20	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	12	lognormal	0	99	B	assume 4 x month in summer
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.6	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.6	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.05	Point	0	99	B	assumed
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

10 . P.AC.070.000 craft kit

multi-component crafting kits where individual products are not designated

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Bennett et al. 2012)	Hobby products				40; 12 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	30	Lognormal	0	99	B	All assumed; mass = ~ 1 oz
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.3	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.3	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.047	Point	0	99	B	See general rules for arts and craft paint
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

11 . P.AC.080.000 crayons

wax crayons for coloring or illustration

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.indirect	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.1	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	12	B	
Frequency (per year)	use.freq	12	lognormal	13	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	1	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.001	Point	0	99	B	assumed
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

12 . P.AC.090.000 dye

products for dying fabrics

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Bennett et al. 2012)	Hobby products				40; 12 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.028	Point	0	99	B	See general rules for arts and craft paint
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

13 . P.AC.100.029 fabric paints and sealers-spray

paints or sealers for treating fabrics (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Bennett et al. 2012)	Hobby products				40; 12 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	All assumed; mass = ~ .5 oz
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.02	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.02	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

14 . P.AC.100.999 fabric paints and sealers-NOC

paints or sealers for treating fabrics

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Bennett et al. 2012)	Hobby products				40; 12 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	All assumed; mass = ~ .5 oz
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.02	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.02	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.093	Point	0	99	B	See general rules for arts and craft paint
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

15 . P.AC.110.000 finger paint

non-edible finger paints

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Children's Toys fact sheet	Finger paint	20 g	100/year	45 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	20	Lognormal	0	99	B	
Frequency (per year)	use.freq	100	lognormal	0	99	B	
Duration of Direct Use (min)	duration	45	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.2	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	assumed
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

16 . P.AC.120.000 flocking

flocking and artificial snow

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedin	applied to surfaces (no washoff); some f.drain to account for clean-up of materials
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Glass Frostings, Window Tints, and Artificial Snow	(ounces per year: mean; SD) 13.82; 14.91	(per year: mean, SD) 2.78; 21.96	(minutes: mean;sd) 29.45; 48.16	10%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	140	Lognormal	0	99	B	~13 oz/ 3 per year
Frequency (per year)	use.freq	3	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

17 . P.AC.130.000 fogger

liquid solutions for fogger machines

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.inhalationvapor	
product.downthedrain	applied with uncertainty as to wash-off; or higher potential for disposal via drain
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Bennett et al. 2012)	Hobby products				40; 12 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	100	Lognormal	0	99	B	Assumed
Frequency (per year)	use.freq	1	lognormal	0	99	B	
Duration of Direct Use (min)	duration	60	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

18 . P.AC.140.000 glaze

liquid products for glazing craft pottery

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Bennett et al. 2012)	Hobby products				40; 12 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	100	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	24	lognormal	0	99	B	Assume uses will use relatively frequently
Duration of Direct Use (min)	duration	60	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.005	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

19 . P.AC.150.000 gun cleaner

liquid solutions for cleaning interior or exterior of firearms

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	.5 oz
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.02	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.033	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

20 . P.AC.160.000 pens and markers

writing utensils containing liquid or gel ink

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.indirect	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.1	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	1	point	0	12	B	
Direct use prevalence (fraction)	use.prev	1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.05	Point	0	99	B	assumed
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

21 . P.AC.170.000 play dough

children's play modeling clays

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	

product.direct.inhalationvapor

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Children's Toys fact sheet	modelling clay	350 g	52/year	60 min	
SUPERB (Bennett et al. 2012)	Hobby products				40; 12 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	350	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.4	point	0	12	B	hobby product prevalence for families with children
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	hobby product prevalence for families with children assumed
Fraction of product mass in contact with skin	f.contact	0.2	Point	0	99	B	
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

22 . P.AP.010.000 antifreeze

antifreeze and/or coolant solutions for motorized vehicles

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	960	Lognormal	0	99	B	~32 oz
Frequency (per year)	use.freq	1	lognormal	0	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.03	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.00052	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

23 . P.AP.020.029 auto air freshener-spray

air fresheners for car interiors (spray or aerosol formulation specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	6	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

24 . P.AP.020.999 auto air freshener-NOC

air fresheners for car interiors, including products for vents

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	6	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.05	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

25 . P.AP.030.029 auto fluids and additives-spray

power steering fluids, transmission fluids, brake fluids, fuel injector cleaners, gas treatments, or leak stoppers (spray or aerosol formulation specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Battery Terminal Protectors	(ounces per year: mean; SD) 16.49; 87.84	(per year: mean, SD) 3.95; 24.33	(minutes: mean;sd); 9.61; 18.15	7%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Gasket Remover	(ounces per year: mean; SD) 13.25; 22.35	(per year: mean, SD) 2.5; 4.39	(minutes: mean;sd); 23.57; 27.18	3%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Ignition and Wire Dryers	(ounces per year: mean; SD) 9.02; 14.59	(per year: mean, SD) 3.01; 5.71	(minutes: mean;sd); 7.24; 8.48	5%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	115	Lognormal	0	99	B	~32 oz/ 3 per year
Frequency (per year)	use.freq	3	lognormal	0	99	B	Consensus
Duration of Direct Use (min)	duration	15	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.07	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.07	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 value for outdoor product
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	

26 . P.AP.030.999 auto fluids and additives-NOC

power steering fluids, transmission fluids, brake fluids, fuel injector cleaners, gas treatments, or leak stoppers

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	

product.direct.inhalationvapor

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Battery Terminal Protectors	(ounces per year: mean; SD) 16.49; 87.84	(per year: mean, SD) 3.95; 24.33	(minutes: mean;sd); 9.61; 18.15	7%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Gasket Remover	(ounces per year: mean; SD) 13.25; 22.35	(per year: mean, SD) 2.5; 4.39	(minutes: mean;sd); 23.57; 27.18	3%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Ignition and Wire Dryers	(ounces per year: mean; SD) 9.02; 14.59	(per year: mean, SD) 3.01; 5.71	(minutes: mean;sd); 7.24; 8.48	5%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	115	Lognormal	0	99	B	~32 oz/ 3 per year
Frequency (per year)	use.freq	3	lognormal	0	99	B	Consensus
Duration of Direct Use (min)	duration	15	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.07	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.07	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.0043	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

27 . P.AP.040.029 auto lubricant-spray

engine lubricants and belt dressings, not including motor oils (spray or aerosol formulation specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Spray Lubricant for Cars	(ounces per year: mean; SD) 18.63; 54.74	(per year: mean, SD) 10.31; 30.71	(minutes: mean;sd); 9.9; 35.62	18%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	~ 19 oz / 11 per year
Frequency (per year)	use.freq	11	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.18	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.18	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.18	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 value for outdoor product
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	

28 . P.AP.040.999 auto lubricant-NOC

engine lubricants and belt dressings, not including motor oils

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Spray Lubricant for Cars	(ounces per year: mean; SD) 18.63; 54.74	(per year: mean, SD) 10.31; 30.71	(minutes: mean;sd) 9.9; 35.62	18%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	~ 19 oz / 11 per year
Frequency (per year)	use.freq	11	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.18	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.18	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.18	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

29 . P.AP.050.029 auto paint-spray

paints and primers for auto body or engine (spray or aerosol formulation specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Aerosol Spray Paints for Cars	(ounces per year: mean; SD) 44.95; 89.78	(per year: mean, SD) 4.5; 9.71	(minutes: mean;sd) 42.77; 71.39	12%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Auto Spray Primers	(ounces per year: mean; SD) 70.37; 274.56	(per year: mean, SD) 6.42; 33.89	(minutes: mean;sd); 51.45; 86.11	9%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	360	Lognormal	0	99	B	
Frequency (per year)	use.freq	5	lognormal	0	99	B	
Duration of Direct Use (min)	duration	50	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 value for outdoor product
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	

30 . P.AP.050.999 auto paint-NOC

paints and primers for auto body or engine

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Aerosol Spray Paints for Cars	(ounces per year: mean; SD) 44.95; 89.78	(per year: mean, SD) 4.5; 9.71	(minutes: mean;sd) 42.77; 71.39	12%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Auto Spray Primers	(ounces per year: mean; SD) 70.37; 274.56	(per year: mean, SD) 6.42; 33.89	(minutes: mean;sd); 51.45; 86.11	9%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	360	Lognormal	0	99	B	~60 oz / 5 year
Frequency (per year)	use.freq	5	lognormal	0	99	B	
Duration of Direct Use (min)	duration	50	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.0014	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

31 . P.AP.060.000 auto refrigerant

refrigerants and freon products for auto applications

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	30	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	0.5	lognormal	0	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.017	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

32 . P.AP.070.000 boat cleaner

cleaners, washes, and polishes for exterior marine applications

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Moran et al 2012) Frequencies are per month	Car cleaner		0.92; (1.45); 0.6; (0.77); 0.36; (0.48); 1.38; (1.68) Mean (SD) for W;M parents; W;M older adults		32%; 47%; 20%; 34% (W;M parents W; M older adults)

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	500	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	2	lognormal	0	99	B	
Duration of Direct Use (min)	duration	120	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

33 . P.AP.080.000 boat engine fluids

engine fluids for marine applications

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	100	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	2	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.005	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

34 . P.AP.090.000 body cleaner

cleaners, shampoos, and washes for auto body exterior (not including wax products)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency		Duration of Use	Prevalence
SUPERB (Moran et al 2012) Frequencies are per month	Car cleaner		0.92; (1.45); 0.6; (0.77); 0.36; (0.48); 1.38; (1.68) Mean (SD) for W;M parents; W;M older adults			32%; 47%; 20%; 34% (W;M parents W; M older adults)

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	150	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.41	point	13	99	M	SUPERB average
Direct use prevalence (fraction)	use.prev	0.26	point	13	99	W	SUPERB average
Household prevalence for indirect exposure (fraction)	house.prev	0.41	point	0	99	B	SUPERB average
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

35 . P.AP.100.029 body repair-spray

products for repairing auto body exteriors, including bondo-type products and scratch fillers (spray or aerosol formulation specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	

product.direct.inhalationvapor

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	150	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	2	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.03	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.03	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

36 . P.AP.100.999 body repair-NOC

products for repairing auto body exteriors, including bondo-type products and scratch fillers

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Auto Spray Primers	(ounces per year: mean; SD) 70.37; 274.56	(per year: mean, SD) 6.42; 33.89	(minutes: mean;sd); 51.45; 86.11	9%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	150	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	2	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.03	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.03	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.0033	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

37 . P.AP.110.029 body wax-spray

auto body waxes and coatings, including combo wash/wax products (spray or aerosol formulation specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Moran et al 2012) Frequencies are per month	Car cleaner		0.92; (1.45); 0.6; (0.77); 0.36; (0.48); 1.38; (1.68) Mean (SD) for W;M parents; W;M older adults		32%; 47%; 20%; 34% (W;M parents W; M older adults)

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	150	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.41	point	13	99	M	SUPERB average
Direct use prevalence (fraction)	use.prev	0.26	point	13	99	W	SUPERB average
Household prevalence for indirect exposure (fraction)	house.prev	0.41	point	0	99	B	SUPERB average
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 value for outdoor product
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	

38 . P.AP.110.999 body wax-NOC

auto body waxes and coatings, including combo wash/wax products

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Moran et al 2012) Frequencies are per month	Car cleaner		0.92; (1.45); 0.6; (0.77); 0.36; (0.48); 1.38; (1.68) Mean (SD) for W;M parents; W;M older adults		32%; 47%; 20%; 34% (W;M parents W; M older adults)

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	150	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.41	point	13	99	M	SUPERB average
Direct use prevalence (fraction)	use.prev	0.26	point	13	99	W	SUPERB average
Household prevalence for indirect exposure (fraction)	house.prev	0.41	point	0	99	B	SUPERB average
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

39 . P.AP.120.029 degreaser-spray

auto, engine and brake degreasers (spray or aerosol formulation specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Engine Degreasers	(ounces per year: mean; SD) 46.95; 135.17	(per year: mean, SD) 4.18; 13.72	(minutes: mean;sd) 29.29; 48.14	17%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Carburetor Cleaners	(ounces per year: mean; SD) 22; 50.6	(per year: mean, SD) 3.77; 7.1	(minutes: mean;sd) 13.57; 23	22%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Transmission Cleaners	(ounces per year: mean; SD) 35.71; 62.93	(per year: mean, SD) 2.28; 3.55	(minutes: mean;sd); 27.9; 61.44	2%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Brake Quieters Cleaners	(ounces per year: mean; SD) 11.72; 13.25	(per year: mean, SD) 3; 6.06	(minutes: mean;sd); 23.38; 36.32	3%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	300	Lognormal	0	99	B	~30 oz/ 3 per year
Frequency (per year)	use.freq	3	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.11	point	13	99	M	average reported
Direct use prevalence (fraction)	use.prev	0.11	point	13	99	W	average reported
Household prevalence for indirect exposure (fraction)	house.prev	0.11	point	0	99	B	average reported
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 value for outdoor product
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	

40 . P.AP.120.999 degreaser-NOC

auto, engine and brake degreasers

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	

product.direct.inhalationvapor

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Engine Degreasers	(ounces per year: mean; SD) 46.95; 135.17	(per year: mean, SD) 4.18; 13.72	(minutes: mean;sd) 29.29; 48.14	17%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Carburetor Cleaners	(ounces per year: mean; SD) 22; 50.6	(per year: mean, SD) 3.77; 7.1	(minutes: mean;sd) 13.57; 23	22%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Transmission Cleaners	(ounces per year: mean; SD) 35.71; 62.93	(per year: mean, SD) 2.28; 3.55	(minutes: mean;sd); 27.9; 61.44	2%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Brake Quieters Cleaners	(ounces per year: mean; SD) 11.72; 13.25	(per year: mean, SD) 3; 6.06	(minutes: mean;sd); 23.38; 36.32	3%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	300	Lognormal	0	99	B	~30 oz/ 3 per year
Frequency (per year)	use.freq	3	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.11	point	13	99	M	average reported
Direct use prevalence (fraction)	use.prev	0.11	point	13	99	W	average reported
Household prevalence for indirect exposure (fraction)	house.prev	0.11	point	0	99	B	average reported
Fraction of product mass in contact with skin	f.contact	0.0017	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

41 . P.AP.130.029 detailing-spray

products for cleaning, polishing, or protecting car interior surfaces, upholstery, leather, carpeting, tires, or rims (spray or aerosol formulation specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report SUPERB (Moran et al 2012) Frequencies are per month	Tire/Hubcap Cleaners Car cleaner	(ounces per year: mean; SD) 31.58; 80.39	(per year: mean, SD) 11.18; 18.67 0.92; (1.45); 0.6; (0.77); 0.36; (0.48); 1.38; (1.68) Mean (SD) for W;M parents; W;M older adults	(minutes: mean;sd); 22.66; 23.94	16% 32%; 47%; 20%; 34% (W;M parents W; M older adults)

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	90	Lognormal	0	99	B	~32 oz / 12 per year
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	25	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.16	point	13	99	M	Use hubcap cleaner value
Direct use prevalence (fraction)	use.prev	0.16	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.16	point	0	99	B	Use hubcap cleaner value
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 value for outdoor product
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	

42 . P.AP.130.999 detailing-NOC

products for cleaning, polishing, or protecting car interior surfaces, upholstery, leather, carpeting, tires, or rims

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	

product.direct.inhalationvapor

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Tire/Hubcap Cleaners	(ounces per year: mean; SD) 31.58; 80.39	(per year: mean, SD) 11.18; 18.67	(minutes: mean;sd); 22.66; 23.94	16%
SUPERB (Moran et al 2012) Frequencies are per month	Car cleaner		0.92; (1.45); 0.6; (0.77); 0.36; (0.48); 1.38; (1.68) Mean (SD) for W;M parents; W;M older adults		32%; 47%; 20%; 34% (W;M parents W; M older adults)

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	90	Lognormal	0	99	B	~32 oz / 12 per year
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	25	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.16	point	13	99	M	Use hubcap cleaner value
Direct use prevalence (fraction)	use.prev	0.16	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.16	point	0	99	B	Use hubcap cleaner value
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

43 . P.AP.140.000 motor oil

petroleum-based or synthetic engine lubricants

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	910	Lognormal	0	99	B	~32 oz
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.25	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.25	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.25	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.00055	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

44 . P.AP.150.029 windows or windshield-spray

products for washing or protecting windshields or windows (spray or aerosol formulation specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	

product.direct.inhalationaerosol

product.direct.inhalationvapor

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	100	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	24	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B	assume trigger spray, uniform distribution based on RIVM cleaning product fact sheet Table 9
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

45 . P.AP.150.999 windows or windshield-NOC

products for washing or protecting windshields or windows

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	100	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	24	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

46 . P.HM.010.029 adhesive remover-spray

solvent products for removing adhesives from surfaces (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedin	applied to surfaces (no washoff); some f.drain to account for clean-up of materials
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Adhesive Removers	(ounces per year: mean; SD) 34.46; 96.6	(per year: mean, SD) 4.22; 12.3	(minutes: mean;sd) 121.2; 171.63	6%
RIVM DIY Fact Sheet	Removers - Glue remover	2 kg	.25 /year	240 min	
RIVM DIY Fact Sheet	Removers - Wall paper remover	19 g to skin (no total given)	.5 /year		
EFH 17-16; 17-17	Adhesive Removers	81.84 (210.44) fluid oz	1.66 (1.67) /year	173 (304.5) min	58/240

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	700	Lognormal	0	99	B	~average converted to g
Frequency (per year)	use.freq	1	lognormal	0	99	B	~ average
Duration of Direct Use (min)	duration	180	Lognormal	0	99	B	~average
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.15	point	13	99	M	~average
Direct use prevalence (fraction)	use.prev	0.15	point	13	99	W	~average
Household prevalence for indirect exposure (fraction)	house.prev	0.15	point	0	99	B	~average
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	
Volume of aerosol cloud for	volume	24	Point	0	99	B	value for indoor product

spray products (m^3)

47 . P.HM.010.999 adhesive remover-NOC

solvent products for removing adhesives from surfaces

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Adhesive Removers	(ounces per year: mean; SD) 34.46; 96.6	(per year: mean, SD) 4.22; 12.3	(minutes: mean;sd) 121.2; 171.63	6%
RIVM DIY Fact Sheet	Removers - Glue remover	2 kg	.25 /year	240 min	
RIVM DIY Fact Sheet	Removers - Wall paper remover	19 g to skin (no total given)	.5 /year		
EFH 17-16; 17-17	Adhesive Removers	81.84 (210.44) fluid oz	1.66 (1.67) /year	173 (304.5) min	58/240

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	700	Lognormal	0	99	B	~average converted to g
Frequency (per year)	use.freq	1	lognormal	0	99	B	~ average
Duration of Direct Use (min)	duration	180	Lognormal	0	99	B	~average
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.15	point	13	99	M	~average
Direct use prevalence (fraction)	use.prev	0.15	point	13	99	W	~average
Household prevalence for indirect exposure (fraction)	house.prev	0.15	point	0	99	B	~average
Fraction of product mass in contact with skin	f.contact	0.00071	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

48 . P.HM.020.000 caulk or sealant

caulks and sealers for household use, including silicone products

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM DIY Fact Sheet	Caulk (called "Sealant cartridge" in European terminology)	75 g	3 / year	30 min	
RIVM DIY Fact Sheet	Caulk for Gluing/Construction adhesive (Called "Sealant / joints / assembly (glue)" in European Terminology)	390 g	1 / year	30 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	75	Lognormal	0	99	B	
Frequency (per year)	use.freq	3	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.6	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.6	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.0067	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

49 . P.HM.030.000 concrete

products for patching or cleaning concrete surfaces

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	8000	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	1	lognormal	0	99	B	
Duration of Direct Use (min)	duration	120	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.02	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	6.2e-05	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

50 . P.HM.040.029 corrosion protection-spray

products for protecting metal surfaces from corrosion or removing corrosion (spray or aerosol formulation specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Aerosol Rust Removers	(ounces per year: mean; SD) 18.21; 81.37	(per year: mean, SD) 6.17; 9.82	(minutes: mean;sd) 18.57; 48.54	8%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	90	Lognormal	0	99	B	~18 oz / 6 year
Frequency (per year)	use.freq	6	lognormal	0	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.08	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.08	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.08	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

51 . P.HM.040.999 corrosion protection-NOC

products for protecting metal surfaces from corrosion or removing corrosion

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass (ounces per year: mean; SD)	Frequency (per year: mean, SD)	Duration of Use (minutes: mean;sd)	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Aerosol Rust Removers	18.21; 81.37	6.17; 9.82	18.57; 48.54	8%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	90	Lognormal	0	99	B	~18 oz / 6 year
Frequency (per year)	use.freq	6	lognormal	0	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.08	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.08	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.08	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.0056	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

52 . P.HM.050.000 degreaser

products for degreasing indoor surfaces

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Solvent-Type Cleaning Fluids or Degreasers	(ounces per year: mean; SD) 58.3; 226.97	(per year: mean, SD) 16.46; 44.12	(minutes: mean;sd) 29.48; 97.49	28%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	100	Lognormal	0	99	B	
Frequency (per year)	use.freq	17	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.28	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.28	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.28	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.005	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

53 . P.HM.060.029 finish-spray

products for permanently coating and protecting wood surfaces, including polyurethane products (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to surfaces (no washoff); some f.drain to account for clean-up of materials
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Wood Stains, Varnishes, and Finishes	(ounces per year: mean; SD) 65.06; 174.01	(per year: mean, SD) 4.21; 12.19	(minutes: mean;sd) 117.17; 193.05	43%
RIVM DIY Fact Sheet	Coating - Coating large surfaces	3 kg	.33 /year	60 min	
RIVM DIY Fact Sheet	Coating - Repair coatings		.1 /year	240 min	
EFH - 17-14-15	Wood stains and Varnishes	.9 gallons	4.0 (4.9)/year	2.2 hours	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1730	Lognormal	0	99	B	~ average of 3000g and (1850 g /4 year)
Frequency (per year)	use.freq	2	lognormal	0	99	B	~ average
Duration of Direct Use (min)	duration	120	Lognormal	0	99	B	~consensus
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.43	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.43	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.43	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.02	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9
Fraction of mass used disposed of via the	f.drain	0.05	Uniform	0	99	B	see General Rules

residential drain
Volume of aerosol cloud for volume 24 Point 0 99 B value for indoor product
spray products (m³)

54 . P.HM.060.999 finish-NOC

products for permanently coating and protecting wood surfaces, including polyurethane products

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4-17-6 (Westat); Prevalence from original Westat Report	Wood Stains, Varnishes, and Finishes	(ounces per year: mean; SD) 65.06; 174.01	(per year: mean, SD) 4.21; 12.19	(minutes: mean;sd) 117.17; 193.05	43%
RIVM DIY Fact Sheet	Coating - Coating large surfaces	3 kg	.33 /year	60 min	
RIVM DIY Fact Sheet	Coating - Repair coatings		.1 /year	240 min	
EFH - 17-14-15	Wood stains and Varnishes	.9 gallons	4.0 (4.9)/year	2.2 hours	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1730	Lognormal	0	99	B	~ average of 3000g and (1850 g /4 year)
Frequency (per year)	use.freq	2	lognormal	0	99	B	~ average
Duration of Direct Use (min)	duration	120	Lognormal	0	99	B	~consensus
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.43	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.43	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.43	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.00029	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.02	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

55 . P.HM.070.000 grout sealer

products for coating and protecting tile or grout

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM DIY Fact Sheet	Coating - Repair coatings		.1 /year	240 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	340	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	1	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.0015	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

56 . P.HM.080.000 lock deicer

products for deicing car or residential locks

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	All assumed, mass= ~.5 oz
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

57 . P.HM.090.029 lubricant-spray

household maintenance lubricants (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedin	applied to surfaces (no washoff); some f.drain to account for clean-up of materials
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Silicone Lubricants	(ounces per year: mean; SD) 12.5; 27.85	(per year: mean, SD) 10.32; 25.44	(minutes: mean;sd) 10.42; 29.47	18%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Other Lubricants (excluding automotive)	(ounces per year: mean; SD) 9.93; 44.18	(per year: mean, SD) 10.66; 25.46	(minutes: mean;sd) 8.12; 32.2	35%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	30	Lognormal	0	99	B	~reported
Frequency (per year)	use.freq	10.5	lognormal	0	99	B	
Duration of Direct Use (min)	duration	9	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.27	point	13	99	M	average reported
Direct use prevalence (fraction)	use.prev	0.27	point	13	99	W	average reported
Household prevalence for indirect exposure (fraction)	house.prev	0.27	point	0	99	B	average reported
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

58 . P.HM.090.999 lubricant-NOC

household maintenance lubricants

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Silicone Lubricants	(ounces per year: mean; SD) 12.5; 27.85	(per year: mean, SD) 10.32; 25.44	(minutes: mean;sd) 10.42; 29.47	18%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Other Lubricants (excluding automotive)	(ounces per year: mean; SD) 9.93; 44.18	(per year: mean, SD) 10.66; 25.46	(minutes: mean;sd) 8.12; 32.2	35%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	30	Lognormal	0	99	B	~reported
Frequency (per year)	use.freq	10.5	lognormal	0	99	B	
Duration of Direct Use (min)	duration	9	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.27	point	13	99	M	average reported
Direct use prevalence (fraction)	use.prev	0.27	point	13	99	W	average reported
Household prevalence for indirect exposure (fraction)	house.prev	0.27	point	0	99	B	average reported
Fraction of product mass in contact with skin	f.contact	0.017	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

59 . P.HM.100.000 mortar or grout

products for attaching and grouting interior tiles

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM DIY Fact Sheet	Thinset mortar (called "Tile Glue" in European terminology)	15 kg	.5 /year	360 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15000	Lognormal	0	99	B	
Frequency (per year)	use.freq	0.5	lognormal	0	99	B	
Duration of Direct Use (min)	duration	360	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	3.3e-05	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

60 . P.HM.110.029 multipurpose adhesive-spray

general purpose repair adhesives including all purpose glues, super glue, and epoxies; not including wood glues (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to surfaces (no washoff); some f.drain to account for clean-up of materials
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Adhesives	(ounces per year: mean; SD) 7.49; 55.9	(per year: mean, SD) 8.89; 26.2	(minutes: mean;sd) 15.58; 81.8	61%
RIVM DIY Fact Sheet	Glue - Bottled glue - universal/wood	10 g	1/week	20 min	
RIVM DIY Fact Sheet	Glue - Spray glue	170 s * 1.5 g/s = 255 g	1/month		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	255	Lognormal	0	99	B	"spray glue" value
Frequency (per year)	use.freq	12	lognormal	0	99	B	"spray glue" value
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.61	point	13	99	M	"adhesives" value
Direct use prevalence (fraction)	use.prev	0.61	point	13	99	W	"adhesives" value
Household prevalence for indirect exposure (fraction)	house.prev	0.61	point	0	99	B	"adhesives" value
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	
Volume of aerosol cloud for	volume	24	Point	0	99	B	value for indoor product

spray products (m^3)

61 . P.HM.110.999 multipurpose adhesive-NOC

general purpose repair adhesives including all purpose glues, super glue, and epoxies; not including wood glues

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to surfaces (no washoff); some f.drain to account for clean-up of materials
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Adhesives	(ounces per year: mean; SD) 7.49; 55.9	(per year: mean, SD) 8.89; 26.2	(minutes: mean;sd) 15.58; 81.8	61%
RIVM DIY Fact Sheet	Glue - Bottled glue - universal/wood	10 g	1/week	20 min	
RIVM DIY Fact Sheet	Glue - Spray glue	170 s * 1.5 g/s = 255 g	1/month		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	17	Lognormal	0	99	B	~average of "adhesives" and "bottled glue"
Frequency (per year)	use.freq	35	lognormal	0	99	B	~average of "adhesives" and "bottled glue"
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.61	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.61	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.61	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.61	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.029	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

62 . P.HM.120.005 paint-exterior

home improvement paints characterized as exterior use

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Latex Paint	(ounces per year: mean; SD) 371.27; 543.86	(per year: mean, SD) 3.93; 20.81	(minutes: mean;sd) 295.08; 476.11	55%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Oil Paint	(ounces per year: mean; SD) 168.92; 367.82	(per year: mean, SD) 5.66; 23.1	(minutes: mean;sd) 194.12; 345.68	30%
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1) RIVM Paint Fact Sheet	Paints	0.13-1612 (g/use; min-max ranges for North America)	0.003-1 (per day; min-max ranges for North America)		
RIVM Paint Fact Sheet	Brush / roller painting, solvent rich paint	1000 g	1/year	120 minutes	
RIVM Paint Fact Sheet	Brush / roller painting, high solid paint	1000 g	1/year	120 minutes	
RIVM Paint Fact Sheet	Brush / roller painting, waterborne paint	1000 g	1/year	120 minutes	
RIVM Paint Fact Sheet	Brush / roller painting, waterborne wall paint	1000 g	1/year	120 minutes	
EFH - 17-14-15	Latex Paint	3.9 gallons	4.2 (5.5) /year	3 hours	
EFH - 17-14-15	Oils-Based Paint	2.6 gallons	5.1 (12.0)/year	2.1 hours	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	2700	Lognormal	0	99	B	Use upper reported value to account for "exterior"
Frequency (per year)	use.freq	1	lognormal	0	99	B	
Duration of Direct Use (min)	duration	300	Lognormal	0	99	B	

Direct use prevalence (fraction)	use.prev	0.02	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.43	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.43	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.43	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.0033	Point	0	99	B	See general rules for paints
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

63 . P.HM.120.009 paint-interior

home improvement paints characterized as interior use

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Latex Paint	(ounces per year: mean; SD) 371.27; 543.86	(per year: mean, SD) 3.93; 20.81	(minutes: mean;sd) 295.08; 476.11	55%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Oil Paint	(ounces per year: mean; SD) 168.92; 367.82	(per year: mean, SD) 5.66; 23.1	(minutes: mean;sd) 194.12; 345.68	30%
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1) RIVM Paint Fact Sheet	Paints	0.13-1612 (g/use; min-max ranges for North America)	0.003-1 (per day; min-max ranges for North America)		
RIVM Paint Fact Sheet	Brush / roller painting, solvent rich paint	1000 g	1/year	120 minutes	
RIVM Paint Fact Sheet	Brush / roller painting, high solid paint	1000 g	1/year	120 minutes	
RIVM Paint Fact Sheet	Brush / roller painting, waterborne paint	1000 g	1/year	120 minutes	
RIVM Paint Fact Sheet	Brush / roller painting, waterborne wall paint	1000 g	1/year	120 minutes	
EFH - 17-14-15	Latex Paint	3.9 gallons	4.2 (5.5) /year	3 hours	
EFH - 17-14-15	Oils-Based Paint	2.6 gallons	5.1 (12.0)/year	2.1 hours	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1300	Lognormal	0	99	B	~average reported
Frequency (per year)	use.freq	5	lognormal	0	99	B	
Duration of Direct Use (min)	duration	120	Lognormal	0	99	B	consensus

Direct use prevalence (fraction)	use.prev	0.02	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.43	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.43	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.43	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.0028	Point	0	99	B	See general rules for paints
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B	value for indoor product

64 . P.HM.120.029 paint-spray

home improvement paints not characterized as to interior or exterior use (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to surfaces (no washoff); some f.drain to account for clean-up of materials
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Aerosol Spray Paint	(ounces per year: mean; SD) 30.75; 52.84	(per year: mean, SD) 4.22; 15.59	(minutes: mean;sd) 39.54; 87.79	35%
RIVM Paint Fact Sheet	Spraying paint with a spray can	.33 g/s x 15 min = 4.95	2/year	20 min	
RIVM Paint Fact Sheet	Pneumatic spraying of paint	.5 g s x 800 s = 400 g	2/ year	25 min	
EFH 17-18 17-19	Spray Paint	83.92 (175.32) fluid oz	8.23 (31.98) /year	40.87 (71.77) minutes	775/1724

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	300	Lognormal	0	99	B	~consensus
Frequency (per year)	use.freq	5	lognormal	0	99	B	average rounded
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	~average
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9
Fraction of mass used disposed of via the	f.drain	0.05	Uniform	0	99	B	see General Rules

residential drain
Volume of aerosol cloud for volume 24 Point 0 99 B value for indoor product
spray products (m³)

65 . P.HM.120.999 paint-NOC

home improvement paints not characterized as to interior or exterior use

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Latex Paint	(ounces per year: mean; SD) 371.27; 543.86	(per year: mean, SD) 3.93; 20.81	(minutes: mean;sd) 295.08; 476.11	55%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Oil Paint	(ounces per year: mean; SD) 168.92; 367.82	(per year: mean, SD) 5.66; 23.1	(minutes: mean;sd) 194.12; 345.68	30%
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1) RIVM Paint Fact Sheet	Paints	0.13-1612 (g/use; min-max ranges for North America)	0.003-1 (per day; min-max ranges for North America)		
RIVM Paint Fact Sheet	Brush / roller painting, solvent rich paint	1000 g	1/year	120 minutes	
RIVM Paint Fact Sheet	Brush / roller painting, high solid paint	1000 g	1/year	120 minutes	
RIVM Paint Fact Sheet	Brush / roller painting, waterborne paint	1000 g	1/year	120 minutes	
RIVM Paint Fact Sheet	Brush / roller painting, waterborne wall paint	1000 g	1/year	120 minutes	
EFH - 17-14-15	Latex Paint	3.9 gallons	4.2 (5.5) /year	3 hours	
EFH - 17-14-15	Oils-Based Paint	2.6 gallons	5.1 (12.0)/year	2.1 hours	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	2000	Lognormal	0	99	B	Average of interior and exterior
Frequency (per year)	use.freq	3	lognormal	0	99	B	Average of interior and exterior
Duration of Direct Use (min)	duration	210	Lognormal	0	99	B	Average of interior and

							exterior
Direct use prevalence (fraction)	use.prev	0.02	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.43	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.43	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.43	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.0032	Point	0	99	B	See general rules for paints
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

66 . P.HM.130.029 paint cleaner-spray

paint removing products for clean-up (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Paint Removers/Strippers	(ounces per year: mean; SD) 63.73; 144.33	(per year: mean, SD) 3.68; 9.1	(minutes: mean;sd) 125.27; 286.59	30%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

67 . P.HM.130.999 paint cleaner-NOC

paint removing products for clean-up

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Paint Removers/Strippers	(ounces per year: mean; SD) 63.73; 144.33	(per year: mean, SD) 3.68; 9.1	(minutes: mean;sd) 125.27; 286.59	30%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	
Frequency (per year)	use.freq	4	lognormal	0	99	B	All assumed
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

68 . P.HM.140.000 paint texture

textured paints including ceiling texture

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1000	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	1	lognormal	0	99	B	
Duration of Direct Use (min)	duration	120	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.0036	Point	0	99	B	See general rules for paints
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

69 . P.HM.150.000 paint thinner

paint or lacquer thinners

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Paint Thinners	(ounces per year: mean; SD) 69.45; 190.55	(per year: mean, SD) 6.78; 22.1	(minutes: mean;sd) 39.43; 114.85	36%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	30	Lognormal	0	99	B	
Frequency (per year)	use.freq	7	lognormal	0	99	B	
Duration of Direct Use (min)	duration	40	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.36	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.36	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.36	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.017	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

70 . P.HM.160.000 patch and repair

drywall, ceiling, and joint compounds, spackles, or fillers

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM DIY Fact Sheet	Plasters and equalizers-Wall plaster		.2 /year	120 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	200	Lognormal	0	99	B	Assumed
Frequency (per year)	use.freq	0.2	lognormal	0	99	B	
Duration of Direct Use (min)	duration	120	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.0025	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

71 . P.HM.170.000 plumbing

miscellaneous plumbing repair products (putties, tapes, cements)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g) Frequency (per year)	mass use.freq	50 2	Lognormal lognormal	0 0	99 99	B B	All assumed
Duration of Direct Use (min)	duration	60	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

72 . P.HM.180.005 primer-exterior

home improvement primers characterized as exterior use

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Primers and Special Primers	(ounces per year: mean; SD) 68.39; 171.21	(per year: mean, SD) 3.43; 8.76	(minutes: mean;sd) 91.29; 175.05	14%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	600	Lognormal	0	99	B	~ 70 oz / 3.5 per year
Frequency (per year)	use.freq	3.5	lognormal	0	99	B	
Duration of Direct Use (min)	duration	90	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.14	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.14	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.14	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.0045	Point	0	99	B	See general rules for paints
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

73 . P.HM.180.009 primer-interior

home improvement primers characterized as interior use

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Primers and Special Primers	(ounces per year: mean; SD) 68.39; 171.21	(per year: mean, SD) 3.43; 8.76	(minutes: mean;sd) 91.29; 175.05	14%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	600	Lognormal	0	99	B	
Frequency (per year)	use.freq	3.5	lognormal	0	99	B	
Duration of Direct Use (min)	duration	90	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.14	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.14	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.14	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.0045	Point	0	99	B	See general rules for paints
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

74 . P.HM.180.029 primer-spray

home improvement primers not characterized as to interior or exterior use (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to surfaces (no washoff); some f.drain to account for clean-up of materials
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Primers and Special Primers	(ounces per year: mean; SD) 68.39; 171.21	(per year: mean, SD) 3.43; 8.76	(minutes: mean;sd) 91.29; 175.05	14%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	600	Lognormal	0	99	B	
Frequency (per year)	use.freq	3.5	lognormal	0	99	B	
Duration of Direct Use (min)	duration	90	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.14	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.14	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.14	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

75 . P.HM.180.999 primer-NOC

home improvement primers not characterized as to interior or exterior use

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Primers and Special Primers	(ounces per year: mean; SD) 68.39; 171.21	(per year: mean, SD) 3.43; 8.76	(minutes: mean;sd) 91.29; 175.05	14%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	600	Lognormal	0	99	B	
Frequency (per year)	use.freq	3.5	lognormal	0	99	B	
Duration of Direct Use (min)	duration	90	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.14	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.14	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.14	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.00083	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

76 . P.HM.190.000 putty or filler

putty-type crack, hole, and wood fillers

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM DIY Fact Sheet	Fillers and putty-General filler from powder		2/year		
RIVM DIY Fact Sheet	Fillers and putty-Large hole filler	.5 g to fingers (no total amount given)	1/year		
RIVM DIY Fact Sheet	Fillers and putty-Filler/putty from tube	40 g	3/year	20 min	
RIVM DIY Fact Sheet	Fillers and putty-Two-component filler	200 g	2/year	5 min	
RIVM DIY Fact Sheet	Fillers and putty-Putty from spray	135 s x 1.5 g/s = 202.5	1/ year	30 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	150	Lognormal	0	99	B	~average
Frequency (per year)	use.freq	2	lognormal	0	99	B	consensus
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	rounded average
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.0033	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

77 . P.HM.200.000 refrigerant

air conditioner or other refrigerants

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	

product.direct.inhalationaerosol

product.direct.inhalationvapor

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	1	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.033	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.1	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

78 . P.HM.210.000 roof

products for roof maintenance or repair, including cleaners, sealers, or coatings

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5000	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	0.3	lognormal	0	99	B	
Duration of Direct Use (min)	duration	480	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1e-04	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

79 . P.HM.220.000 septic system

septic system treatment products

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	

product.direct.inhalationvapor

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	500	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.02	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.001	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

80 . P.HM.230.000 spray foam

spray insulation and weatherstripping products

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM DIY Fact Sheet	Insulation foam	825 g	.2 /year	30 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	825	Lognormal	0	99	B	
Frequency (per year)	use.freq	0.2	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.00061	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

81 . P.HM.240.005 stain-exterior

wood stains characterized as exterior use, including deck stains

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Wood Stains, Varnishes, and Finishes	(ounces per year: mean; SD) 65.06; 174.01	(per year: mean, SD) 4.21; 12.19	(minutes: mean;sd) 117.17; 193.05	43%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	2000	Lognormal	0	99	B	Assumed higher than reported for exterior use
Frequency (per year)	use.freq	1	lognormal	0	99	B	Assumed
Duration of Direct Use (min)	duration	120	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.43	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.43	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.43	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.0018	Point	0	99	B	See general rules for paints
Fraction of product mass on skin retained after direct use	f.residual	0.02	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

82 . P.HM.240.999 stain-NOC

wood stains not characterized as interior or exterior use

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Wood Stains, Varnishes, and Finishes	(ounces per year: mean; SD) 65.06; 174.01	(per year: mean, SD) 4.21; 12.19	(minutes: mean;sd) 117.17; 193.05	43%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	500	Lognormal	0	99	B	approx 65 oz / 4 year
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	120	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.001	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.02	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

83 . P.HM.250.029 stripper-spray

paint and finish strippers (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedin	applied to surfaces (no washoff); some f.drain to account for clean-up of materials
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Paint Removers/Strippers	(ounces per year: mean; SD) 63.73; 144.33	(per year: mean, SD) 3.68; 9.1	(minutes: mean;sd) 125.27; 286.59	30%
RIVM DIY Fact Sheet	Removers - Paint remover	1 kg	1 /year	60 min	
RIVM DIY Fact Sheet	Removers - Sealant / foam remover	100 g	5 /year	120 min	
RIVM Cleaning Product Fact Sheet	Floor products- Strippers		1/year		
EFH 17-20 17-21	Paint Removers/Strippers	64.84 (157.50) fluid oz	3.54 (7.32) /year	144.59 (176) min	316/1724

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1400	Lognormal	0	99	B	~ average of reported
Frequency (per year)	use.freq	3	lognormal	0	99	B	~ average of reported
Duration of Direct Use (min)	duration	120	Lognormal	0	99	B	consensus
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.24	point	13	99	M	~ average of reported
Direct use prevalence (fraction)	use.prev	0.24	point	13	99	W	~ average of reported
Household prevalence for indirect exposure (fraction)	house.prev	0.24	point	0	99	B	~ average of reported
Fraction of product mass in contact with skin	f.contact	0.001	Point	0	99	B	Assume averting behavior
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9
Fraction of mass used disposed of via the	f.drain	0.05	Uniform	0	99	B	see General Rules

residential drain
Volume of aerosol cloud for volume 24 Point 0 99 B value for indoor product
spray products (m^3)

84 . P.HM.250.999 stripper-NOC

paint and finish strippers

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Paint Removers/Strippers	(ounces per year: mean; SD) 63.73; 144.33	(per year: mean, SD) 3.68; 9.1	(minutes: mean;sd) 125.27; 286.59	30%
RIVM DIY Fact Sheet	Removers - Paint remover	1 kg	1 /year	60 min	
RIVM DIY Fact Sheet	Removers - Sealant / foam remover	100 g	5 /year	120 min	
RIVM Cleaning Product Fact Sheet	Floor products- Strippers		1/year		
EFH 17-20 17-21	Paint Removers/Strippers	64.84 (157.50) fluid oz	3.54 (7.32) /year	144.59 (176) min	316/1724

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1400	Lognormal	0	99	B	~ average of reported
Frequency (per year)	use.freq	3	lognormal	0	99	B	~ average of reported
Duration of Direct Use (min)	duration	120	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	consensus
Direct use prevalence (fraction)	use.prev	0.24	point	13	99	M	~ average of reported
Direct use prevalence (fraction)	use.prev	0.24	point	13	99	W	~ average of reported
Household prevalence for indirect exposure (fraction)	house.prev	0.24	point	0	99	B	~ average of reported
Fraction of product mass in contact with skin	f.contact	0.001	Point	0	99	B	Assume averting behavior
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

85 . P.HM.260.005 surface sealer-exterior

products for coating and protecting household surfaces characterized as exterior use

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Water Repellents/Protectors	(ounces per year: mean; SD) 11.38; 22	(per year: mean, SD) 3.5; 11.7	(minutes: mean;sd) 14.46; 24.1	36%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Outdoor Water Repellents (for wood or cement)	(ounces per year: mean; SD) 148.71; 280.65	(per year: mean, SD) 2.07; 3.71	(minutes: mean;sd) 104.94; 115.36	9%
RIVM Cleaning Product Fact Sheet	Floor products- Sealers		.1 /year		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	2250	Lognormal	0	99	B	~value for "outdoor water repellents"
Frequency (per year)	use.freq	2	lognormal	0	99	B	~value for "outdoor water repellents"
Duration of Direct Use (min)	duration	105	Lognormal	0	99	B	~value for "outdoor water repellents"
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.09	point	13	99	M	~value for "outdoor water repellents"
Direct use prevalence (fraction)	use.prev	0.09	point	13	99	W	~value for "outdoor water repellents"
Household prevalence for indirect exposure (fraction)	house.prev	0.09	point	0	99	B	~value for "outdoor water repellents"
Fraction of product mass in contact with skin	f.contact	0.00022	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

86 . P.HM.260.029 surface sealer-spray

products for coating and protecting household surfaces not characterized as interior or exterior use (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to surfaces (no washoff); some f.drain to account for clean-up of materials
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Water Repellents/Protectors	(ounces per year: mean; SD) 11.38; 22	(per year: mean, SD) 3.5; 11.7	(minutes: mean;sd) 14.46; 24.1	36%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Outdoor Water Repellents (for wood or cement)	(ounces per year: mean; SD) 148.71; 280.65	(per year: mean, SD) 2.07; 3.71	(minutes: mean;sd) 104.94; 115.36	9%
RIVM Cleaning Product Fact Sheet	Floor products- Sealers		.1 /year		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1150	Lognormal	0	99	B	~ average of reported
Frequency (per year)	use.freq	2	lognormal	0	99	B	~ average of reported
Duration of Direct Use (min)	duration	60	Lognormal	0	99	B	~ average of reported
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.23	point	13	99	M	~ average of reported
Direct use prevalence (fraction)	use.prev	0.23	point	13	99	W	~ average of reported
Household prevalence for indirect exposure (fraction)	house.prev	0.23	point	0	99	B	~ average of reported
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9
Fraction of mass used disposed of via the	f.drain	0.05	Uniform	0	99	B	see General Rules

residential drain
Volume of aerosol cloud volume 24 Point 0 99 B value for indoor product
for spray products (m³)

87 . P.HM.260.999 surface sealer-NOC

products for coating and protecting household surfaces not characterized as interior or exterior use

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Water Repellents/Protectors	(ounces per year: mean; SD) 11.38; 22	(per year: mean, SD) 3.5; 11.7	(minutes: mean;sd) 14.46; 24.1	36%
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Outdoor Water Repellents (for wood or cement)	(ounces per year: mean; SD) 148.71; 280.65	(per year: mean, SD) 2.07; 3.71	(minutes: mean;sd) 104.94; 115.36	9%
RIVM Cleaning Product Fact Sheet	Floor products- Sealers		.1 /year		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1150	Lognormal	0	99	B	~ average of reported
Frequency (per year)	use.freq	2	lognormal	0	99	B	~ average of reported
Duration of Direct Use (min)	duration	60	Lognormal	0	99	B	~ average of reported
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.23	point	13	99	M	~ average of reported
Direct use prevalence (fraction)	use.prev	0.23	point	13	99	W	~ average of reported
Household prevalence for indirect exposure (fraction)	house.prev	0.23	point	0	99	B	~ average of reported
Fraction of product mass in contact with skin	f.contact	0.00043	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

88 . P.HM.270.000 welding

miscellaneous welding products including gases, fluxes, and adhesives

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	20	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	60	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.025	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

89 . P.HM.280.000 wood adhesive

adhesives specifically characterized as wood glues

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM DIY Fact Sheet	Glue - Bottled glue - universal/wood	10 g	1/week	20 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	M	Assumed
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	W	Assumed
Household prevalence for indirect exposure (fraction)	house.prev	0.3	point	0	99	B	Assumed
Fraction of product mass in contact with skin	f.contact	0.05	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

90 . P.HO.010.000 printer ink

ink for inkjet printers

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.indirect	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0	Point	0	99	B	assume enclosed
Fraction of product mass on skin retained after direct use	f.residual	0.5	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

91 . P.HO.020.000 printer toner

laser printer toners

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.indirect	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0	Point	0	99	B	assume enclosed
Fraction of product mass on skin retained after direct use	f.residual	0.5	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

92 . P.HO.030.000 white out

correction fluids for ink or type

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Typewriter Correction Fluid	(ounces per year: mean; SD) 4.14; 13.72	(per year: mean, SD) 40; 74.78	(minutes: mean;sd) 7.62; 29.66	26%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	3	Lognormal	0	99	B	
Frequency (per year)	use.freq	40	lognormal	0	99	B	
Duration of Direct Use (min)	duration	8	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	M	Assumed reduced prevalence since study
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	Assumed reduced prevalence since study
Household prevalence for indirect exposure (fraction)	house.prev	0.02	point	0	99	B	Assumed reduced prevalence since study
Fraction of product mass in contact with skin	f.contact	0.17	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

93 . P.IH.010.007 air freshener-gel

home air fresheners (gel formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Bennett et al. 2012)	Air freshener				63; 82 pct hshlds parents;older adults
SUPERB (Moran et al. 2012)	Oils or Air Freshening Candles		12.24 (24.62); 14.79 (16.87) per month parents/older adults		14%;16% parents/older adults
SUPERB (Moran et al. 2012)	Plug-ins		0.67 (0.81); 0.87 (1.82) per month parents/older adults		25%;19% parents/older adults
SUPERB (Moran et al. 2012)	Air Fresheners Solids or Gels		0.37 (0.36); 0.47 (0.49) per month parents/older adults		5%;7% parents/older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	6	lognormal	0	99	B	~ average of "gel" and "plug in" values
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	Assumed
Direct use prevalence (fraction)	use.prev	0.15	point	13	99	M	~ average of "gel" and "plug in" values
Direct use prevalence (fraction)	use.prev	0.15	point	13	99	W	~ average of "gel" and "plug in" values
Household prevalence for indirect exposure (fraction)	house.prev	0.15	point	0	99	B	~ average of "gel" and "plug in" values
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	assumed
Fraction of product mass on skin retained after direct use	f.residual	0.5	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

94 . P.IH.010.013 air freshener-liquid

home air fresheners (liquid formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cosmetics Fact Sheet	Essential oils -Air Freshener	1.08 g	52 /year	240 min	
SUPERB (Bennett et al. 2012)	Air freshener				63; 82 pct hshlds parents;older adults
SUPERB (Moran et al. 2012)	Oils or Air Freshening Candles		12.24 (24.62); 14.79 (16.87) per month parents/older adults		14%;16% parents/older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	100	lognormal	0	99	B	~ average of reported
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.15	point	13	99	M	Average of SUPERB values
Direct use prevalence (fraction)	use.prev	0.15	point	13	99	W	Average of SUPERB values
Household prevalence for indirect exposure (fraction)	house.prev	0.15	point	0	99	B	Average of SUPERB values
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	assumed
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

95 . P.IH.010.016 air freshener-oil or diffuse

home air fresheners (oil formulations or diffusers)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cosmetics Fact Sheet	Essential oils -Air Freshener	1.08 g	52 /year	240 min	
SUPERB (Bennett et al. 2012)	Air freshener				63; 82 pct hshlds parents;older adults
SUPERB (Moran et al. 2012)	Oils or Air Freshening Candles		12.24 (24.62); 14.79 (16.87) per month parents/older adults		14%;16% parents/older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	~ average of reported
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.15	point	13	99	M	Average of SUPERB values
Direct use prevalence (fraction)	use.prev	0.15	point	13	99	W	Average of SUPERB values
Household prevalence for indirect exposure (fraction)	house.prev	0.15	point	0	99	B	Average of SUPERB values
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	assumed
Fraction of product mass on skin retained after direct use	f.residual	0.5	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

96 . P.IH.010.029 air freshener-spray

home air fresheners (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Bennett et al. 2012)	Air freshener				63; 82 pct hshlds parents;older adults
SUPERB (Moran et al. 2012)	Air Freshener Sprays		32.83 (127.34); 24.7 (34.28) per month parents/older adults		46%;58% parents/older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	~.5 oz
Frequency (per year)	use.freq	345	lognormal	0	99	B	Average of SUPERB values
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.52	point	13	99	M	Average of SUPERB values
Direct use prevalence (fraction)	use.prev	0.52	point	13	99	W	Average of SUPERB values
Household prevalence for indirect exposure (fraction)	house.prev	0.52	point	0	99	B	Average of SUPERB values
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.5	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 value for indoor product
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	

97 . P.IH.010.999 air freshener-NOC

home air fresheners

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cosmetics Fact Sheet	Essential oils -Air Freshener	1.08 g	52 /year	240 min	
SUPERB (Bennett et al. 2012)	Air freshener				63; 82 pct hshlds parents;older adults
SUPERB (Moran et al. 2012)	Air Freshener Sprays		32.83 (127.34); 24.7 (34.28) per month parents/older adults		46%;58% parents/older adults
SUPERB (Moran et al. 2012)	Oils or Air Freshening Candles		12.24 (24.62); 14.79 (16.87) per month parents/older adults		14%;16% parents/older adults
SUPERB (Moran et al. 2012)	Plug-ins		0.67 (0.81); 0.87 (1.82) per month parents/older adults		25%;19% parents/older adults
SUPERB (Moran et al. 2012)	Air Fresheners Solids or Gels		0.37 (0.36); 0.47 (0.49) per month parents/older adults		5%;7% parents/older adults
SUPERB (Moran et al. 2012)	Plain or Scented Candles		404% (7.79); 4.8 (870%)p per month parents/older adults		73%;61% parents/older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	~.5 oz
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.73	point	13	99	M	Average of SUPERB values for "Air freshener"
Direct use prevalence (fraction)	use.prev	0.73	point	13	99	W	Average of SUPERB values for "Air freshener"
Household prevalence for indirect exposure (fraction)	house.prev	0.73	point	0	99	B	Average of SUPERB values for "Air freshener"
Fraction of product mass in contact with skin	f.contact	0.033	Point	0	99	B	assumed
Fraction of product mass on skin retained after direct use	f.residual	0.5	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

98 . P.IH.020.000 automatic dishwashing additive

rinse aids, spot removers, and dishwasher cleaners

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Machine dishwashing products - - Liquid rinse aids	500 g	35/year	.75 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10	Lognormal	0	99	B	Assumed - RIVM value seems high
Frequency (per year)	use.freq	35	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.001	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

99 . P.IH.030.007 automatic dishwashing detergent-gel

detergents for automatic dishwashers (gel formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Machine dishwashing products - Powders	.35/day			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	100	Lognormal	0	99	B	Assumed
Frequency (per year)	use.freq	365	lognormal	0	99	B	Assumed - RIVM value seems low
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	Assumed
Direct use prevalence (fraction)	use.prev	0.7	point	13	99	M	Assumed
Direct use prevalence (fraction)	use.prev	0.7	point	13	99	W	Assumed
Household prevalence for indirect exposure (fraction)	house.prev	0.7	point	0	99	B	Assumed
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

100 . P.IH.030.023 automatic dishwashing detergent-powder

detergents for automatic dishwashers (powder formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Machine dishwashing products - Powders		.35/day		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	200	Lognormal	0	99	B	Assumed
Frequency (per year)	use.freq	365	lognormal	0	99	B	Assumed - RIVM value seems low
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	Assumed
Direct use prevalence (fraction)	use.prev	0.7	point	13	99	M	Assumed
Direct use prevalence (fraction)	use.prev	0.7	point	13	99	W	Assumed
Household prevalence for indirect exposure (fraction)	house.prev	0.7	point	0	99	B	Assumed
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

101 . P.IH.030.999 automatic dishwashing detergent-NOC

detergents for automatic dishwashers

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Machine dishwashing products - Powders		.35/day		
RIVM Cleaning Product Fact Sheet	Machine dishwashing products - - Liquid rinse aids	500 g	35/year	.75 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	150	Lognormal	0	99	B	Average of gels and powders
Frequency (per year)	use.freq	365	lognormal	0	99	B	Assumed - RIVM value seems low
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	Assumed
Direct use prevalence (fraction)	use.prev	0.7	point	13	99	M	Assumed
Direct use prevalence (fraction)	use.prev	0.7	point	13	99	W	Assumed
Household prevalence for indirect exposure (fraction)	house.prev	0.7	point	0	99	B	Assumed
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

102 . P.IH.040.029 bathroom cleaner-spray

bathtub, tile, and toilet surface cleaners (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedin	applied to body, clothing, directly to drain, or to surfaces with wash-off
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Sanitary products - Bathroom cleaners- Sprays	.39 g /s * 1.5 min = 35.1 g	52 /year	25 min	
RIVM Cleaning Product Fact Sheet	Sanitary products - Toilet cleaners	55 g	120 -260 /year	3 min	
RIVM Cleaning Product Fact Sheet	Sanitary products - Toilet rim cleaners	30-70 g	365/year		
SUPERB (Moran et al 2012) Frequencies are per month	Tub/shower cleaner		5.06; (6.45); 3.62; (5.9); 7.48; (9.68); 7.78; (10.97) Mean (SD) for W;M parents; W;M older adults		79%; 68%; 81%; 68% (W;M parents W; M older adults)
SUPERB (Bennett et al. 2012)	Bathroom products				90; 100 pct hshlds parents;older adults
EFH - 17-12	Bathroom Tile Cleaners			47 hours per year	
EFH 17-37 Weegels and Van Veen 2001	Toilet Cleaner	9 - 153 g	.28 (0.55) /day	74 (204) minutes	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	35	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	25	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.68	point	13	99	M	SUPERB average for tub and shower cleaners
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	W	SUPERB average for tub and shower cleaners
Household prevalence for	house.prev	0.8	point	0	99	B	SUPERB average for tub and shower

indirect exposure (fraction)							cleaners
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B	value for indoor product

103 . P.IH.040.999 bathroom cleaner-NOC

bathtub, tile, and toilet surface cleaners

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Sanitary products - Bathroom cleaners- Sprays	.39 g /s * 1.5 min = 35.1 g	52 /year	25 min	
RIVM Cleaning Product Fact Sheet	Sanitary products - Bathroom cleaners- - Liquids	260 g /45 = 5 g	4 /year (shower stall cleaners)	20 min	
RIVM Cleaning Product Fact Sheet	Sanitary products - Toilet cleaners	55 g	120 -260 /year	3 min	
RIVM Cleaning Product Fact Sheet	Sanitary products - Toilet rim cleaners	30-70 g	365/year		
SUPERB (Moran et al 2012) Frequencies are per month	Tub/shower cleaner		5.06; (6.45); 3.62; (5.9); 7.48; (9.68); 7.78; (10.97) Mean (SD) for W;M parents; W;M older adults		79%; 68%; 81%; 68% (W;M parents W; M older adults)
SUPERB (Bennett et al. 2012)	Bathroom products				90; 100 pct hshlds parents;older adults
EFH - 17-12	Bathroom Tile Cleaners			47 hours per year	
EFH 17-37 Weegels and Van Veen 2001	Toilet Cleaner	9 - 153 g	.28 (0.55) /day	74 (204) minutes	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	~average, rounded
Frequency (per year)	use.freq	130	lognormal	0	99	B	approximate average of reported
Duration of Direct Use (min)	duration	16	Lognormal	0	99	B	average of 25,20,3
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.68	point	13	99	M	SUPERB average for tub and shower cleaners
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	W	SUPERB average for tub and shower cleaners
Household prevalence for indirect exposure (fraction)	house.prev	0.8	point	0	99	B	SUPERB average for tub and shower cleaners
Fraction of product mass in contact	f.contact	0.01	Point	0	99	B	See general rules for cleaning

with skin							products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

104 . P.IH.050.000 bleach

bleaches (including color-safe bleaches)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.8	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

105 . P.IH.060.000 candles

candles

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.indirect	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	No use of this product currently
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	60	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.001	Point	0	99	B	assume nearly solid- small transfer
Fraction of product mass on skin retained after direct use	f.residual	0.5	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

106 . P.IH.070.029 carpet cleaner-spray

carpet cleaning products and machine solutions (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Carpet products - Liquids	500 g	.5 / year	110 min	
RIVM Cleaning Product Fact Sheet	Carpet products - Spray extraction machine	500 g	.5 / year	110 min	
RIVM Cleaning Product Fact Sheet	Carpet products - Spray foams spot cleaner	4 g	10 / year	10 min	
SUPERB (Moran et al 2012) Frequencies are per month	Carpet cleaner		1.46; (3.74); 0.91; (1.65); 0.68; (0.92); 0.92; (1.32) Mean (SD) for W;M parents; W;M older adults		50%; 47%; 52%; 52% (W;M parents W; M older adults)

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	4	Lognormal	0	99	B	RIVM
Frequency (per year)	use.freq	12	lognormal	0	99	B	Use North America values (average of SUPERB)
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.49	point	13	99	M	average of SUPERB
Direct use prevalence (fraction)	use.prev	0.52	point	13	99	W	average of SUPERB
Household prevalence for indirect exposure (fraction)	house.prev	0.52	point	0	99	B	average of SUPERB
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays,

aerosolized								uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B		
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B		value for indoor product

107 . P.IH.070.999 carpet cleaner-NOC

carpet cleaning products and machine solutions

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Carpet products - Liquids	500 g	.5 / year	110 min	
RIVM Cleaning Product Fact Sheet	Carpet products - Spray extraction machine	500 g	.5 / year	110 min	
RIVM Cleaning Product Fact Sheet	Carpet products - Spray foams spot cleaner	4 g	10 / year	10 min	
SUPERB (Moran et al 2012) Frequencies are per month	Carpet cleaner		1.46; (3.74); 0.91; (1.65); 0.68; (0.92); 0.92; (1.32) Mean (SD) for W;M parents; W;M older adults		50%; 47%; 52%; 52% (W;M parents W; M older adults)
EFH - 17-12	Rug Cleaners/Shampoos			12.00 hours per year	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	500	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	Use North America values (average of SUPERB)
Duration of Direct Use (min)	duration	110	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.49	point	13	99	M	average of SUPERB
Direct use prevalence (fraction)	use.prev	0.52	point	13	99	W	average of SUPERB
Household prevalence for indirect exposure (fraction)	house.prev	0.52	point	0	99	B	average of SUPERB
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

108 . P.IH.080.000 carpet deodorizer

carpet deodorizers

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Carpet products - Powders	1.7 s * 22 min= 2244 g	.5 /year	22 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	500	Lognormal	0	99	B	assumed
Frequency (per year)	use.freq	12	lognormal	0	99	B	assumed higher for the U.S.
Duration of Direct Use (min)	duration	22	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

109 . P.IH.090.000 dish soap

hand dish washing liquids and detergents

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Dishwashing products - Hand dishwashing liquids	500 g	462/year	16 min	
EFH 17-37 Weegels and Van Veen 2001	Dishwashing Liquid	5 (3) g	.63 (0.79) /day	11 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Dishwashing liquids-hand wash (dishes)	3-28 (g/use; min-max ranges for North America)	0.43-3.0 (per day; min-max ranges for North America)		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	16	Lognormal	0	99	B	North American mid range
Frequency (per year)	use.freq	680	lognormal	0	99	B	North American mid range
Duration of Direct Use (min)	duration	15	Lognormal	0	99	B	rounded average
Direct use prevalence (fraction)	use.prev	0.3	point	0	12	B	assumed
Direct use prevalence (fraction)	use.prev	0.9	point	13	99	M	assumed
Direct use prevalence (fraction)	use.prev	0.9	point	13	99	W	assumed
Household prevalence for indirect exposure (fraction)	house.prev	0.9	point	0	99	B	assumed
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

110 . P.IH.100.029 disinfectant-spray

disinfecting liquids (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Disinfectant Fact Sheet	Disinfectants for use indoors	.51 min * .75 g /s = 23 g	365 /year	3 min	
SUPERB (Bennett et al. 2012)	Disinfectant spray				57; 53 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	23	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	3	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.2	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.55	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.55	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.55	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for	volume	24	Point	0	99	B	value for indoor product

spray products (m^3)

111 . P.IH.100.999 disinfectant-NOC

disinfecting liquids (including wipes)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Disinfectant Fact Sheet	Disinfectants for use indoors	.51 min * .75 g /s = 23 g	365 /year	3 min	
SUPERB (Bennett et al. 2012)	Disinfectant spray				57; 53 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	23	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	3	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.2	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.55	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.55	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.55	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

112 . P.IH.110.000 drain

drain openers or digesters

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Drain openers	500 g	4/year	20 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	500	Lognormal	0	99	B	
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.3	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.001	Point	0	99	B	estimated, assumed to have averting behavior
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

113 . P.IH.120.000 dry cleaner

dry cleaning fluids or kits for home use

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	3	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.5	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

114 . P.IH.130.000 dryer sheets

dryer fabric softener sheets

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	

product.direct.inhalationvapor

product.indirect

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Laundry products - Fabric conditioners	68 g			
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Fabric conditioners indirect: liquid regular	50-140 (g/use; min-max ranges for North America)			
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Fabric conditioners indirect: liquid concentrate	11-90 (g/use; min-max ranges for North America)			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.02	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

115 . P.IH.140.029 electronics cleaner-spray

miscellaneous products for cleaning home electronic equipment (including surface cleaners or cleaners for interior parts) (spray or aerosol formulation spec

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Specialized Electronic Cleaners	(ounces per year: mean; SD) 9.48; 55.26	(per year: mean, SD) 13.41; 38.16	(minutes: mean;sd) 9.47; 45.35	13%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	20	Lognormal	0	99	B	approx 10 oz /14 per year
Frequency (per year)	use.freq	14	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.13	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.13	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.13	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

116 . P.IH.140.999 electronics cleaner-NOC

miscellaneous products for cleaning home electronic equipment (including surface cleaners or cleaners for interior parts)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Specialized Electronic Cleaners	(ounces per year: mean; SD) 9.48; 55.26	(per year: mean, SD) 13.41; 38.16	(minutes: mean;sd) 9.47; 45.35	13%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	20	Lognormal	0	99	B	approx 10 oz /14 per year
Frequency (per year)	use.freq	14	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.13	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.13	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.13	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

117 . P.IH.150.000 fabric deodorizer

spray fabric deodorizers

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	20	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

118 . P.IH.160.000 fabric protectant

fabric protectants and wrinkle releasers

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	20	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

119 . P.IH.170.000 fabric softener

fabric softeners (excluding dryer sheets)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Laundry products - Fabric conditioners	68 g			
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Fabric conditioners indirect: liquid regular	50-140 (g/use; min-max ranges for North America)			
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Fabric conditioners indirect: liquid concentrate	11-90 (g/use; min-max ranges for North America)			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	75	Lognormal	0	99	B	~ average of midranges
Frequency (per year)	use.freq	182	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.8	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

120 . P.IH.180.000 fireplace

miscellaneous fireplace and firepit products

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.indirect	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	2	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

121 . P.IH.190.000 floor cleaner

hard floor cleaners (including premoistened wipes and pads)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Floor and furniture products: Floor cleaning liquid	880 g	104/year	30 min	
RIVM Cleaning Product Fact Sheet	Floor products- Wet tissues	245 g	104/year	3 min	
SUPERB (Moran et al 2012) Frequencies are per month	Floor cleaner		5.64; (8.48); 5.34; (7.8); 6.06; (7.72); 2.82; (2.76) Mean (SD) for W;M parents; W;M older adults		69%; 63%; 62%; 44% (W;M parents W; M older adults)
EFH - 17-12	Floor Cleaners			52.00 hours per year	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	560	Lognormal	0	99	B	average of reported
Frequency (per year)	use.freq	60	lognormal	0	99	B	Average of SUPERB values
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.53	point	13	99	M	Average of SUPERB values
Direct use prevalence (fraction)	use.prev	0.66	point	13	99	W	Average of SUPERB values
Household prevalence for indirect exposure (fraction)	house.prev	0.66	point	0	99	B	Average of SUPERB values
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

122 . P.IH.200.000 floor polish

hard floor shining and waxing products

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Floor products- Polishes	550 g	2 /year	90 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	550	Lognormal	0	99	B	
Frequency (per year)	use.freq	2	lognormal	0	99	B	
Duration of Direct Use (min)	duration	90	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.63	point	13	99	M	Same as values for floor cleaner
Direct use prevalence (fraction)	use.prev	0.69	point	13	99	W	Same as values for floor cleaner
Household prevalence for indirect exposure (fraction)	house.prev	0.69	point	0	99	B	Same as values for floor cleaner
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

123 . P.IH.210.029 glass cleaner-spray

glass and window cleaners (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedin	applied to body, clothing, directly to drain, or to surfaces with wash-off
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Glass cleaners	.7 min * .78 g/s = 33 g	365 /year	.7 min	
SUPERB (Moran et al 2012) Frequencies are per month	Glass cleaner		9.06; (20.8); 6.05; (14.23); 3.95; (5.27); 5.62; (8.24) Mean (SD) for W;M parents; W;M older adults		89%; 84%; 87%; 88% (W;M parents W; M older adults)
SUPERB (Bennett et al. 2012)	Glass cleaner				100; 100 pct hshlds parents;older adults
EFH - 17-12	Glass Cleaners			67.00 hours per year	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	33	Lognormal	0	99	B	
Frequency (per year)	use.freq	74	lognormal	0	99	B	Average of SUPERB values
Duration of Direct Use (min)	duration	15	Lognormal	0	99	B	assumed
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.86	point	13	99	M	Average of SUPERB values
Direct use prevalence (fraction)	use.prev	0.88	point	13	99	W	Average of SUPERB values
Household prevalence for indirect exposure (fraction)	house.prev	0.88	point	0	99	B	Average of SUPERB values
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B	assume trigger spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used	f.drain	1	Uniform	0	99	B	

disposed of via the
residential drain
Volume of aerosol cloud for volume 24 Point 0 99 B value for indoor product
spray products (m³)

124 . P.IH.210.999 glass cleaner-NOC

glass and window cleaners

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Glass cleaners	.7 min * .78 g/s = 33 g	365 /year	.7 min	
SUPERB (Moran et al 2012) Frequencies are per month	Glass cleaner		9.06; (20.8); 6.05; (14.23); 3.95; (5.27); 5.62; (8.24) Mean (SD) for W;M parents; W;M older adults		89%; 84%; 87%; 88% (W;M parents W; M older adults)
SUPERB (Bennett et al. 2012)	Glass cleaner				100; 100 pct hshlds parents;older adults
EFH - 17-12	Glass Cleaners			67.00 hours per year	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	33	Lognormal	0	99	B	
Frequency (per year)	use.freq	74	lognormal	0	99	B	average of SUPERB values
Duration of Direct Use (min)	duration	15	Lognormal	0	99	B	assumed
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.86	point	13	99	M	average of SUPERB values
Direct use prevalence (fraction)	use.prev	0.88	point	13	99	W	average of SUPERB values
Household prevalence for indirect exposure (fraction)	house.prev	0.88	point	0	99	B	average of SUPERB values
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

125 . P.IH.220.000 hand cleaner

products marketed as hand cleaners (solvent-based)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	20	Lognormal	0	99	B	All assumed
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.02	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

126 . P.IH.230.029 heavy duty cleaner-spray

heavy duty or concentrated multipurpose cleaners (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedin	applied to body, clothing, directly to drain, or to surfaces with wash-off
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	All-purpose cleaners - Sprays	.41 m * .78 g /s = 19.2 g	365/year	60 min	
EFH 17-37 Weegels and Van Veen 2001	All-Purpose Cleaner	27 (30) g	0.35 (0.70) /day	20 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	20	Lognormal	0	99	B	value for sprays
Frequency (per year)	use.freq	12	lognormal	0	99	B	assumed heavy duty is lower than all purpose
Duration of Direct Use (min)	duration	40	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.3	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B	assume trigger spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

127 . P.IH.230.999 heavy duty cleaner-NOC

heavy duty or concentrated multipurpose cleaners

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	All-purpose cleaners - Liquids	500 g	104/year	20 min	
RIVM Cleaning Product Fact Sheet	All-purpose cleaners - Sprays	.41 m * .78 g /s = 19. 2 g	365/year	60 min	
EFH 17-37 Weegels and Van Veen 2001	All-Purpose Cleaner	27 (30) g	0.35 (0.70) /day	20 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	200	Lognormal	0	99	B	assumed higher than spray
Frequency (per year)	use.freq	12	lognormal	0	99	B	assumed heavy duty is lower than all purpose
Duration of Direct Use (min)	duration	40	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.3	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

128 . P.IH.240.029 houseplant care-spray

houseplant and cut flower foods, fertilizers, or pesticides (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedin	applied to surfaces (no washoff); some f.drain to account for clean-up of materials
product.indirect	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	all assumed
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B	assume trigger spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

129 . P.IH.240.999 houseplant care-NOC

houseplant and cut flower foods, fertilizers, or pesticides

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

130 . P.IH.250.000 lamp oil or lighter fluid

lighters, lighter fluids, and other indoor fuels

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	30	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.017	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

131 . P.IH.260.013 laundry detergent-liquid

laundry detergents and soaps (liquid formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Laundry products - Liquids	500 g	365/year	.75 min	
EFH - 17-12	Laundry Detergents			66.00 hours per year	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Laundry detergents-indirect: liquid	78-230 (g/use; min-max ranges for North America)			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	155	Lognormal	0	99	B	midrange of ACI values
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.1	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	M	Assumed
Direct use prevalence (fraction)	use.prev	1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

132 . P.IH.260.023 laundry detergent-powder

laundry detergents and soaps (powder formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Laundry products - Powders		365 /year	10 min	
EFH - 17-12	Laundry Detergents			66.00 hours per year	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Laundry detergents-indirect: powder	55-290 (g/use; min-max ranges for North America)			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	175	Lognormal	0	99	B	midrange of ACI values
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.1	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	M	Assumed
Direct use prevalence (fraction)	use.prev	1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

133 . P.IH.260.999 laundry detergent-NOC

laundry detergents and soaps

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Laundry products - Powders		365 /year	10 min	
RIVM Cleaning Product Fact Sheet	Laundry products - Liquids	500 g	365/year	.75 min	
EFH - 17-12	Laundry Detergents			66.00 hours per year	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Laundry detergents-indirect: powder	55-290 (g/use; min-max ranges for North America)			
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Laundry detergents-indirect: liquid	78-230 (g/use; min-max ranges for North America)			
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Laundry detergent-indirect: tablet	45-135 (g/use; min-max ranges for North America)			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	175	Lognormal	0	99	B	average of power and liquid values (see other subtypes)
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.1	point	0	12	B	assumed
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	M	
Direct use prevalence (fraction)	use.prev	1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products

Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B	value for indoor product

134 . P.IH.270.000 laundry fragrance

scent products to be added to wash

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	all assumed
Frequency (per year)	use.freq	128	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.02	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

135 . P.IH.280.029 laundry stain remover-spray

stain removers or laundry pre-treatment products (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Laundry pre-treatment products - Sprays	.05 min * 1.5 g/s = 4.5 g	128/ year	10 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	128	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.64	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.8	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B	assume trigger spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

136 . P.IH.280.999 laundry stain remover-NOC

stain removers or laundry pre-treatment products

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Laundry pre-treatment products - Sprays	.05 min * 1.5 g/s = 4.5 g	128 /year	10 min	
RIVM Cleaning Product Fact Sheet	Laundry pre-treatment products - Liquids		128 /year	10 min	
RIVM Cleaning Product Fact Sheet	Laundry pre-treatment products - Pastes		128 /year	10 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Pretreatment (powder paste)		1/day		
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Pretreatment (liquid neat)		1/day		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	128	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.64	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.8	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules

Volume of aerosol cloud for spray products (m³) volume 24 Point 0 99 B value for indoor product

137 . P.IH.290.029 laundry starch-spray

fabric starches (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	all assumed
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

138 . P.IH.290.999 laundry starch-NOC

fabric starches

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

139 . P.IH.300.000 lime remover

products for removing lime or scale from surfaces

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	
Frequency (per year)	use.freq	6	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

140 . P.IH.310.000 metal polish

cleaning products for metal surfaces

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Bennett et al. 2012)	Metal polish				47; 53 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	20	Lognormal	0	99	B	
Frequency (per year)	use.freq	2	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

141 . P.IH.320.029 oven cleaner-spray

oven and grill cleaners (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedin	applied to body, clothing, directly to drain, or to surfaces with wash-off
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Oven cleaners	.5 min *.78g /s = 23.4 g	26 /year	.5 min	
SUPERB (Moran et al 2012) Frequencies are per month	Oven cleaner		0.92; (1.88); 0.75; (1.29); 0.35; (0.72); 0.23; (0.25) Mean (SD) for W;M parents; W;M older adults		35%; 38%; 31%; 30% (W;M parents W; M older adults)
SUPERB (Bennett et al. 2012)	Oven cleaner				60; 59 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	25	Lognormal	0	99	B	
Frequency (per year)	use.freq	7	lognormal	0	99	B	average of SUPERB values
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.33	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.34	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.34	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.001	Point	0	99	B	Assume averting behavior
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used	f.drain	1	Uniform	0	99	B	

disposed of via the
residential drain
Volume of aerosol cloud for volume 24 Point 0 99 B value for indoor product
spray products (m³)

142 . P.IH.320.999 oven cleaner-NOC

oven and grill cleaners

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedin	applied to body, clothing, directly to drain, or to surfaces with wash-off
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Oven cleaners	.5 min *.78g /s = 23.4 g	26 /year	.5 min	
SUPERB (Moran et al 2012) Frequencies are per month	Oven cleaner		0.92; (1.88); 0.75; (1.29); 0.35; (0.72); 0.23; (0.25) Mean (SD) for W;M parents; W;M older adults		35%; 38%; 31%; 30% (W;M parents W; M older adults)
SUPERB (Bennett et al. 2012)	Oven cleaner				60; 59 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	25	Lognormal	0	99	B	
Frequency (per year)	use.freq	7	lognormal	0	99	B	average of SUPERB values
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.33	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.34	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.34	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.001	Point	0	99	B	Assume averting behavior
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used	f.drain	1	Uniform	0	99	B	

disposed of via the
residential drain
Volume of aerosol cloud for spray products (m³) volume 24 Point 0 99 B value for indoor product

143 . P.IH.330.000 shoe polish or protectant

shoe polishes, cleaners, and protectants

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Spray Shoe Polish	(ounces per year: mean; SD) 9.9; 17.9	(per year: mean, SD) 10.28; 20.1	(minutes: mean;sd) 7.49; 9.6	12%
RIVM Cleaning Product Fact Sheet	Shoe polish products - Spray	1.2 min * .5 g /s = 36 g	8/year	5 min	
RIVM Cleaning Product Fact Sheet	Shoe polish products - Cream	.1 g	26/year	20 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	15	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	~average
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.12	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.12	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.12	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

144 . P.IH.340.029 surface cleaner-spray

hard surface and kitchen surface cleaners (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedin	applied to body, clothing, directly to drain, or to surfaces with wash-off
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	All-purpose cleaners - Sprays	.41 m * .78 g /s = 19.2 g	365/year	60 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	APC spray (neat/non-dilutable)		0.14- 1/ day (per day; min-max ranges for North America)		
EFH 17-37 Weegels and Van Veen 2001	All-Purpose Cleaner	27 (30) g	0.35 (0.70) /day	20 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	25	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	40	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.1	point	0	12	B	
Direct use prevalence (fraction)	use.prev	1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B	assume trigger spray, uniform distribution based on RIVM cleaning

Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	product fact sheet Table 9 see General Rules
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B	value for indoor product

145 . P.IH.340.999 surface cleaner-NOC

hard surface and kitchen surface cleaners

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	All-purpose cleaners - Liquids	500 g	104/year	20 min	
RIVM Cleaning Product Fact Sheet	All-purpose cleaners - Sprays	.41 m * .78 g /s = 19.2 g	365/year	60 min	
RIVM Cleaning Product Fact Sheet	All-purpose cleaners - Wet tissues	3.42 g	365/year	60 min	
RIVM Cleaning Product Fact Sheet	Metal cleaners	10 g	6 /year	10 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Hard surface cleaner-powder	20-51 (per day; min-max ranges for North America)	0.14- 1/ day (per day; min-max ranges for North America)		
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	APC spray (neat/non-dilutable)		0.14- 1/ day (per day; min-max ranges for North America)		
EFH 17-37 Weegels and Van Veen 2001	All-Purpose Cleaner	27 (30) g	0.35 (0.70) /day	20 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	25	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	40	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.2	point	0	12	B	
Direct use prevalence (fraction)	use.prev	1	point	13	99	M	

Direct use prevalence (fraction)	use.prev	1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

146 . P.IH.350.000 upholstery cleaner

upholstery fabric cleaners

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	20	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

147 . P.IH.360.029 wood polish-spray

wood or furniture dusting or polishing products (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Wood Floor and Paneling Cleaners	(ounces per year: mean; SD) 28.41; 57.23	(per year: mean, SD) 8.48; 20.89	(minutes: mean;sd) 74.04; 128.43	35%
RIVM Cleaning Product Fact Sheet	Furniture and leather products - Furniture polish	550 g (cleaning cupboards)	1 /year	240 min	
SUPERB (Moran et al 2012) Frequencies are per month	Polish		2.25; (3.13); 2.02; (5.05); 2.66; (3.09); 2.44; (4.19) Mean (SD) for W;M parents; W;M older adults		57%; 47%; 68%; 58% (W;M parents W; M older adults)
EFH - 17-12	Furniture Polish			32.00 hours per year	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	100	Lognormal	0	99	B	reduced to account for furniture polishing versus once a year use
Frequency (per year)	use.freq	5	lognormal	0	99	B	
Duration of Direct Use (min)	duration	60	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.53	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.63	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.63	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products

Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B	value for indoor product

148 . P.IH.360.999 wood polish-NOC

wood or furniture dusting or polishing products

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-4 -17-6 (Westat); Prevalence from original Westat Report	Wood Floor and Paneling Cleaners	(ounces per year: mean; SD) 28.41; 57.23	(per year: mean, SD) 8.48; 20.89	(minutes: mean;sd) 74.04; 128.43	35%
RIVM Cleaning Product Fact Sheet	Furniture and leather products - Furniture polish	550 g (cleaning cupboards)	1 /year	240 min	
SUPERB (Moran et al 2012) Frequencies are per month	Polish		2.25; (3.13); 2.02; (5.05); 2.66; (3.09); 2.44; (4.19) Mean (SD) for W;M parents; W;M older adults		57%; 47%; 68%; 58% (W;M parents W; M older adults)
EFH - 17-12	Furniture Polish			32.00 hours per year	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	100	Lognormal	0	99	B	reduced to account for furniture polishing versus once a year use
Frequency (per year)	use.freq	5	lognormal	0	99	B	
Duration of Direct Use (min)	duration	60	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.53	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.63	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.63	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of	f.drain	0.15	Uniform	0	99	B	see General Rules

via the residential drain
Volume of aerosol cloud for spray volume 24 Point 0 99 B value for indoor product
products (m³)

149 . P.LY.010.005 cleaner-exterior

exterior surface (e.g. deck, house, driveway) cleaners

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cleaning Product Fact Sheet	Pressure washers		12/year	30 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1000	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	5e-04	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

150 . P.LY.020.000 garden care-other

miscellaneous garden care products not otherwise characterized (e.g. rooting powders)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	100	Lognormal	0	99	B	
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.005	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

151 . P.LY.030.000 garden fertilizer

fertilizers for vegetable or flower gardens, including in combination with pest/weed controllers

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10000	Lognormal	0	99	B	
Frequency (per year)	use.freq	2	lognormal	0	99	B	
Duration of Direct Use (min)	duration	120	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	5e-05	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

152 . P.LY.040.000 grill or camping fuel

grill, lantern and camping stove fuels, including briquets

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	100	Lognormal	0	99	B	
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.005	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.2	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

153 . P.LY.050.029 herbicide-spray

herbicides, weed killers, and brush killers (spray or aerosol formulation specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-6	Herbicide				2%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	2800	Lognormal	0	99	B	
Frequency (per year)	use.freq	2	lognormal	0	99	B	
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.02	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B	assume trigger spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 value for outdoor product
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	

154 . P.LY.050.999 herbicide-NOC

herbicides, weed killers, and brush killers

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-6	Herbicide				2%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	2800	Lognormal	0	99	B	~100 oz
Frequency (per year)	use.freq	2	lognormal	0	99	B	
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.02	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.00018	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

155 . P.LY.060.000 lawn fertilizer

fertilizers for lawns, including in combination with pest/weed controllers

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5000	Lognormal	0	99	B	
Frequency (per year)	use.freq	2	lognormal	0	99	B	
Duration of Direct Use (min)	duration	60	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1e-04	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

156 . P.LY.070.000 lawnmower fluids

oils and other fluids for lawnmowers or other small yard care equipment

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	100	Lognormal	0	99	B	
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	99	M	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.005	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

157 . P.LY.080.000 mulch

mulches, including those with weed controllers

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10000	Lognormal	0	99	B	
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	120	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	5e-05	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

158 . P.LY.090.002 pool chemicals-algaecide

algaecidal products for pools, hot tubs, and spas

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	

product.direct.inhalationvapor

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Disinfectant Fact Sheet	Swimming pool disinfectants -Control of algae - granules or tablets	.5 g to skin (no total mass given)	122/year	5 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	500	Lognormal	0	99	B	all assumed
Frequency (per year)	use.freq	16	lognormal	0	99	B	1/week for summer
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.001	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

159 . P.LY.090.003 pool chemicals-chlorinating

chlorinating products for pools, hot tubs, and spas

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	

product.direct.inhalationvapor

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Disinfectant Fact Sheet	Swimming pool disinfectants -Control of bacteria, algae and other micro-organisms -liquiid	.5 g to skin - no total given	28/year		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	500	Lognormal	0	99	B	all assumed
Frequency (per year)	use.freq	16	lognormal	0	99	B	1/week for summer
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.001	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

160 . P.LY.090.022 pool chemicals-ph control

ph control products for pools, hot tubs, and spas

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	500	Lognormal	0	99	B	all assumed
Frequency (per year)	use.freq	16	lognormal	0	99	B	1/week for summer
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.001	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

161 . P.LY.090.025 pool chemicals-shock

shock products for pools, hot tubs, and spas

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	500	Lognormal	0	99	B	all assumed
Frequency (per year)	use.freq	16	lognormal	0	99	B	1/week for summer
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.001	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

162 . P.LY.090.999 pool chemicals-NOC

products not otherwise characterized for pools, hot tubs, and spas

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	

product.direct.inhalationvapor

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Disinfectant Fact Sheet	Swimming pool disinfectants -Control of bacteria, algae and other micro-organisms -liquiid	.5 g to skin - no total given	28/year		
RIVM Disinfectant Fact Sheet	Swimming pool disinfectants -Control of algae - granules ot tablets	.5 g to skin (no total mass given)	122/year	5 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	500	Lognormal	0	99	B	all assumed
Frequency (per year)	use.freq	16	lognormal	0	99	B	1/week for summer
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.001	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

163 . P.LY.100.000 potting soil

potting soil and vermiculite

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	250	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	3 x month in growing season
Duration of Direct Use (min)	duration	60	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.002	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

164 . P.LY.110.000 surface deicer

products for deicing surfaces

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1000	Lognormal	0	99	B	
Frequency (per year)	use.freq	2	lognormal	0	99	B	
Duration of Direct Use (min)	duration	60	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	5e-04	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

165 . P.LY.120.000 trees

miscellaneous tree care products including sealers

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	100	Lognormal	0	99	B	
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.005	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

166 . P.PC.010.029 acne spot treatment-spray

creams and wipes for spot-treating acne (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	132	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

167 . P.PC.010.999 acne spot treatment-NOC

creams and wipes for spot-treating acne

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	132	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

168 . P.PC.020.000 aftershave

lotions, balms, liquids, and gels for post-shave applications (usually fragranced)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cosmetics Fact Sheet	Men's cosmetics - Aftershave	1.2 g	365 /year	1440 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-3) SUPERB (Wu et al 2012) Frequencies are per month	Aftershave	0.65-1 (g/use; min-max ranges for North America)	0.66-1 (per day; min-max ranges for North America)	-(-); 11(10.4); -(-); 20(14) WM Par, WM Older	-; 38%; -; 48% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Aftershave (ADULT)		-(-); -(-); -(-); 21.8(24) F M <=5 F M >5	-; -; -; 42% F;M (5 and under) F;M 5+	
SUPERB (Bennett et al. 2012)	Aftershave (CHILD)				
	Aftershave/mens fragranc	e			6; 17 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	~consensus
Frequency (per year)	use.freq	260	lognormal	0	12	B	SUPERB for boys over 5
Frequency (per year)	use.freq	240	lognormal	13	99	B	SUPERB average
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	F	
Direct use prevalence (fraction)	use.prev	0.25	point	0	12	M	SUPERB adjusted
Direct use prevalence (fraction)	use.prev	0.43	point	13	99	M	SUPERB average
Direct use prevalence (fraction)	use.prev	0	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.43	point	0	99	B	SUPERB average
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

169 . P.PC.030.000 baby lotion

baby cream or lotion (excluding diaper creams)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Baby Lotion - baby usec	1.4 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.38; 1; X		
EFH 17-3	Baby Lotion - adult use	1 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.22; 0.19; 0.24d		
EFH 17-3	Baby Cream - baby usec		(per day: CTFA; cosmetics company; Simmons Market Research) 0.43; 1.3; X		
EFH 17-3	Baby Cream - adult use		(per day: CTFA; cosmetics company; Simmons Market Research) 0.07; 0.1; X		
RIVM Cosmetics Fact Sheet	Baby care Baby salve	.27 g	720 / year	720 min	
RIVM Cosmetics Fact Sheet	Baby care baby oil	1.3 g	720 / year	720 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1) SUPERB (Bennett et al. 2012)	Baby Lotions and creams Baby lotion	1.4-2 (g/use; min-max ranges for North America)	0.38-2 (per day; min-max ranges for North America)		40; 0 pct hshlds parents;older adults 36%
EFH 17-54 Sathyaranayana et al. (2008)	Baby Lotion				

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1.4	Lognormal	0	12	B	EFH baby use
Mass per Use (g)	mass	1	Lognormal	13	99	B	EFH adult use
Frequency (per year)	use.freq	252	lognormal	0	12	B	EFH baby use average
Frequency (per year)	use.freq	91	lognormal	13	99	B	EFH adult use
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	

Direct use prevalence (fraction)	use.prev	0.4	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.8	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

170 . P.PC.040.000 baby oil

skin oils specifically marketed for babies

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Baby Oil - baby usec	1.3 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.14; 1.2; X		
EFH 17-3	Baby Oil - adult use	5 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.06; 0.13; X		
RIVM Cosmetics Fact Sheet	Baby care baby oil	1.3 g	720 / year	720 min	
SUPERB (Wu et al 2012) Frequencies are per month	Baby oil (CHILD)		11.1(27.00); 9.00(14); 6.5(13); 16.3(13) F M <=5 F M >5		21%; 17%; 16%; 14% F; M (5 and under) F; M 5+

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1.3	Lognormal	0	12	B	
Mass per Use (g)	mass	5	Lognormal	13	99	B	
Frequency (per year)	use.freq	120	lognormal	0	12	B	~rounded average for children
Frequency (per year)	use.freq	35	lognormal	13	99	B	average EFH
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.15	point	0	12	M	average SUPERB
Direct use prevalence (fraction)	use.prev	0.19	point	0	12	W	average SUPERB
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.19	point	0	99	B	average SUPERB
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.8	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

171 . P.PC.050.000 baby powder

powders specifically marketed for babies

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Baby Powder - baby usec	0.8 g	(per day: CTFA; cosmetics company; Simmons Market Research) 5.36; 1.5; 0.35d		
EFH 17-3	Baby Powder - adult use	0.8 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.13; 0.22; X		
RIVM Cosmetics Fact Sheet	Baby care baby powder	0.8 g	720 / year	720 min	
EFH 17-54 Sathyaranayana et al. (2008)	Baby Powder				14%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.8	Lognormal	0	99	B	
Frequency (per year)	use.freq	877	lognormal	0	12	B	average efh
Frequency (per year)	use.freq	64	lognormal	13	99	B	average efh
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.14	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.14	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.3	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

172 . P.PC.060.000 baby shampoo

shampoos specifically marketed for babies

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Baby Shampoo - baby usec	0.5 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.14; X; 0.11f		
EFH 17-3	Baby Shampoo - adult use	5 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.02; X; X		
SUPERB (Bennett et al. 2012)	Baby shampoo				70; 6 pct hshlds parents;older adults
EFH 17-54 Sathyaranayana et al. (2008)	Baby Shampoo				54%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.5	Lognormal	0	12	B	
Mass per Use (g)	mass	5	Lognormal	13	99	B	
Frequency (per year)	use.freq	52	lognormal	0	12	B	
Frequency (per year)	use.freq	7	lognormal	13	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.7	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.06	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.06	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.7	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules

Volume of aerosol cloud for spray products (m³) volume 24 Point 0 99 B value for indoor product

173 . P.PC.070.000 baby wash

body washes and cleaners specifically marketed for babies

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Baby/Bath liquid	0.873 (g/use)	1 per day		
SUPERB (Bennett et al. 2012)	Baby bath				73; 0 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.73	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.73	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.3	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

174 . P.PC.080.000 baby wipes

diaper and other baby wipes

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	120	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.4	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.05	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

175 . P.PC.090.000 bar soap

bar and other solid soaps

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Bath Soaps	2.6 g	(per day: CTFA; cosmetics company; Simmons Market Research) 1.53; 0.95; X		
RIVM Cosmetics Fact Sheet	Washing hands - soap	1 g	1825 /year	1 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	F&H Bar Soap -Hand	0.36 (g/use)	1.0-6.0 (per day; min-max ranges for North America)		
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	F&H Bar Soap -Body	2.6-8.6 (g/use; min-max ranges for North America)	0.95-3 (per day; min-max ranges for North America)		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	3	Lognormal	0	99	B	
Frequency (per year)	use.freq	301	lognormal	0	99	B	Average of .82/day
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.9	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.9	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.9	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.9	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.05	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray	volume	24	Point	0	99	B	value for indoor product

products (m^3)

176 . P.PC.100.000 bath oil

bath oils or oil-filled beads

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Bath Oils	14.7 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.08; 0.19; 0.22g		
EFH 17-3	Bath Capsules		(per day: CTFA; cosmetics company; Simmons Market Research) 0.018; 0.019; X		
RIVM Cosmetics Fact Sheet	Bath oil	25 g	104 /year	15 min	
RIVM Cosmetics Fact Sheet	Essential oils - Bath	9 g	52 /year	20 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	30	Lognormal	0	99	B	~ 1 oz
Frequency (per year)	use.freq	50	lognormal	0	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.3	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.3	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

177 . P.PC.110.000 bath paints or crayons

bath paints or bath crayons

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	30	Lognormal	0	99	B	~ 1 oz
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.1	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

178 . P.PC.120.000 bath salts

bath salts, soaks, and fizzes

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Bath Tablets		(per day: CTFA; cosmetics company; Simmons Market Research) 0.003; 0.008; X		
EFH 17-3	Bath Salts	18.9 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.006; 0.013; X		
RIVM Cosmetics Fact Sheet	Bath salts	9 g	104 /year	15 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	19	Lognormal	0	99	B	North American value
Frequency (per year)	use.freq	2	lognormal	0	99	B	North American value
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.3	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.3	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

179 . P.PC.130.000 bite relief

soothing treatments for insect bites

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10	Lognormal	0	99	B	
Frequency (per year)	use.freq	24	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

180 . P.PC.140.000 blush or bronzer

cheek blushes, bronzers, and rouges

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use			Prevalence
EFH 17-3	Blusher and Rouge	0.011 g	(per day: CTFA; cosmetics company; Simmons Market Research) 1.18; 1.24; 0.55				

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.05	Lognormal	0	99	B	
Frequency (per year)	use.freq	430	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.7	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.7	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

181 . P.PC.150.000 body adhesive

adhesives for attaching decorations or clothing to skin

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.02	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

182 . P.PC.160.000 body care set

multicomponent body care or bath set for which individual products are not designated

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.5	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.5	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

183 . P.PC.170.029 body oil-spray

body oils (not including baby or bath oils, spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Baby Oil - adult use	5 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.06; 0.13; X		
RIVM Cosmetics Fact Sheet	Essential oils - Massage	8 g	24 /year	30 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	8	Lognormal	0	99	B	
Frequency (per year)	use.freq	24	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.3	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.1	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

184 . P.PC.170.999 body oil-NOC

body oils (not including baby or bath oils)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Baby Oil - adult use	5 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.06; 0.13; X		
RIVM Cosmetics Fact Sheet	Essential oils - Massage	8 g	24 /year	30 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	8	Lognormal	0	99	B	
Frequency (per year)	use.freq	24	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.3	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

185 . P.PC.180.000 body powder

talcum and dusting powders for the body

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Baby Powder - adult use	0.8 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.13; 0.22; X		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	64	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	~average
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.5	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.5	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.5	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

186 . P.PC.190.000 body scrub

body cleaners containing abrasives or exfoliants

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cosmetics Fact Sheet	Showering - soap	7.0 g	329 /year	4 min	
RIVM Cosmetics Fact Sheet	Showering - gel	8.7 g	329 /year	4 min	
RIVM Cosmetics Fact Sheet	Skin care - Body pack	416 g	4/ year	20 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Liquid Soap- Body	11.8 (g/use)	0.088-0.57 (per day; min-max ranges for North America)		
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Body Wash	8.0-12.0 (g/use; min-max ranges for North America)	1 per day		
SUPERB (Wu et al 2012) Frequencies are per month	Bath gel (ADULT)		15(14.3); 28(14.6); 17(12.90); 25(14.7) WM Par, WM Older		41%; 15%; 34%; 10% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Bath gel (CHILD)		13.3(13.00); 13.00(11); 7.6(11); 12.7(13) F M <=5 F M >5		74%; 65%; 45%; 37% F;M (5 and under) F;M 5+
SUPERB (Bennett et al. 2012)	Body wash				90; 71 pct hshlds parents;older adults
EFH 17-42 Loretz et al. 2006	Body Wash	11.3 (6.9) g			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	12	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	consensus
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.6	point	0	12	B	SUPERB
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	M	SUPERB
Direct use prevalence (fraction)	use.prev	0.13	point	13	99	W	SUPERB
Household prevalence for indirect exposure (fraction)	house.prev	0.6	point	0	99	B	SUPERB

Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.05	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B	value for indoor product

187 . P.PC.200.000 body wash

body cleaners, washes, shower gels

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cosmetics Fact Sheet	Showering - soap	7.0 g	329 /year	4 min	
RIVM Cosmetics Fact Sheet	Showering - gel	8.7 g	329 /year	4 min	
RIVM Cosmetics Fact Sheet	Skin care - Body pack	416 g	4/ year	20 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Liquid Soap- Body	11.8 (g/use)	0.088-0.57 (per day; min-max ranges for North America)		
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Body Wash	8.0-12.0 (g/use; min-max ranges for North America)	1 per day		
SUPERB (Wu et al 2012) Frequencies are per month	Bath gel (ADULT)		15(14.3); 28(14.6); 17(12.90); 25(14.7) WM Par, WM Older		41%; 15%; 34%; 10% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Bath gel (CHILD)		13.3(13.00); 13.00(11); 7.6(11); 12.7(13) F M <=5 F M >5		74%; 65%; 45%; 37% F;M (5 and under) F;M 5+
SUPERB (Bennett et al. 2012)	Body wash				90; 71 pct hshlds parents;older adults
EFH 17-42 Loretz et al. 2006	Body Wash	11.3 (6.9) g			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	12	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.6	point	0	12	B	SUPERB
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	M	SUPERB
Direct use prevalence (fraction)	use.prev	0.13	point	13	99	W	SUPERB
Household prevalence for indirect	house.prev	0.6	point	0	99	B	SUPERB

exposure (fraction)							
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.05	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

188 . P.PC.210.000 body wipes

body wipes and towelettes (excluding diaper or baby wipes)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.02	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.5	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

189 . P.PC.220.000 bubble bath

bubble baths

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Bubble Baths	11.8 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.088; 0.13; X		
EFH 17-3	Bath Crystals		(per day: CTFA; cosmetics company; Simmons Market Research) 0.006; X; X		
RIVM Cosmetics Fact Sheet	Bath foam	17 g	104 /year	15 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1) SUPERB (Bennett et al. 2012)	Bath Foam/Bubble Bath	14-17 (g/use; min-max ranges for North America)	0.14-0.29 (per day; min-max ranges for North America)		43; 6 pct hshlds parents;older adults
	Bubble bath				

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	~average
Frequency (per year)	use.freq	53	lognormal	0	99	B	average of EFH studies and ACI midrange
Duration of Direct Use (min)	duration	15	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.43	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.06	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	assumed
Household prevalence for indirect exposure (fraction)	house.prev	0.43	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.05	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules

Volume of aerosol cloud for spray products (m³) volume 24 Point 0 99 B value for indoor product

190 . P.PC.230.000 clipper lubricant or cleaner

cleaning and lubricating products for hair clippers

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	all assumed
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.03	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.03	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

191 . P.PC.240.029 contact care-spray

contact lens cleaners and solutions (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Wu et al 2012) Frequencies are per month	Contact lens solution (ADULT)		31.00(21.70); 18(18.4); 14(13.90); 29(27.5) WM Par, WM Older		20%; 16%; 6%; 6% (W;M parents W; M older adults)

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	3	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.1	point	0	12	B	assumed
Direct use prevalence (fraction)	use.prev	0.16	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.1	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

192 . P.PC.240.999 contact care-NOC

contact lens cleaners and solutions

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Wu et al 2012) Frequencies are per month	Contact lens solution (ADULT)		31.00(21.70); 18(18.4); 14(13.90); 29(27.5) WM Par, WM Older		20%; 16%; 6%; 6% (W;M parents W; M older adults)

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	3	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.1	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.16	point	13	99	M	assumed
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

193 . P.PC.250.000 cosmetic tool cleaner

products for cleaning brushes and other cosmetic implements

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	all assumed
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

194 . P.PC.260.000 denture adhesive

denture adhesives

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.ingestion	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	20	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	60	M	
Direct use prevalence (fraction)	use.prev	0	point	13	60	W	
Direct use prevalence (fraction)	use.prev	0.5	point	61	99	M	
Direct use prevalence (fraction)	use.prev	0.5	point	61	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.5	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of product mass ingested	f.ingested	0.01	Lognormal	0	99	B	Assumed
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

195 . P.PC.270.000 denture cleaner

denture cleansers

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.ingestion	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	20	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	60	M	
Direct use prevalence (fraction)	use.prev	0	point	13	60	W	
Direct use prevalence (fraction)	use.prev	0.5	point	61	99	M	
Direct use prevalence (fraction)	use.prev	0.5	point	61	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.5	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of product mass ingested	f.ingested	0.01	Lognormal	0	99	B	Assumed
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

196 . P.PC.280.007 deodorant-gel

deodorants and antiperspirants (gel formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Underarm Deodorants	0.5 g	(per day: CTFA; cosmetics company; Simmons Market Research) 1.01; 0.8; 1.1		
RIVM Cosmetics Fact Sheet	Deodorant Stick / roller	.2 g	365 /year	1440 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Antiperspirants-roll-ons	0.52-1.22 (g/use; min-max ranges for North America)	0.8-2.0 (per day; min-max ranges for North America)		
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Antiperspirant solid/bar	0.5-1.2 (g/use; min-max ranges for North America)	0.8-2.0 (per day; min-max ranges for North America)		
SUPERB (Wu et al 2012) Frequencies are per month	Deodorant (ADULT)		31(10.9); 30(10.8); 30(7.00); 27(9.6) WM Par, WM Older -(-); -(-); 27.90(17); 32.5(17) F M <=5 F M >5		92%; 81%; 93%; 92% (W; M parents W; M older adults) -; -; 42%; - F; M (5 and under) F; M 5+
SUPERB (Wu et al 2012) Frequencies are per month	Deodorant (CHILD)				
EFH 17-42 Loretz et al. 2006	Solid Antiperspirant	0.61 (0.56) g			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	consensus
Frequency (per year)	use.freq	365	lognormal	0	99	B	consensus
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	5	B	
Direct use prevalence (fraction)	use.prev	0.42	point	6	12	B	
Direct use prevalence (fraction)	use.prev	0.95	point	13	99	M	

Direct use prevalence (fraction)	use.prev	0.95	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.95	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

197 . P.PC.280.028 deodorant-solid

deodorants and antiperspirants (solid formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Underarm Deodorants	0.5 g	(per day: CTFA; cosmetics company; Simmons Market Research) 1.01; 0.8; 1.1		
RIVM Cosmetics Fact Sheet	Deodorant Stick / roller	.2 g	365 /year	1440 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Antiperspirants-roll-ons	0.52-1.22 (g/use; min-max ranges for North America)	0.8-2.0 (per day; min-max ranges for North America)		
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Antiperspirant solid/bar	0.5-1.2 (g/use; min-max ranges for North America)	0.8-2.0 (per day; min-max ranges for North America)		
SUPERB (Wu et al 2012) Frequencies are per month	Deodorant (ADULT)		31(10.9); 30(10.8); 30(7.00); 27(9.6) WM Par, WM Older -(-); -(-); 27.90(17); 32.5(17) F M <=5 F M >5		92%; 81%; 93%; 92% (W; M parents W; M older adults) -; -; 42%; - F; M (5 and under) F; M 5+
SUPERB (Wu et al 2012) Frequencies are per month	Deodorant (CHILD)				
EFH 17-42 Loretz et al. 2006	Solid Antiperspirant	0.61 (0.56) g			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	consensus
Frequency (per year)	use.freq	365	lognormal	0	99	B	consensus
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	5	B	
Direct use prevalence (fraction)	use.prev	0.42	point	6	12	B	
Direct use prevalence (fraction)	use.prev	0.95	point	13	99	M	

Direct use prevalence (fraction)	use.prev	0.95	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.95	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

198 . P.PC.280.029 deodorant-spray

deodorants and antiperspirants (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Underarm Deodorants	0.5 g	(per day: CTFA; cosmetics company; Simmons Market Research) 1.01; 0.8; 1.1		
RIVM Cosmetics Fact Sheet	Deodorant Spray	2.6 g	730 /year	720 min (dermal)	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Antiperspirant aerosols	0.52-2.2 (g/use; min-max ranges for North America)	0.8-2.0 (per day; min-max ranges for North America)		
SUPERB (Wu et al 2012) Frequencies are per month	Deodorant (ADULT)		31(10.9); 30(10.8); 30(7.00); 27(9.6) WM Par, WM Older		92%; 81%; 93%; 92% (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Deodorant (CHILD)		-(-); -(-); 27.90(17); 32.5(17) F M <=5 F M >5		-; -; 42%; - F; M (5 and under) F; M 5+

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	3	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	5	B	
Direct use prevalence (fraction)	use.prev	0.42	point	6	12	B	
Direct use prevalence (fraction)	use.prev	0.95	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.95	point	13	99	W	

Household prevalence for indirect exposure (fraction)	house.prev	0.95	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

199 . P.PC.280.999 deodorant-NOC

deodorants and antiperspirants not otherwise characterized

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Underarm Deodorants	0.5 g	(per day: CTFA; cosmetics company; Simmons Market Research) 1.01; 0.8; 1.1		
RIVM Cosmetics Fact Sheet	Deodorant Stick / roller	.2 g	365 /year	1440 min	
RIVM Cosmetics Fact Sheet	Deodorant Spray	2.6 g	730 /year	720 min (dermal)	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Antiperspirants-roll-ons	0.52-1.22 (g/use; min-max ranges for North America)	0.8-2.0 (per day; min-max ranges for North America)		
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Antiperspirant aerosols	0.52-2.2 (g/use; min-max ranges for North America)	0.8-2.0 (per day; min-max ranges for North America)		
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Antiperspirant solid/bar	0.5-1.2 (g/use; min-max ranges for North America)	0.8-2.0 (per day; min-max ranges for North America)		
SUPERB (Wu et al 2012) Frequencies are per month	Deodorant (ADULT)		31(10.9); 30(10.8); 30(7.00); 27(9.6) WM Par, WM Older -(-); -(-); 27.90(17); 32.5(17) F M <=5 F M >5		92%; 81%; 93%; 92% (W; M parents W; M older adults) -; -; 42%; - F; M (5 and under) F; M 5+
SUPERB (Wu et al 2012) Frequencies are per month	Deodorant (CHILD)				
EFH 17-42 Loretz et al. 2006	Solid Antiperspirant	0.61 (0.56) g			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	

Frequency (per year)	use.freq	365	lognormal	0	99	B
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B
Direct use prevalence (fraction)	use.prev	0	point	0	5	B
Direct use prevalence (fraction)	use.prev	0.42	point	6	12	B
Direct use prevalence (fraction)	use.prev	0.95	point	13	99	M
Direct use prevalence (fraction)	use.prev	0.95	point	13	99	W
Household prevalence for indirect exposure (fraction)	house.prev	0.95	point	0	99	B
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B
						See general rules for products applied to skin
						see General Rules
						value for indoor product

200 . P.PC.290.029 depilatory-spray

chemical products for removal of body or facial hair (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Depilatories		(per day: CTFA; cosmetics company; Simmons Market Research) 0.0061; 0.051; 0.009		
RIVM Cosmetics Fact Sheet	Depilatories	5.5 g	17 /year	15 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	17	lognormal	0	99	B	
Duration of Direct Use (min)	duration	15	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.0005	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

201 . P.PC.290.999 depilatory-NOC

chemical products for removal of body or facial hair

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Depilatories		(per day: CTFA; cosmetics company; Simmons Market Research) 0.0061; 0.051; 0.009		
RIVM Cosmetics Fact Sheet	Depilatories	5.5 g	17 /year	15 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	17	lognormal	0	99	B	
Duration of Direct Use (min)	duration	15	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.0005	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

202 . P.PC.300.000 diaper cream

diaper creams and ointments

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cosmetics Fact Sheet	Baby care Baby salve	.27 g	720 / year	720 min	
EFH 17-54 Sathyaranayana et al. (2008)	Diaper Cream				33%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	720	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.25	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.25	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

203 . P.PC.310.029 dry shampoo-spray

dry shampoos for removing hair oils (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

204 . P.PC.310.999 dry shampoo-NOC

dry shampoos for removing hair oils

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

205 . P.PC.320.000 ethnic hair care

products for ethnic hair care, including wrap set lotions and pressing lotions (excluding relaxers)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	1	point	0	12	B	
Direct use prevalence (fraction)	use.prev	1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

206 . P.PC.330.000 eye cream

creams and moisturizers for specific treatment of eye area

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use			Prevalence
EFH 17-3	Eye Lotion		(per day: CTFA; cosmetics company; Simmons Market Research) 0.094; 0.34; X				

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	79	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

207 . P.PC.340.000 eye drops

products for lubricating eyes or treating redness

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	1	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

208 . P.PC.350.029 eye lid spray

spray product for moisturizing the eyelid

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B	assume trigger spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

209 . P.PC.360.013 eye liner-liquid

eye liners or brow coloring products (liquid or gel formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Eyeliner	0.42 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.68; 0.27; 1.43		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	290	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	~average
Direct use prevalence (fraction)	use.prev	0.02	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.8	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

210 . P.PC.360.999 eye liner-NOC

eye liners or brow coloring products

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Eyeliner	0.42 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.68; 0.27; 1.43		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	290	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	~average
Direct use prevalence (fraction)	use.prev	0.02	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.8	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

211 . P.PC.370.000 eye makeup-other

miscellaneous cosmetic eye products including lash adhesives and tints

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use			Prevalence
EFH 17-3	Under Eye Cover		(per day: CTFA; cosmetics company; Simmons Market Research) 0.79; X; X				

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	290	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.8	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

212 . P.PC.380.000 eye products

NA

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	NA
product.direct.inhalationvapor	NA
product.downthethedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	same as eye-makeup other
Frequency (per year)	use.freq	290	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.8	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	NA
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

213 . P.PC.390.000 eye shadow

products for coloring eye lids

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Eye Shadow		(per day: CTFA; cosmetics company; Simmons Market Research) 0.69; 0.78; 0.4		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.1	Lognormal	0	99	B	
Frequency (per year)	use.freq	230	lognormal	0	99	B	
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.02	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.79	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.79	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

214 . P.PC.400.000 face cleansing wipes

textile wipes or pads treated with cleansing solution

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.05	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

215 . P.PC.410.029 face cream or moisturizer-spray

moisturizers, lotions, and creams for primarily treating the face (excluding eye-specific products) (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cosmetics Fact Sheet	Skin care Cream - Face cream	.8 g	730 / year	720 min	
RIVM Cosmetics Fact Sheet	Skin care - Skin whitening products	5 g	91 /year	1440 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Other-Makeup remover	2.5 (g/use)	1.0-2.0 (per day; min-max ranges for North America)		
SUPERB (Wu et al 2012) Frequencies are per month	Facial moisturizer (ADULT)		33(15.9); 17(18.1); 34(14.30); 15(11.9) WM Par, WM Older		81%; 29%; 74%; 19% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Anti-aging or overnight cream (ADULT)		27(16.3); 18(24.5); 29(12.00); 22(12) WM Par, WM Older		40%; 6%; 41%; 4% (W;M parents W; M older adults)
SUPERB (Bennett et al. 2012)	Facial moisturizer				93; 59 pct hshlds parents;older adults
EFH 17-38 Loretz et al. 2005	Face Cream			1.77 (1.16)	
EFH 17-39 Loretz et al. 2005	Face Cream	1.22 (1.76)			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	92	lognormal	0	99	M	
Frequency (per year)	use.freq	400	lognormal	0	99	W	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.1	point	0	12	B	

Direct use prevalence (fraction)	use.prev	0.29	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.81	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.81	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B	assume trigger spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B	value for indoor product

216 . P.PC.410.999 face cream or moisturizer-NOC

moisturizers, lotions, and creams for primarily treating the face (excluding eye-specific products)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cosmetics Fact Sheet	Skin care Cream - Face cream	.8 g	730 / year	720 min	
RIVM Cosmetics Fact Sheet	Skin care - Skin whitening products	5 g	91 /year	1440 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Other-Makeup remover	2.5 (g/use)	1.0-2.0 (per day; min-max ranges for North America)		
SUPERB (Wu et al 2012) Frequencies are per month	Facial moisturizer (ADULT)		33(15.9); 17(18.1); 34(14.30); 15(11.9) WM Par, WM Older		81%; 29%; 74%; 19% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Anti-aging or overnight cream (ADULT)		27(16.3); 18(24.5); 29(12.00); 22(12) WM Par, WM Older		40%; 6%; 41%; 4% (W;M parents W; M older adults)
SUPERB (Bennett et al. 2012)	Facial moisturizer				93; 59 pct hshlds parents;older adults
EFH 17-38 Loretz et al. 2005	Face Cream			1.77 (1.16)	
EFH 17-39 Loretz et al. 2005	Face Cream	1.22 (1.76)			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	92	lognormal	0	99	B	
Frequency (per year)	use.freq	400	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.1	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.29	point	13	99	M	

Direct use prevalence (fraction)	use.prev	0.81	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.81	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

217 . P.PC.420.000 face mask

leave-on masks or peels for treatment of the face

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Paste Masks (mud packs)	3.7 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.027; 0.2; X		
RIVM Cosmetics Fact Sheet	Skin care - Peeling-gel	.8 g	104 / year	5 min	
RIVM Cosmetics Fact Sheet	Skin care - Face pack	20 g	104/year	20 min	
SUPERB (Wu et al 2012) Frequencies are per month	Mask / Deep cleanser (ADULT)		2.8(6.3); 11(13.9); 2.4(3.60); 0.8(-) WM Par, WM Older		51%; 22%; 47%; 17% (W;M parents W; M older adults)

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	15	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.5	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.5	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.05	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

218 . P.PC.430.000 face powder

pressed or loose powders for face

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Face Powders	0.085 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.35; 0.67; 0.33		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.1	Lognormal	0	99	B	
Frequency (per year)	use.freq	164	lognormal	0	99	B	
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	~average
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.6	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.6	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

219 . P.PC.440.001 face scrub-acne

facial cleansing products containing exfoliating particles, for acne treatment

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Face Powders	0.085 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.35; 0.67; 0.33		
EFH 17-3	Cleansing Products (cold creams, cleansing lotions, liquids, and pads)	1.7 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.63; 0.8; 0.54		
RIVM Cosmetics Fact Sheet	Facial cleanser	2.5 g	730 / year	5 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Cleansing products	1.7 (g/use)	0.54-2 (per day; min-max ranges for North America)		
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	F & H Bar Soap-Face	0.27 (g/use)	1 per day		
SUPERB (Wu et al 2012) Frequencies are per month	Facial cleanser (ADULT)		35(18.8); 23(14.5); 30(15.60); 21(23.5) WM Par, WM Older		73%; 23%; 59%; 12% (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Mask / Deep cleanser (ADULT)		2.8(6.3); 11(13.9); 2.4(3.60); 0.8(-) WM Par, WM Older		51%; 22%; 47%; 17% (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Facial cleanser (CHILD)		-(-); -(-); 21.2(20); 10.8(7.9) F M <=5 F M >5		-; -; 42%; 11% F; M (5 and under) F; M 5+
EFH 17-51/53 Loretz 2008	Facial Cleanser	2.57 (1.78) g	1.6 (0.52) /day		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	2.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	

Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	lower prevalence with respect to regular face scrub
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.05	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

220 . P.PC.440.999 face scrub-NOC

facial cleansing products containing exfoliating particles (excluding products for acne)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Cleansing Products (cold creams, cleansing lotions, liquids, and pads)	1.7 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.63; 0.8; 0.54		
RIVM Cosmetics Fact Sheet	Facial cleanser	2.5 g	730 / year	5 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Cleansing products	1.7 (g/use)	0.54-2 (per day; min-max ranges for North America)		
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	F & H Bar Soap-Face	0.27 (g/use)	1 per day		
SUPERB (Wu et al 2012) Frequencies are per month	Facial cleanser (ADULT)		35(18.8); 23(14.5); 30(15.60); 21(23.5) WM Par, WM Older		73%; 23%; 59%; 12% (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Mask / Deep cleanser (ADULT)		2.8(6.3); 11(13.9); 2.4(3.60); 0.8(-) WM Par, WM Older		51%; 22%; 47%; 17% (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Facial cleanser (CHILD)		-(-); -(-); 21.2(20); 10.8(7.9) F M <=5 F M >5		-; -; 42%; 11% F; M (5 and under) F; M 5+
EFH 17-51/53 Loretz 2008	Facial Cleanser	2.57 (1.78) g	1.6 (0.52) /day		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	2.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	5	B	

Direct use prevalence (fraction)	use.prev	0.11	point	6	12	M
Direct use prevalence (fraction)	use.prev	0.42	point	6	12	W
Direct use prevalence (fraction)	use.prev	0.5	point	13	99	M
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W
Household prevalence for indirect exposure (fraction)	house.prev	0.5	point	0	99	B
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B
Fraction of product mass on skin retained after direct use	f.residual	0.05	point	0	99	B
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B

221 . P.PC.450.001 face wash-acne

facial cleansing products (excluding scrubs), for acne treatment

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Cleansing Products (cold creams, cleansing lotions, liquids, and pads)	1.7 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.63; 0.8; 0.54		
RIVM Cosmetics Fact Sheet	Facial cleanser	2.5 g	730 / year	5 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Cleansing products	1.7 (g/use)	0.54-2 (per day; min-max ranges for North America)		
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	F & H Bar Soap-Face	0.27 (g/use)	1 per day		
SUPERB (Wu et al 2012) Frequencies are per month	Facial cleanser (ADULT)		35(18.8); 23(14.5); 30(15.60); 21(23.5) WM Par, WM Older		73%; 23%; 59%; 12% (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Mask / Deep cleanser (ADULT)		2.8(6.3); 11(13.9); 2.4(3.60); 0.8(-) WM Par, WM Older		51%; 22%; 47%; 17% (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Facial cleanser (CHILD)		-(-); -(-); 21.2(20); 10.8(7.9) F M <=5 F M >5		-; -; 42%; 11% F; M (5 and under) F; M 5+
EFH 17-51/53 Loretz 2008	Facial Cleanser	2.57 (1.78) g	1.6 (0.52) /day		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	2.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	lower prevalence with repeat to

Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	regular face was
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.05	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

222 . P.PC.450.029 face wash-spray

facial cleansing products (excluding scrubs) (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Cleansing Products (cold creams, cleansing lotions, liquids, and pads)	1.7 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.63; 0.8; 0.54		
RIVM Cosmetics Fact Sheet	Facial cleanser	2.5 g	730 / year	5 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Cleansing products	1.7 (g/use)	0.54-2 (per day; min-max ranges for North America)		
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	F & H Bar Soap-Face	0.27 (g/use)	1 per day		
SUPERB (Wu et al 2012) Frequencies are per month	Facial cleanser (ADULT)		35(18.8); 23(14.5); 30(15.60); 21(23.5) WM Par, WM Older		73%; 23%; 59%; 12% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Mask / Deep cleanser (ADULT)		2.8(6.3); 11(13.9); 2.4(3.60); 0.8(-) WM Par, WM Older		51%; 22%; 47%; 17% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Facial cleanser (CHILD)		-(-); -(-); 21.2(20); 10.8(7.9) F M <=5 F M >5		-; -; 42%; 11% F;M (5 and under) F;M 5+
EFH 17-51/53 Loretz 2008	Facial Cleanser	2.57 (1.78) g	1.6 (0.52) /day		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	2.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	

Direct use prevalence (fraction)	use.prev	0	point	0	5	B
Direct use prevalence (fraction)	use.prev	0.11	point	6	12	M
Direct use prevalence (fraction)	use.prev	0.42	point	6	12	W
Direct use prevalence (fraction)	use.prev	0.5	point	13	99	M
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W
Household prevalence for indirect exposure (fraction)	house.prev	0.5	point	0	99	B
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B
Fraction of product mass on skin retained after direct use	f.residual	0.05	point	0	99	B
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B
						value for indoor product

223 . P.PC.450.999 face wash-NOC

facial cleansing products (excluding scrubs and products for acne)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Cleansing Products (cold creams, cleansing lotions, liquids, and pads)	1.7 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.63; 0.8; 0.54		
RIVM Cosmetics Fact Sheet	Facial cleanser	2.5 g	730 / year	5 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Cleansing products	1.7 (g/use)	0.54-2 (per day; min-max ranges for North America)		
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	F & H Bar Soap-Face	0.27 (g/use)	1 per day		
SUPERB (Wu et al 2012) Frequencies are per month	Facial cleanser (ADULT)		35(18.8); 23(14.5); 30(15.60); 21(23.5) WM Par, WM Older		73%; 23%; 59%; 12% (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Mask / Deep cleanser (ADULT)		2.8(6.3); 11(13.9); 2.4(3.60); 0.8(-) WM Par, WM Older		51%; 22%; 47%; 17% (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Facial cleanser (CHILD)		-(-); -(-); 21.2(20); 10.8(7.9) F M <=5 F M >5		-; -; 42%; 11% F; M (5 and under) F; M 5+
EFH 17-51/53 Loretz 2008	Facial Cleanser	2.57 (1.78) g	1.6 (0.52) /day		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	2.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	5	B	

Direct use prevalence (fraction)	use.prev	0.11	point	6	12	M
Direct use prevalence (fraction)	use.prev	0.42	point	6	12	W
Direct use prevalence (fraction)	use.prev	0.5	point	13	99	M
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W
Household prevalence for indirect exposure (fraction)	house.prev	0.5	point	0	99	B
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B
Fraction of product mass on skin retained after direct use	f.residual	0.05	point	0	99	B
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B

224 . P.PC.460.029 foot care-spray

miscellaneous products for application to feet, including scrubs, lotions, and deodorants (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Foot Powder and Sprays		(per day: CTFA; cosmetics company; Simmons Market Research) 0.061; 0.079; X		
RIVM Cosmetics Fact Sheet	Foot care - Antiperspirant	1.2 g	730 /year	720	
RIVM Cosmetics Fact Sheet	Foot care - Anti-fungicides	.1 g	90 /year	720	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	280	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	~average
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.15	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.15	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.15	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for	volume	24	Point	0	99	B	value for indoor product

spray products (m^3)

225 . P.PC.460.999 foot care-NOC

miscellaneous products for application to feet, including scrubs, lotions, and deodorants

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Foot Powder and Sprays		(per day: CTFA; cosmetics company; Simmons Market Research) 0.061; 0.079; X		
RIVM Cosmetics Fact Sheet	Foot care - Antiperspirant	1.2 g	730 /year	720	
RIVM Cosmetics Fact Sheet	Foot care - Anti-fungicides	.1 g	90 /year	720	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	280	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.15	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.15	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.15	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

226 . P.PC.470.000 foundation or concealer

liquid or cream foundation make-ups and concealers

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Foundations	0.265 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.46; 0.78; 0.47		
EFH 17-3	Makeup Bases	0.13 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.24; 0.64; X		
RIVM Cosmetics Fact Sheet	Make-up - Facial make-up	.8 g	365/ year	960	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Face/eye cosmetics foundation liquid	0-2.65 (g/use; min-max ranges for North America)	1.0-2.0 (per day; min-max ranges for North America)		
SUPERB (Wu et al 2012) Frequencies are per month	Foundation (ADULT)		17.00(13); -(); 21(12.70); -() WM Par, WM Older		65%; -; 61%; - (W; M parents W; M older adults)
SUPERB (Bennett et al. 2012)	Foundation				60; 41 pct hshlds parents; older adults
EFH 17-42 Loretz et al. 2006	Liquid Foundation	0.54 (0.52) g			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	270	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	

Direct use prevalence (fraction)	use.prev	0.63	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.63	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

227 . P.PC.480.029 fragrance-spray

fragrances, colognes, and perfumes (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Colognes and Toilet Water	0.65 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.68; 0.85; 0.56		
EFH 17-3	Perfumes	0.23 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.29; 0.26; 0.38		
EFH 17-3	Sachets	0.2 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.0061; 0.034; X		
RIVM Cosmetics Fact Sheet	Fragrances - Eau de toilette spray	.72 g	1095 / year	320 min	
RIVM Cosmetics Fact Sheet	Fragrances - Perfume	.2 g	237 /year	320 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Fine fragrances	0.1-5.08 (g/use; min-max ranges for North America)	1.0-11.6 (per day; min-max ranges for North America)		
SUPERB (Wu et al 2012) Frequencies are per month	Fragrance (ADULT)		14.00(12.60); -(); 15(12.80); -() WM Par, WM Older		76%; -; 70%; - (W; M parents W; M older adults)
EFH 17-42 Loretz et al. 2006	Spray Perfume	0.33 (0.41) g			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	183	lognormal	0	99	B	assume .5/day
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	

Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.73	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.73	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.5	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B	value for indoor product

228 . P.PC.480.999 fragrance-NOC

fragrances, colognes, and perfumes

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Colognes and Toilet Water	0.65 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.68; 0.85; 0.56		
EFH 17-3	Perfumes	0.23 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.29; 0.26; 0.38		
EFH 17-3	Sachets	0.2 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.0061; 0.034; X		
RIVM Cosmetics Fact Sheet	Fragrances - Perfume	.2 g	237 /year	320 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Fine fragrances	0.1-5.08 (g/use; min-max ranges for North America)	1.0-11.6 (per day; min-max ranges for North America)		
SUPERB (Wu et al 2012) Frequencies are per month	Fragrance (ADULT)		14.00(12.60); -(); 15(12.80); -() WM Par, WM Older		76%; -(); 70%; -(W; M parents W; M older adults)

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	183	lognormal	0	99	B	assume .5/day
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.73	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.73	point	0	99	B	

Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.5	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B	value for indoor product

229 . P.PC.490.000 glitter

powder products containing reflective particles for face or body

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

230 . P.PC.500.000 hair bleach

products for lightening or removing color from hair on the head

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Hair Lighteners		(per day: CTFA; cosmetics company; Simmons Market Research) 0.0003; X; X		
EFH 17-3	Hair Bleaches		(per day: CTFA; cosmetics company; Simmons Market Research) 0.0005; X; X		
RIVM Cosmetics Fact Sheet	Hair care - Hair bleaching products	200 g	10 /year	45 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	200	Lognormal	0	99	B	
Frequency (per year)	use.freq	10	lognormal	0	99	B	
Duration of Direct Use (min)	duration	45	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

231 . P.PC.510.019 hair color-permanent

hair colors and dyes characterized as permanent

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Hair Dye		(per day: CTFA; cosmetics company; Simmons Market Research) 0.001; X; 0.005		
EFH 17-3	Hair Rinse (coloring)		(per day: CTFA; cosmetics company; Simmons Market Research) 0.0004; X; X		
SUPERB (Wu et al 2012) Frequencies are per month	Hair dye (ADULT)		0.4(0.4); 0.2(0); 0.7(0.50); 1(0) WM Par, WM Older		63%; 3%; 51%; 4% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Hair dye (CHILD)		-(-); -(-); .(.) .(.) F M <=5 F M >5		-; -; 0%; 0% F;M (5 and under) F;M 5+

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	200	Lognormal	0	99	B	same as hair bleach
Frequency (per year)	use.freq	3	lognormal	0	99	M	
Frequency (per year)	use.freq	7	lognormal	0	99	W	
Duration of Direct Use (min)	duration	45	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.04	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.6	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.6	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

232 . P.PC.510.024 hair color-professional

hair colors and dyes characterized as for professional use

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Hair Dye		(per day: CTFA; cosmetics company; Simmons Market Research) 0.001; X; 0.005		
EFH 17-3	Hair Rinse (coloring)		(per day: CTFA; cosmetics company; Simmons Market Research) 0.0004; X; X		
SUPERB (Wu et al 2012) Frequencies are per month	Hair dye (ADULT)		0.4(0.4); 0.2(0); 0.7(0.50); 1(0) WM Par, WM Older		63%; 3%; 51%; 4% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Hair dye (CHILD)		-(-); -(-); .(.) F M <=5 F M >5		-; -; 0%; 0% F;M (5 and under) F;M 5+

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	200	Lognormal	0	99	B	same as hair bleach
Frequency (per year)	use.freq	3	lognormal	0	99	M	
Frequency (per year)	use.freq	7	lognormal	0	99	W	
Duration of Direct Use (min)	duration	45	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.04	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.6	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.6	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

233 . P.PC.510.030 hair color-temporary

hair colors and dyes characterized as temporary

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Hair Dye		(per day: CTFA; cosmetics company; Simmons Market Research) 0.001; X; 0.005		
EFH 17-3	Hair Rinse (coloring)		(per day: CTFA; cosmetics company; Simmons Market Research) 0.0004; X; X		
SUPERB (Wu et al 2012) Frequencies are per month	Hair dye (ADULT)		0.4(0.4); 0.2(0); 0.7(0.50); 1(0) WM Par, WM Older		63%; 3%; 51%; 4% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Hair dye (CHILD)		-(-); -(-); .(); .() F M <=5 F M >5		-; -; 0%; 0% F;M (5 and under) F;M 5+

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	
Frequency (per year)	use.freq	2	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.1	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

234 . P.PC.510.031 hair color-temporary spray

hair colors and dyes characterized as temporary (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Hair Color Spray		(per day: CTFA; cosmetics company; Simmons Market Research) X; X; X		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	
Frequency (per year)	use.freq	2	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.1	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

235 . P.PC.510.999 hair color-NOC

hair coloring products not otherwise categorized

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Hair Dye		(per day: CTFA; cosmetics company; Simmons Market Research) 0.001; X; 0.005		
EFH 17-3	Hair Rinse (coloring)		(per day: CTFA; cosmetics company; Simmons Market Research) 0.0004; X; X		
SUPERB (Wu et al 2012) Frequencies are per month	Hair dye (ADULT)		0.4(0.4); 0.2(0); 0.7(0.50); 1(0) WM Par, WM Older		63%; 3%; 51%; 4% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Hair dye (CHILD)		-(-); -(-); .(.) .(.) F M <=5 F M >5		-; -; 0%; 0% F;M (5 and under) F;M 5+

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	200	Lognormal	0	99	B	same as hair bleach
Frequency (per year)	use.freq	3	lognormal	0	99	M	
Frequency (per year)	use.freq	7	lognormal	0	99	W	
Duration of Direct Use (min)	duration	45	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.04	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.6	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.6	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

236 . P.PC.520.000 hair color activator

chemical activators for hair coloring products

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	20	Lognormal	0	99	B	
Frequency (per year)	use.freq	10	lognormal	0	99	B	
Duration of Direct Use (min)	duration	45	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

237 . P.PC.530.000 hair color developer

chemical developers for hair coloring products

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	20	Lognormal	0	99	B	
Frequency (per year)	use.freq	10	lognormal	0	99	B	
Duration of Direct Use (min)	duration	45	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

238 . P.PC.540.000 hair color toner

chemical toners for hair coloring products

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	20	Lognormal	0	99	B	
Frequency (per year)	use.freq	10	lognormal	0	99	B	
Duration of Direct Use (min)	duration	45	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

239 . P.PC.550.011 hair conditioner-leave-in

leave-in everyday hair conditioners and detanglers

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	30	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.5	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.5	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	0.02	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

240 . P.PC.550.012 hair conditioner-leave-in-spray

leave-in everyday hair conditioners (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	30	Lognormal	0	99	B	~ 1 oz; all assumed
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.5	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.5	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	0.02	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B	assume trigger spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

241 . P.PC.550.029 hair conditioner-spray

rinse-out everyday hair conditioners (excluding combo shampoo/conditioner products) (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	
Frequency (per year)	use.freq	180	lognormal	0	99	B	
Duration of Direct Use (min)	duration	4	Lognormal	0	99	B	consensus
Direct use prevalence (fraction)	use.prev	0.6	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.56	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.92	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.92	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	0.02	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B	assume trigger spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

242 . P.PC.550.999 hair conditioner-NOC

rinse-out everyday hair conditioners (excluding combo shampoo/conditioner products)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Hair Conditioners	12.4 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.4; 0.4; 0.27		
EFH 17-3	Hair Rinses	12.7 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.064; 0.18; X		
RIVM Cosmetics Fact Sheet	Hair care - Conditioner	14 g	104 / year	4 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Hair rinses	7-12.7 (g/use; min-max ranges for North America)	0.064-1 (per day; min-max ranges for North America)		
SUPERB (Wu et al 2012) Frequencies are per month	Hair conditioner (ADULT)		21(10.1); 19(12.2); 13(9.90); 19(11.2) WM Par, WM Older		92%; 56%; 72%; 40% (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Hair conditioner (CHILD)		13.5(9.8); 12.6(11.00); 14.1(10.00); 14.9(11) F M <=5 F M >5		65%; 27%; 90%; 43% F; M (5 and under) F; M 5+
EFH 17-51/53 Loretz 2008	Conditioner	13.13 (11.22) g	1.1 (.19)		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	
Frequency (per year)	use.freq	255.5	lognormal	0	99	B	
Duration of Direct Use (min)	duration	4	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.6	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.56	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.92	point	13	99	W	

Household prevalence for indirect exposure (fraction)	house.prev	0.92	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	0.02	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B	value for indoor product

243 . P.PC.560.024 hair conditioning treatment-professional

hair conditioning and moisturizing treatments for occasional use characterized as for professional use

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Hair Rinses	12.7 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.064; 0.18; X		
RIVM Cosmetics Fact Sheet	Hair care - Conditioner	14 g	104 / year	4 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Hair rinses	7-12.7 (g/use; min-max ranges for North America)	0.064-1 (per day; min-max ranges for North America)		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	
Frequency (per year)	use.freq	2	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

244 . P.PC.560.029 hair conditioning treatment-spray

hair conditioning and moisturizing treatments for occasional use (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B	assume trigger spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

245 . P.PC.560.999 hair conditioning treatment-NOC

hair conditioning and moisturizing treatments for occasional use

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Hair Rinses	12.7 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.064; 0.18; X		
RIVM Cosmetics Fact Sheet	Hair care - Conditioner	14 g	104 / year	4 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Hair rinses	7-12.7 (g/use; min-max ranges for North America)	0.064-1 (per day; min-max ranges for North America)		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

246 . P.PC.570.000 hair relaxer

chemical hair relaxers

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Wave Sets	2.6 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.003h; 0.04; X		
EFH 17-3	Permanent Wave	101 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.003; X; 0.001		
EFH 17-3	Hair Straighteners	0.2 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.0007; X; X		
RIVM Cosmetics Fact Sheet	Hair care - Permanent wave- Perm lotion	80 g	4 /year	40 min	
RIVM Cosmetics Fact Sheet	Hair care - Permanent wave- - Fixing lotion	80 g	4 /year	15 min	
SUPERB (Wu et al 2012) Frequencies are per month	Hair perm (ADULT)		0.3(0.3); 0.5(.); 0.5(0.90); 0.5(.) WM Par, WM Older		6%; 1%; 18%; 2% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Hair perm (CHILD)		0.4(0.10); .(); 0.1(0); .() F M <=5 F M >5		1%; 0%; 10%; 0% F;M (5 and under) F;M 5+

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	100	Lognormal	0	99	B	
Frequency (per year)	use.freq	5	lognormal	0	12	B	consensus
Frequency (per year)	use.freq	6	lognormal	13	99	B	consensus
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	5	M	
Direct use prevalence (fraction)	use.prev	0.01	point	0	5	W	
Direct use prevalence (fraction)	use.prev	0	point	6	12	M	
Direct use prevalence (fraction)	use.prev	0.1	point	6	12	W	

Direct use prevalence (fraction)	use.prev	0.02	point	13	99	M
Direct use prevalence (fraction)	use.prev	0.12	point	13	99	W
Household prevalence for indirect exposure (fraction)	house.prev	0.12	point	0	99	B
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B
						value for indoor product

247 . P.PC.580.000 hair spray

spray fixatives for hair

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Hair Sprays		(per day: CTFA; cosmetics company; Simmons Market Research) 0.25; 0.55; 0.32		
EFH 17-3	Hair Color Spray		(per day: CTFA; cosmetics company; Simmons Market Research) X; X; X		
RIVM Cosmetics Fact Sheet	Hair care - Hairspray, aerosol can		438 /year	.24 min spray / Exposure 5 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Hair sprays-aerosol	0.05 -14.08 (g/use; min-max ranges for North America)	1-5.36 (per day; min-max ranges for North America)		
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Hair spray (pump)	0-21.4 (g/use; min-max ranges for North America)	1-4.22 (per day; min-max ranges for North America)		
SUPERB (Wu et al 2012) Frequencies are per month	Hair spray (ADULT)		17(13.9); 7.6(9.1); 18(13.90); 26(14.3) WM Par, WM Older (-); (-); 5.5(9.5); 18.9(13) F M <=5 F M >5		55%; 10%; 70%; 29% (W;M parents W; M older adults) -; -; 56%; 33% F;M (5 and under) F;M 5+
SUPERB (Wu et al 2012) Frequencies are per month	Hair spray (CHILD)				
EFH 17-37 Weegels and Van Veen 2001	Hair Spray	1-11.6 g	.76 (0.68)	23/60 s =.38 minutes	
EFH 17-42 Loretz et al. 2006	Hairspray (aerosol)	2.58 (2.26) g			
EFH 17-42 Loretz et al. 2006	Hairspray (pump)	3.64 (3.5) g			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	180	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	5	M	
Direct use prevalence (fraction)	use.prev	0	point	0	5	W	
Direct use prevalence (fraction)	use.prev	0.33	point	6	12	M	
Direct use prevalence (fraction)	use.prev	0.56	point	6	12	W	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	~ average of SUPERB
Direct use prevalence (fraction)	use.prev	0.65	point	13	99	W	~ average of SUPERB
Household prevalence for indirect exposure (fraction)	house.prev	0.65	point	0	99	B	~ average of SUPERB
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

248 . P.PC.590.007 hair styling-gel

hair styling products for hold, shine, or texture (gel formulation indicated)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cosmetics Fact Sheet	Hair care - Hair styling, gel	.3 g	358 /year		
SUPERB (Bennett et al. 2012)	Hair styling products				100; 76 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.1	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.8	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

249 . P.PC.590.008 hair styling-gel-spray

hair styling products for hold, shine, or texture (gel and spray formulation indicated)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cosmetics Fact Sheet	Hair care - Hair styling, gel	.3 g	358 /year		
SUPERB (Bennett et al. 2012)	Hair styling products				100; 76 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	365	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.1	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.8	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B	assume trigger spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

250 . P.PC.590.014 hair styling-mousse

foaming hair styling products

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cosmetics Fact Sheet	Hair care - Hair styling, mousse	2.9 g	274/ year		
SUPERB (Wu et al 2012) Frequencies are per month	Hair mousse (ADULT)		17(12.1); 16(11.4); 11(9.70); 27(9.2) WM Par, WM Older		63%; 49%; 61%; 19% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Hair mousse (CHILD)		13(12.00); 7.20(9.7); 11.3(12); 17(14) F M <=5 F M >5		30%; 31%; 66%; 45% F;M (5 and under) F;M 5+
SUPERB (Bennett et al. 2012)	Hair styling products				100; 76 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	3	Lognormal	0	99	B	
Frequency (per year)	use.freq	144	lognormal	0	12	B	Average of SUPERB
Frequency (per year)	use.freq	264	lognormal	13	99	M	Average of SUPERB
Frequency (per year)	use.freq	192	lognormal	13	99	W	Average of SUPERB
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.31	point	0	5	M	
Direct use prevalence (fraction)	use.prev	0.3	point	0	5	W	
Direct use prevalence (fraction)	use.prev	0.45	point	6	12	M	
Direct use prevalence (fraction)	use.prev	0.66	point	6	12	W	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	M	Average of SUPERB
Direct use prevalence (fraction)	use.prev	0.62	point	13	99	W	Average of SUPERB
Household prevalence for indirect exposure (fraction)	house.prev	0.66	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules

Volume of aerosol cloud for spray products volume 24 Point 0 99 B value for indoor product
(m³)

251 . P.PC.590.015 hair styling-mousse-spray

foaming hair styling products (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Wu et al 2012) Frequencies are per month	Hair mousse (ADULT)		17(12.1); 16(11.4); 11(9.70); 27(9.2) WM Par, WM Older		63%; 49%; 61%; 19% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Hair mousse (CHILD)		13(12.00); 7.20(9.7); 11.3(12); 17(14) F M <=5 F M >5		30%; 31%; 66%; 45% F;M (5 and under) F;M 5+
SUPERB (Bennett et al. 2012)	Hair styling products				100; 76 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	3	Lognormal	0	99	B	
Frequency (per year)	use.freq	144	lognormal	0	12	B	Average of SUPERB
Frequency (per year)	use.freq	264	lognormal	13	99	M	Average of SUPERB
Frequency (per year)	use.freq	192	lognormal	13	99	W	Average of SUPERB
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.31	point	0	5	M	
Direct use prevalence (fraction)	use.prev	0.3	point	0	5	W	
Direct use prevalence (fraction)	use.prev	0.45	point	6	12	M	
Direct use prevalence (fraction)	use.prev	0.66	point	6	12	W	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	M	Average of SUPERB
Direct use prevalence (fraction)	use.prev	0.62	point	13	99	W	Average of SUPERB
Household prevalence for indirect exposure (fraction)	house.prev	0.66	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	

Fraction of mass used aerosolized	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B	value for indoor product

252 . P.PC.590.023 hair styling-powder

powder products for styling or fixing hair

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Bennett et al. 2012)	Hair styling products				100; 76 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

253 . P.PC.590.029 hair styling-spray

other hair styling products for shine or texture (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Bennett et al. 2012)	Hair styling products				100; 76 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	180	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

254 . P.PC.590.999 hair styling-NOC

other hair styling products for shine or texture

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Bennett et al. 2012)	Hair styling products				100; 76 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	180	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

255 . P.PC.600.029 hand sanitizer-spray

antibacterial products for hands (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Wu et al 2012) Frequencies are per month	Waterless hand sanitizer (ADULT)		41(72.6); 52.2(4.3); 87(250); 25.9(1.5) WM Par, WM Older		65%; 24; 87; 13 (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Waterless hand sanitizer (CHILD)		25.00(34); 20.7(32); 23.6(30); 41.4(85) F M <=5 F M >5		81%; 78%; 68%; 58% F;M (5 and under) F;M 5+
SUPERB (Bennett et al. 2012)	Hand sanitizer				50; 41 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	480	lognormal	0	12	M	
Frequency (per year)	use.freq	780	lognormal	0	12	W	
Frequency (per year)	use.freq	360	lognormal	13	99	M	
Frequency (per year)	use.freq	300	lognormal	13	99	W	
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.84	point	0	12	M	
Direct use prevalence (fraction)	use.prev	0.68	point	0	12	W	
Direct use prevalence (fraction)	use.prev	0.19	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.76	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.84	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin

Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B	assume trigger spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

256 . P.PC.600.999 hand sanitizer-NOC

antibacterial products for hands

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Wu et al 2012) Frequencies are per month	Waterless hand sanitizer (ADULT)		41(72.6); 52.2(4.3); 87(250); 25.9(1.5) WM Par, WM Older		65%; 24; 87; 13 (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Waterless hand sanitizer (CHILD)		25.00(34); 20.7(32); 23.6(30); 41.4(85) F M <=5 F M >5		81%; 78%; 68%; 58% F;M (5 and under) F;M 5+
SUPERB (Bennett et al. 2012)	Hand sanitizer				50; 41 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	480	lognormal	0	12	M	
Frequency (per year)	use.freq	780	lognormal	0	12	W	
Frequency (per year)	use.freq	360	lognormal	13	99	M	
Frequency (per year)	use.freq	300	lognormal	13	99	W	
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.84	point	0	12	M	
Direct use prevalence (fraction)	use.prev	0.68	point	0	12	W	
Direct use prevalence (fraction)	use.prev	0.19	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.76	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.84	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via	f.drain	1	Uniform	0	99	B	see General Rules

the residential drain
Volume of aerosol cloud for spray products (m³) volume 24 Point 0 99 B value for indoor product

257 . P.PC.610.000 hand soap

liquid hand soaps

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Cosmetics Fact Sheet	Washing hands - gel	0.8 g	1825 /year	1 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	F&H liquid soap-hand	1.6-1.7 (g/use; min-max ranges for North America)	5.0-8.0 (per day; min-max ranges for North America)		
SUPERB (Wu et al 2012) Frequencies are per month	Liquid soap (antibacterial) (ADULT)		116(130); 122(163); 138(130.00); 98(120) WM Par, WM Older		75%; 68%; 68%; 67% (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Liquid soap (not antibacterial) (ADULT)		101(86.3); 77(50.9); 96(121.00); 94(138) WM Par, WM Older		58%; 51%; 54%; 54% (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Liquid soap (antibacterial) (CHILD)		71.20(70); 66.4(61); 103(89); 78.9(58) F M <=5 F M >5		83%; 82%; 83%; 79% F; M (5 and under) F; M 5+
SUPERB (Bennett et al. 2012)	Liquid soap				93; 88 pct hshlds parents; older adults
SUPERB (Bennett et al. 2012)	Antibacterial soap				83; 53 pct hshlds parents; older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	1800	lognormal	0	99	B	average approx 5/day
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.95	point	0	12	B	Assume to account for both antibacterial and non-antibac use
Direct use prevalence (fraction)	use.prev	0.95	point	13	99	M	Assume to account for both antibacterial and non-antibac use
Direct use prevalence (fraction)	use.prev	0.95	point	13	99	W	Assume to account for both antibacterial and non-antibac use
Household prevalence for indirect exposure (fraction)	house.prev	0.95	point	0	99	B	Assume to account for both antibacterial and non-antibac use
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin

Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B	value for indoor product

258 . P.PC.620.000 hand wipes

wipes and solution primarily for hands

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	24	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.2	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.5	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

259 . P.PC.630.007 hand or body lotion-gel

lotions and creams primarily for hands and body (gel formulations indicated)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	8	Lognormal	0	99	B	
Frequency (per year)	use.freq	292	lognormal	0	12	B	
Frequency (per year)	use.freq	292	lognormal	13	99	M	
Frequency (per year)	use.freq	547	lognormal	13	99	W	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.025	point	0	12	M	assume 5% of non-gel formations
Direct use prevalence (fraction)	use.prev	0.035	point	0	12	W	assume 5% of non-gel formations
Direct use prevalence (fraction)	use.prev	0.035	point	13	99	M	assume 5% of non-gel formations
Direct use prevalence (fraction)	use.prev	0.048	point	13	99	W	assume 5% of non-gel formations
Household prevalence for indirect exposure (fraction)	house.prev	0.048	point	0	99	B	assume 5% of non-gel formations
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

260 . P.PC.630.008 hand or body lotion-gel-spray

lotions and creams primarily for hands and body (gel and spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	8	Lognormal	0	99	B	
Frequency (per year)	use.freq	292	lognormal	0	12	B	
Frequency (per year)	use.freq	292	lognormal	13	99	M	
Frequency (per year)	use.freq	547	lognormal	13	99	W	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.025	point	0	12	M	assume 5% of non-gel formations
Direct use prevalence (fraction)	use.prev	0.035	point	0	12	W	assume 5% of non-gel formations
Direct use prevalence (fraction)	use.prev	0.035	point	13	99	M	assume 5% of non-gel formations
Direct use prevalence (fraction)	use.prev	0.048	point	13	99	W	assume 5% of non-gel formations
Household prevalence for indirect exposure (fraction)	house.prev	0.048	point	0	99	B	assume 5% of non-gel formations
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B	assume trigger spray, uniform distribution based on RIVM cleaning product fact sheet Table 9
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

261 . P.PC.630.029 hand or body lotion-spray

lotions and creams primarily for hands and body (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	8	Lognormal	0	99	B	
Frequency (per year)	use.freq	292	lognormal	0	12	B	
Frequency (per year)	use.freq	292	lognormal	13	99	M	
Frequency (per year)	use.freq	547	lognormal	13	99	W	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.5	point	0	12	M	
Direct use prevalence (fraction)	use.prev	0.7	point	0	12	W	
Direct use prevalence (fraction)	use.prev	0.7	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.95	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.95	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

262 . P.PC.630.999 hand or body lotion-NOC

lotions and creams primarily for hands and body

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Fragrance Lotion		(per day: CTFA; cosmetics company; Simmons Market Research) 0.0061; X; X		
EFH 17-3	Face, Body and Hand Preps	3.5 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.65; X; 1.12		
RIVM Cosmetics Fact Sheet	Skin care Cream - Hand cream	1.7 g	730 / year	720 min	
RIVM Cosmetics Fact Sheet	Skin care Cream - Body lotion	8 g	730 / year	720 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1) SUPERB (Wu et al 2012) Frequencies are per month	Body moisturizer	0.05-36.3 (g per day; min-max ranges for North America)			
SUPERB (Wu et al 2012) Frequencies are per month	Body lotion (ADULT)		25(15.9); 16(12.6); 25(11.90); 14(12.5) WM Par, WM Older		85%; 32%; 75%; 17% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Hand lotion (ADULT)		56(54.7); 26(43.7); 57(85.60); 18(19.3) WM Par, WM Older		95%; 66%; 96%; 79% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Body lotion (CHILD)		16.5(17.00); 16.70(14); 20.9(19); 23.7(14) F M <=5 F M >5		71%; 62%; 70%; 38% F;M (5 and under) F;M 5+
SUPERB (Wu et al 2012) Frequencies are per month	Hand lotion (CHILD)		18.7(30.00); 16.10(19); 22.5(24); 23.7(14) F M <=5 F M >5		68%; 55%; 70%; 47% F;M (5 and under) F;M 5+
SUPERB (Bennett et al. 2012)	Lotion hand and body				100; 94 pct hshlds parents;older adults
EFH 17-38 Loretz et al. 2005	Body Lotion, hands		2.12 (1.59)		
EFH 17-38 Loretz et al. 2005	Body Lotion, arms		1.52 (1.3)		
EFH 17-38 Loretz et al. 2005	Body Lotion, feet			.95 (1.01)	

EFH 17-38 Loretz et al. 2005	Body Lotion, legs		1.11 (0.98)
EFH 17-39 Loretz et al. 2005	Body Lotion	4.42 (4.19)	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	8	Lognormal	0	99	B	
Frequency (per year)	use.freq	292	lognormal	0	12	B	
Frequency (per year)	use.freq	292	lognormal	13	99	M	
Frequency (per year)	use.freq	547	lognormal	13	99	W	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.5	point	0	12	M	
Direct use prevalence (fraction)	use.prev	0.7	point	0	12	W	
Direct use prevalence (fraction)	use.prev	0.7	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.95	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.95	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

263 . P.PC.640.000 lice shampoo

shampoos for the treatment of head lice

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Wu et al 2012) Frequencies are per month	Shampoo for lice (ADULT)		1.60(3.50); -(-); 0.1(-); -(-) WM Par, WM Older		2%; 0%; 1%; 0% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Shampoo for lice (CHILD)		0.30(0.3); 2(.); 0.8(.) ; 0.1(0) F M <=5 F M >5		0.01; 1%; 3%; 5% F;M (5 and under) F;M 5+

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	10	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.03	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.03	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	0.02	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

264 . P.PC.650.000 liniment

liniments and ointments for treatment of muscle or joint pain

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Tonics and Dressings	2.9 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.073; 0.021; X		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	3	Lognormal	0	99	B	
Frequency (per year)	use.freq	17	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	average
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

265 . P.PC.660.000 lip balm

lip products primarily for protection

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.ingestion	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Fraction Ingested	Prevalence
RIVM Cosmetics Fact Sheet	Make-up - lip salve	0.01 g	1460 / year		1	
SUPERB (Wu et al 2012) Frequencies are per month	Lip Balm/Lipstick (ADULT)		43(50.1); 8.5(15.3); 45(49.80); 17(28.8) WM Par, WM Older			95%; 64%; 93%; 40% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Lip Balm/Lipstick (CHILD)		17.4(60.00); 9.90(22); 26.7(57); 10.1(12) F M <=5 F M >5			65%; 49%; 90%; 55% F;M (5 and under) F;M 5+

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.2	Lognormal	0	99	B	
Frequency (per year)	use.freq	120	lognormal	0	12	M	
Frequency (per year)	use.freq	290	lognormal	0	12	W	
Frequency (per year)	use.freq	168	lognormal	13	99	M	
Frequency (per year)	use.freq	528	lognormal	13	99	W	
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.53	point	0	12	M	
Direct use prevalence (fraction)	use.prev	0.78	point	0	12	W	
Direct use prevalence (fraction)	use.prev	0.52	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.95	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.95	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin

Fraction of product mass on skin retained after direct use	f.residual	0.5	point	0	99	B	
Fraction of product mass ingested	f.ingested	1	Lognormal	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B	value for indoor product

266 . P.PC.670.000 lip color

colored lip products, excluding glosses

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.ingestion	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Fraction Ingested	Prevalence
EFH 17-3	Lipstick and Lip Gloss		(per day; CTFA; cosmetics company; Simmons Market Research) 1.73; 1.23; 2.62			
RIVM Cosmetics Fact Sheet	Make-up - Lipstick	0.01 g	1460 / year		1	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Lipstick	0-0.2 (g/use; min-max ranges for North America)	1.0-4.0 (per day; min-max ranges for North America)			
SUPERB (Wu et al 2012) Frequencies are per month	Lip Balm/Lipstick (ADULT)		43(50.1); 8.5(15.3); 45(49.80); 17(28.8) WM Par, WM Older			95%; 64%; 93%; 40% (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Lip Balm/Lipstick (CHILD)		17.4(60.00); 9.90(22); 26.7(57); 10.1(12) F M <=5 F M >5			65%; 49%; 90%; 55% F; M (5 and under) F; M 5+
EFH 17-38 Loretz et al. 2005	Lipstick		2.35 (1.8) /day			
EFH 17-39 Loretz et al. 2005	Lipstick	.214 g				

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.2	Lognormal	0	99	B	
Frequency (per year)	use.freq	0	lognormal	0	12	M	
Frequency (per year)	use.freq	290	lognormal	0	12	W	
Frequency (per year)	use.freq	0	lognormal	13	99	M	

Frequency (per year)	use.freq	528	lognormal	13	99	W	
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	M	assumed no use
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	W	assumed limited use by girls under 13
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	assumed no use
Direct use prevalence (fraction)	use.prev	0.95	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.95	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.5	point	0	99	B	
Fraction of product mass ingested	f.ingested	1	Lognormal	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

267 . P.PC.680.000 lip gloss

glossy lip products

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.ingestion	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Fraction Ingested	Prevalence
EFH 17-3	Lipstick and Lip Gloss		(per day: CTFA; cosmetics company; Simmons Market Research) 1.73; 1.23; 2.62			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.2	Lognormal	0	99	B	
Frequency (per year)	use.freq	678	lognormal	0	99	B	
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	M	assumed
Direct use prevalence (fraction)	use.prev	0.1	point	0	12	W	assumed
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	assumed
Direct use prevalence (fraction)	use.prev	0.5	point	13	99	W	assumed
Household prevalence for indirect exposure (fraction)	house.prev	0.5	point	0	99	B	assumed
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.5	point	0	99	B	
Fraction of product mass ingested	f.ingested	1	Lognormal	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

268 . P.PC.690.000 lip liner

pencils for lining lips

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.ingestion	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.2	Lognormal	0	99	B	
Frequency (per year)	use.freq	528	lognormal	0	99	B	
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	same as lip color
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.3	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.5	point	0	99	B	
Fraction of product mass ingested	f.ingested	1	Lognormal	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

269 . P.PC.700.000 makeup primer

products for priming face for make-up

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use			Prevalence
EFH 17-3	Makeup Fixatives		(per day: CTFA; cosmetics company; Simmons Market Research) 0.052; 0.12; X				

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	2	Lognormal	0	99	B	
Frequency (per year)	use.freq	63	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

270 . P.PC.710.000 makeup remover

products for removing face make-ups

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Eye Makeup Remover		(per day: CTFA; cosmetics company; Simmons Market Research) 0.29; 0.45; X		
RIVM Cosmetics Fact Sheet	Eye makeup remover	.5 g	365 / year	5 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	135	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.5	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.5	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

271 . P.PC.720.000 makeup set

multicomponent make-up set set for which individual products are not designated

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	2	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

272 . P.PC.730.000 mascara

eyelash mascaras

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Wu et al 2012) Frequencies are per month	Mascara (ADULT)		16.00(12.10); -(); 20(11.90); -() WM Par, WM Older		79%; -; 51%; - (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Makeup Mascara (CHILD)		-(-); -(); 16.2(16); -() F M <=5 F M >5		-; -; 21%; - F;M (5 and under) F;M 5+

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	216	lognormal	0	99	B	
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	M	
Direct use prevalence (fraction)	use.prev	0.21	point	0	12	W	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.79	point	13	65	W	
Direct use prevalence (fraction)	use.prev	0.51	point	66	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.79	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

273 . P.PC.740.029 mouthwash-spray

antiseptic and dental mouthwashes and rinses (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.ingestion	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency		Duration of Use	Fraction Ingested	Prevalence
EFH 17-3	Breath Fresheners		(per day: CTFA; cosmetics company; Simmons Market Research) 0.052; 0.43; 0.46				

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	114	lognormal	0	99	B	
Duration of Direct Use (min)	duration	1	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.02	point	0	12	B	assumed
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of product mass ingested	f.ingested	1	Lognormal	0	99	B	Assumed
Fraction of mass disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

274 . P.PC.740.999 mouthwash-NOC

antiseptic and dental mouthwashes and rinses

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.ingestion	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Fraction Ingested	Prevalence
EFH 17-3	Mouthwashes		(per day: CTFA; cosmetics company; Simmons Market Research) 0.42; 0.62; 0.58			
RIVM Cosmetics Fact Sheet	Mouth wash		1460 / year		0.1 (1 g ingested per 10g use)	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Mouthwash adult	30 (g/use)	0.4-2 (per day; min-max ranges for North America)		0.085	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	30	Lognormal	0	99	B	
Frequency (per year)	use.freq	197	lognormal	0	99	B	average of ACI/EFH
Duration of Direct Use (min)	duration	0.5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.2	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.5	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.5	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.5	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of product mass ingested	f.ingested	0	Lognormal	0	99	B	Approx consensus
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray	volume	24	Point	0	99	B	value for indoor product

products (m^3)

275 . P.PC.750.000 nail adhesive

adhesives for repairing fingernails or attaching artificial nails

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	2	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.03	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.03	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.1	Point	0	99	B	assumed
Fraction of product mass on skin retained after direct use	f.residual	0.2	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

276 . P.PC.760.000 nail polish

clear or colored nail enamels, polishes, basecoats, topcoats, and other acrylic coatings

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Nail Basecoats	0.2 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.052; 0.13; X		
EFH 17-3	Nail Polish and Enamel	0.3 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.16; 0.2; 0.07		
EFH 17-3	Nail Undercoats		(per day: CTFA; cosmetics company; Simmons Market Research) 0.049; 0.12; X		
RIVM Cosmetics Fact Sheet	Nail care - Nail polish	.25 g	156 / year	5 min (3360 for dermal)	
SUPERB (Wu et al 2012) Frequencies are per month	Nail polish (professional) (ADULT)		0.60(0.70); -(); 1.1(1.00); -() WM Par, WM Older		81%; -; 77%; - (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Nail polish (self) (ADULT)		1.10(1.40); -(); 2.1(2.40); -() WM Par, WM Older		53%; -; 39%; - (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Nail polish (self) (CHILD)		1.40(2); -(); 1.5(1.4); -() F M <=5 F M >5		45%; -; 79%; - F; M (5 and under) F; M 5+
SUPERB (Bennett et al. 2012)	Nail polish				40; 41 pct hshlds parents; older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.5	Lognormal	0	99	B	
Frequency (per year)	use.freq	0	lognormal	0	99	M	
Frequency (per year)	use.freq	18	lognormal	0	12	B	
Frequency (per year)	use.freq	19	lognormal	13	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	M	

Direct use prevalence (fraction)	use.prev	0.5	point	0	12	W	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	W	assumed professional use is included
Household prevalence for indirect exposure (fraction)	house.prev	0.8	point	0	99	B	assumed professional use is included
Fraction of product mass in contact with skin	f.contact	0.1	Point	0	99	B	assumed
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B	value for indoor product

277 . P.PC.770.000 nail polish remover

products for removing nail polish or artificial nails

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Nail Polish and Enamel Remover	3.1 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.088; 0.19; X		
RIVM Cosmetics Fact Sheet	Nail care - Nail polish remover	.5 g	156 / year	5 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	3	Lognormal	0	99	B	
Frequency (per year)	use.freq	19	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	assume same as polish
Direct use prevalence (fraction)	use.prev	0.3	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	M	assume prevalence same as polish
Direct use prevalence (fraction)	use.prev	0.5	point	0	12	W	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.8	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.1	Point	0	99	B	assumed
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

278 . P.PC.780.018 nail products-other

miscellaneous products for nail or cuticle treatment not covered by other categories

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	3	Lognormal	0	99	B	
Frequency (per year)	use.freq	24	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.02	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.1	Point	0	99	B	assumed
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

279 . P.PC.780.999 nail products-other-spray

miscellaneous products for nail or cuticle treatment not covered by other categories (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use		Prevalence
EFH 17-3	Nail Creams and Lotions	0.6 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.07; 0.14; X			
EFH 17-3	Nail Extenders		(per day: CTFA; cosmetics company; Simmons Market Research) 0.003; 0.013; X			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	3	Lognormal	0	99	B	
Frequency (per year)	use.freq	24	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.02	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.1	Point	0	99	B	assumed
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

280 . P.PC.790.029 scalp treatment-spray

products for treating the scalp, including products dandruff or hair loss (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

281 . P.PC.790.999 scalp treatment-NOC

products for treating the scalp, including products dandruff or hair loss

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

282 . P.PC.800.029 self-tanner-spray

chemical products for tanning, staining, or coloring the skin (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

283 . P.PC.800.999 self-tanner-NOC

chemical products for tanning, staining, or coloring the skin

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

284 . P.PC.810.000 sexual wellness

sexual wellness products, including personal lubricants

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

285 . P.PC.820.004 shampoo-dandruff

shampoos, including dual shampoo/conditioner products for treatment of dandruff

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	15	Lognormal	0	99	B	
Frequency (per year)	use.freq	255	lognormal	0	99	B	
Duration of Direct Use (min)	duration	4	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	assume reduced prevalence relative to non-dandruff shampoo
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for hair products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

286 . P.PC.820.999 shampoo-NOC

shampoos, including dual shampoo/conditioner products

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Shampoos	16.4 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.82; 0.59; 0.48		
EFH 17-3	Shampoo (coloring)		(per day: CTFA; cosmetics company; Simmons Market Research) 0.0005; X; X		
RIVM Cosmetics Fact Sheet	Hair care - Shampoo	20 g	260/year	4 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Shampoos	5-16.4 (g/use; min-max ranges for North America)	0.48-1 (per day; min-max ranges for North America)		
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Kids shampoos	0.5-10 (g/use; min-max ranges for North America)	0.11-0.43 (per day; min-max ranges for North America)		
SUPERB (Wu et al 2012) Frequencies are per month	Shampoo (ADULT)		22(9.7); 25(11.4); 16(9.90); 23(10.5) WM Par, WM Older		100%; 94%; 98%; 85% (W; M parents W; M older adults)
SUPERB (Bennett et al. 2012)	Shampoo and conditioner				100; 100 pct hshlds parents; older adults
EFH 17-42 Loretz et al. 2006	Shampoo	11.76 (8.77) g			

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	0.5	Lognormal	0	12	B	kid's shampoos
Mass per Use (g)	mass	15	Lognormal	13	99	B	
Frequency (per year)	use.freq	255	lognormal	0	12	B	~average .7/day
Frequency (per year)	use.freq	119	lognormal	13	99	B	midrange value for kid's shampoos

Duration of Direct Use (min)	duration	4	Lognormal	0	99	B
Direct use prevalence (fraction)	use.prev	1	point	0	12	B
Direct use prevalence (fraction)	use.prev	1	point	13	99	M
Direct use prevalence (fraction)	use.prev	1	point	13	99	W
Household prevalence for indirect exposure (fraction)	house.prev	1	point	0	99	B
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B
						value for indoor product

287 . P.PC.830.007 shaving cream-gel

shaving creams, foams, balms and soaps (gel formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Shave Cream	1.73 g	(per day: CTFA; cosmetics company; Simmons Market Research) X; 0.082; X 365 /year		
RIVM Cosmetics Fact Sheet	Men's cosmetics - Shaving cream	2 g	365 /year	5 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Shave Cream	1.0-9.0 (g/use; min-max ranges for North America)	0.3-1 (per day; min-max ranges for North America)		
SUPERB (Wu et al 2012) Frequencies are per month	Shaving or tanning cream (CHILD)		-(-); -(-); 19.7(14.00); 8.8(7) F M <=5 F M >5		-; -; 26%; - F; M (5 and under) F; M 5+

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	3	Lognormal	0	99	B	~average
Frequency (per year)	use.freq	237	lognormal	0	99	B	.65/day
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	5	M	
Direct use prevalence (fraction)	use.prev	0.26	point	6	12	M	
Direct use prevalence (fraction)	use.prev	0	point	0	12	W	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	M	assumed
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	W	assumed
Household prevalence for indirect exposure (fraction)	house.prev	0.8	point	0	99	B	assumed
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray	volume	24	Point	0	99	B	value for indoor product

products (m^3)

288 . P.PC.830.999 shaving cream-NOC

shaving creams, foams, balms and soaps

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Shave Cream	1.73 g	(per day: CTFA; cosmetics company; Simmons Market Research) X; 0.082; X 365 /year		
RIVM Cosmetics Fact Sheet	Men's cosmetics - Shaving cream	2 g	365 /year	5 min	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Shave Cream	1.0-9.0 (g/use; min-max ranges for North America)	0.3-1 (per day; min-max ranges for North America)		
SUPERB (Wu et al 2012) Frequencies are per month	Shaving or tanning cream (CHILD)		-(-); -(-); 19.7(14.00); 8.8(7) F M <=5 F M >5		-; -; 26%; - F; M (5 and under) F; M 5+

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	3	Lognormal	0	99	B	~average
Frequency (per year)	use.freq	237	lognormal	0	99	B	.65/day
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	5	M	
Direct use prevalence (fraction)	use.prev	0.26	point	6	12	M	
Direct use prevalence (fraction)	use.prev	0	point	0	12	W	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	M	assumed
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	W	assumed
Household prevalence for indirect exposure (fraction)	house.prev	0.8	point	0	99	B	assumed
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray	volume	24	Point	0	99	B	value for indoor product

products (m^3)

289 . P.PC.840.029 sunscreen-spray

sunscreens and blocks (spray or aerosol formulations specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Sunscreen	3.18 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.003; X; 0.002		
RIVM Cosmetics Fact Sheet	Sun care cosmetics - Sunscreen lotion	10 g	75 / year	150 min	
SUPERB (Wu et al 2012) Frequencies are per month	Sunscreen - hot season (ADULT)		25(19); 15(16.7); 20(15.00); 8(10.1) WM Par, WM Older		88%; 87%; 67%; 58% (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Sunscreen - cool season (ADULT)		20(14); 7(10.8); 23(14.00); 0.9(0.8) WM Par, WM Older		53%; 39%; 33%; 22% (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Sunscreen - hot season (CHILD)		24(19); 22.9(17.00); 23.5(15.00); 17.1(14) F M <=5 F M >5		96%; 92%; 100%; 89% F; M (5 and under) F; M 5+
SUPERB (Wu et al 2012) Frequencies are per month	Sunscreen - cool season (CHILD)		10.4(14); 10.3(12.00); 10(13.00); 5.3(8.5) F M <=5 F M >5		47%; 39%; 55%; 29% F; M (5 and under) F; M 5+
SUPERB (Bennett et al. 2012)	Sun block				80; 65 pct hshlds parents; older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	84	lognormal	0	12	M	average over seasons
Frequency (per year)	use.freq	264	lognormal	0	12	W	average over seasons
Frequency (per year)	use.freq	168	lognormal	13	99	M	average over seasons
Frequency (per year)	use.freq	204	lognormal	13	99	W	average over seasons
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.62	point	0	12	M	average over seasons
Direct use prevalence (fraction)	use.prev	0.76	point	0	12	W	average over seasons
Direct use prevalence (fraction)	use.prev	0.5	point	13	99	M	average over seasons

Direct use prevalence (fraction)	use.prev	0.6	point	13	99	W	average over seasons
Household prevalence for indirect exposure (fraction)	house.prev	0.76	point	0	99	B	average over seasons
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m ³)	volume	480	Point	0	99	B	value for outdoor product

290 . P.PC.840.100 sunscreen-children

suncrines and blocks marketed to children or babies

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Sunscreen	3.18 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.003; X; 0.002		
RIVM Cosmetics Fact Sheet	Sun care cosmetics - Sunscreen lotion	10 g	75 / year	150 min	
SUPERB (Wu et al 2012) Frequencies are per month	Sunscreen - hot season (ADULT)		25(19); 15(16.7); 20(15.00); 8(10.1) WM Par, WM Older		88%; 87%; 67%; 58% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Sunscreen - cool season (ADULT)		20(14); 7(10.8); 23(14.00); 0.9(0.8) WM Par, WM Older		53%; 39%; 33%; 22% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Sunscreen - hot season (CHILD)		24(19); 22.9(17.00); 23.5(15.00); 17.1(14) F M <=5 F M >5		96%; 92%; 100%; 89% F;M (5 and under) F;M 5+
SUPERB (Wu et al 2012) Frequencies are per month	Sunscreen - cool season (CHILD)		10.4(14); 10.3(12.00); 10(13.00); 5.3(8.5) F M <=5 F M >5		47%; 39%; 55%; 29% F;M (5 and under) F;M 5+
SUPERB (Bennett et al. 2012)	Sun block				80; 65 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	84	lognormal	0	12	M	average over seasons
Frequency (per year)	use.freq	264	lognormal	0	12	W	average over seasons
Frequency (per year)	use.freq	168	lognormal	13	99	M	average over seasons
Frequency (per year)	use.freq	204	lognormal	13	99	W	average over seasons
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	M	reduced prevalence relative to NOC
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	W	reduced prevalence relative to NOC
Direct use prevalence (fraction)	use.prev	0.5	point	13	99	M	average over seasons
Direct use prevalence (fraction)	use.prev	0.6	point	13	99	W	average over seasons
Household prevalence for indirect exposure (fraction)	house.prev	0.6	point	0	99	B	average over seasons
Fraction of product mass in contact	f.contact	1	Point	0	99	B	See general rules for products

with skin							applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m ³)	volume	480	Point	0	99	B	value for outdoor product

291 . P.PC.840.101 sunscreen-children-spray

sunscreens and blocks marketed to children or babies (spray or aerosol formulations specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Sunscreen	3.18 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.003; X; 0.002		
RIVM Cosmetics Fact Sheet	Sun care cosmetics - Sunscreen lotion	10 g	75 / year	150 min	
SUPERB (Wu et al 2012) Frequencies are per month	Sunscreen - hot season (ADULT)		25(19); 15(16.7); 20(15.00); 8(10.1) WM Par, WM Older		88%; 87%; 67%; 58% (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Sunscreen - cool season (ADULT)		20(14); 7(10.8); 23(14.00); 0.9(0.8) WM Par, WM Older		53%; 39%; 33%; 22% (W; M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Sunscreen - hot season (CHILD)		24(19); 22.9(17.00); 23.5(15.00); 17.1(14) F M <=5 F M >5		96%; 92%; 100%; 89% F; M (5 and under) F; M 5+
SUPERB (Wu et al 2012) Frequencies are per month	Sunscreen - cool season (CHILD)		10.4(14); 10.3(12.00); 10(13.00); 5.3(8.5) F M <=5 F M >5		47%; 39%; 55%; 29% F; M (5 and under) F; M 5+
SUPERB (Bennett et al. 2012)	Sun block				80; 65 pct hshlds parents; older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	84	lognormal	0	12	M	average over seasons
Frequency (per year)	use.freq	264	lognormal	0	12	W	average over seasons
Frequency (per year)	use.freq	168	lognormal	13	99	M	average over seasons
Frequency (per year)	use.freq	204	lognormal	13	99	W	average over seasons
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	M	reduced prevalence relative to NOC
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	W	reduced prevalence relative to NOC
Direct use prevalence (fraction)	use.prev	0.5	point	13	99	M	average over seasons

Direct use prevalence (fraction)	use.prev	0.6	point	13	99	W	average over seasons
Household prevalence for indirect exposure (fraction)	house.prev	0.6	point	0	99	B	average over seasons
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m ³)	volume	480	Point	0	99	B	value for outdoor product

292 . P.PC.840.999 sunscreen-NOC

sunscreens and blocks

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Sunscreen	3.18 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.003; X; 0.002		
RIVM Cosmetics Fact Sheet	Sun care cosmetics - Sunscreen lotion	10 g	75 / year	150 min	
SUPERB (Wu et al 2012) Frequencies are per month	Sunscreen - hot season (ADULT)		25(19); 15(16.7); 20(15.00); 8(10.1) WM Par, WM Older		88%; 87%; 67%; 58% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Sunscreen - cool season (ADULT)		20(14); 7(10.8); 23(14.00); 0.9(0.8) WM Par, WM Older		53%; 39%; 33%; 22% (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Sunscreen - hot season (CHILD)		24(19); 22.9(17.00); 23.5(15.00); 17.1(14) F M <=5 F M >5		96%; 92%; 100%; 89% F;M (5 and under) F;M 5+
SUPERB (Wu et al 2012) Frequencies are per month	Sunscreen - cool season (CHILD)		10.4(14); 10.3(12.00); 10(13.00); 5.3(8.5) F M <=5 F M >5		47%; 39%; 55%; 29% F;M (5 and under) F;M 5+
SUPERB (Bennett et al. 2012)	Sun block				80; 65 pct hshlds parents;older adults

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	84	lognormal	0	12	M	average over seasons
Frequency (per year)	use.freq	264	lognormal	0	12	W	average over seasons
Frequency (per year)	use.freq	168	lognormal	13	99	M	average over seasons
Frequency (per year)	use.freq	204	lognormal	13	99	W	average over seasons
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.62	point	0	12	M	average over seasons
Direct use prevalence (fraction)	use.prev	0.76	point	0	12	W	average over seasons
Direct use prevalence (fraction)	use.prev	0.5	point	13	99	M	average over seasons
Direct use prevalence (fraction)	use.prev	0.6	point	13	99	W	average over seasons
Household prevalence for indirect exposure (fraction)	house.prev	0.76	point	0	99	B	average over seasons
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin

Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m ³)	volume	480	Point	0	99	B	value for outdoor product

293 . P.PC.850.000 teeth whitener

teeth whitening products (excluding toothpastes)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.ingestion	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	6	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.05	point	0	99	B	
Fraction of product mass ingested	f.ingested	0.01	Lognormal	0	99	B	Assumed
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

294 . P.PC.860.000 toner

face and skin toners and astringents

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-3	Skin Fresheners and Astringents	2 g	(per day: CTFA; cosmetics company; Simmons Market Research) 0.33; 0.56; X		

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	2	Lognormal	0	99	B	
Frequency (per year)	use.freq	163	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.02	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.6	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.6	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.05	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

295 . P.PC.870.007 toothpaste-gel

toothpastes and dentrifices (gel formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.ingestion	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Fraction Ingested	Prevalence
EFH 17-3	Dentrifices		(per day: CTFA; cosmetics company; Simmons Market Research) 1.62; 0.67; 2.12			
RIVM Cosmetics Fact Sheet	Toothpaste: adults, children		720 /year		ingested per amount used: children 2-4 (0.3g/0.86g); children 5-7 (0.13g/0.94g); children 11-13 (0.07g/1.10g); adults (0.04g/1.39g)	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-3)	Toothpaste	0.05-2.4 (g/use; min-max ranges for North America)	0.67-4 (per day; min-max ranges for North America)		0.03-0.4	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	720	lognormal	0	99	B	
Duration of Direct Use (min)	duration	3	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	1	point	0	12	B	
Direct use prevalence (fraction)	use.prev	1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	1	point	0	99	B	

Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.05	point	0	99	B	
Fraction of product mass ingested	f.ingested	0.03	Lognormal	13	99	B	Approx average for adults
Fraction of product mass ingested	f.ingested	0.15	Lognormal	0	12	B	Approx average for children
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

296 . P.PC.870.999 toothpaste-NOC

toothpastes and dentrifices

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.ingestion	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Fraction Ingested	Prevalence
EFH 17-3	Dentrifices		(per day: CTFA; cosmetics company; Simmons Market Research) 1.62; 0.67; 2.12			
RIVM Cosmetics Fact Sheet	Toothpaste: adults, children		720 /year		ingested per amount used: children 2-4 (0.3g/0.86g); children 5-7 (0.13g/0.94g); children 11-13 (0.07g/1.10g); adults (0.04g/1.39g)	
American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-3)	Toothpaste	0.05-2.4 (g/use; min-max ranges for North America)	0.67-4 (per day; min-max ranges for North America)		0.03-0.4	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	720	lognormal	0	99	B	
Duration of Direct Use (min)	duration	3	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	1	point	0	12	B	
Direct use prevalence (fraction)	use.prev	1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	1	point	0	99	B	

Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.05	point	0	99	B	
Fraction of product mass ingested	f.ingested	0.03	Lognormal	13	99	B	Approx average for adults
Fraction of product mass ingested	f.ingested	0.15	Lognormal	0	12	B	Approx average for children
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

297 . P.PC.880.000 waxing

wax products for removing hair from face or body

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.2	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.2	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

298 . P.PE.010.029 animal repellent-spray

chemical animal repellents (spray or aerosol formulation specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	200	Lognormal	0	99	B	
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 value for outdoor product
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	

299 . P.PE.010.999 animal repellent-NOC

chemical animal repellents

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	200	Lognormal	0	99	B	
Frequency (per year)	use.freq	4	lognormal	0	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.01	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.0025	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

300 . P.PE.020.029 fungicide-spray

fungicides for garden or home use (spray or aerosol formulation specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Disinfectant Fact Sheet	Black mould removers -spray	11.1 min * .75 g /s = 500 g	1 / year	11.1 -13 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	500	Lognormal	0	99	B	
Frequency (per year)	use.freq	1	lognormal	0	99	B	
Duration of Direct Use (min)	duration	12	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B	assume trigger spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 value for outdoor product
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	

301 . P.PE.020.999 fungicide-NOC

fungicides for garden or home use

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	

product.direct.inhalationvapor

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
RIVM Disinfectant Fact Sheet	Black mould removers -spray	11.1 min * .75 g /s = 500 g	1 / year	11.1 -13 min	

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	500	Lognormal	0	99	B	
Frequency (per year)	use.freq	1	lognormal	0	99	B	
Duration of Direct Use (min)	duration	12	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.01	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.05	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.001	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

302 . P.PE.030.005 insect repellent-exterior

miscellaneous products for repelling insects, exterior use indicated

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

303 . P.PE.030.006 insect repellent-exterior-spray

miscellaneous products for repelling insects, exterior use indicated (spray or aerosol formulation specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	48	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.5	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.5	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B	assume trigger spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 value for outdoor product
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	

304 . P.PE.030.026 insect repellent-skin

products for repelling insects from skin

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Wu et al 2012) Frequencies are per month	Insect Repellent (ADULT)		2.40(5.30); 1.6(2.8); 3.9(12.30); 0.5(0.8) WM Par, WM Older		47%; 46%; 28%; 0.4 (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Insect Repellent (CHILD)		3.40(6.90); 1.90(3.2); 3.5(5); 1.3(1.6) F M <=5 F M >5		0.47; 46%; 55%; 45% F;M (5 and under) F;M 5+

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	13	lognormal	0	12	M	
Frequency (per year)	use.freq	38	lognormal	0	12	W	
Frequency (per year)	use.freq	41	lognormal	0	99	M	
Frequency (per year)	use.freq	19	lognormal	0	99	W	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.28	point	0	12	M	SUPERB average
Direct use prevalence (fraction)	use.prev	0.37	point	0	12	W	SUPERB average
Direct use prevalence (fraction)	use.prev	0.46	point	13	99	M	SUPERB average
Direct use prevalence (fraction)	use.prev	0.51	point	13	99	W	SUPERB average
Household prevalence for indirect exposure (fraction)	house.prev	0.51	point	0	99	B	SUPERB average
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used	f.aerosol	0.75	Uniform	0	99	B	assume aerosol spray, uniform

aerosolized							distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m ³)	volume	480	Point	0	99	B	value for outdoor product

305 . P.PE.030.027 insect repellent-skin-spray

products for repelling insects from skin (spray or aerosol formulation specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Wu et al 2012) Frequencies are per month	Insect Repellent (ADULT)		2.40(5.30); 1.6(2.8); 3.9(12.30); 0.5(0.8) WM Par, WM Older		47%; 46%; 28%; 0.4 (W;M parents W; M older adults)
SUPERB (Wu et al 2012) Frequencies are per month	Insect Repellent (CHILD)		3.40(6.90); 1.90(3.2); 3.5(5); 1.3(1.6) F M <=5 F M >5		0.47; 46%; 55%; 45% F;M (5 and under) F;M 5+

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	13	lognormal	0	12	M	
Frequency (per year)	use.freq	38	lognormal	0	12	W	
Frequency (per year)	use.freq	41	lognormal	0	99	M	
Frequency (per year)	use.freq	19	lognormal	0	99	W	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.28	point	0	12	M	SUPERB average
Direct use prevalence (fraction)	use.prev	0.37	point	0	12	W	SUPERB average
Direct use prevalence (fraction)	use.prev	0.46	point	13	99	M	SUPERB average
Direct use prevalence (fraction)	use.prev	0.51	point	13	99	W	SUPERB average
Household prevalence for indirect exposure (fraction)	house.prev	0.51	point	0	99	B	SUPERB average
Fraction of product mass in contact with skin	f.contact	1	Point	0	99	B	See general rules for products applied to skin
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	

Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m ³)	volume	480	Point	0	99	B	value for outdoor product

306 . P.PE.030.029 insect repellent-spray

miscellaneous products for repelling insects (excluding products to be applied to skin) (spray or aerosol formulation specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	48	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.5	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.5	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

307 . P.PE.030.999 insect repellent-NOC

miscellaneous products for repelling insects (excluding products to be applied to skin)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	1	Lognormal	0	99	B	
Frequency (per year)	use.freq	48	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.5	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.05	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.5	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.5	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	1	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

308 . P.PE.040.005 insecticide-exterior

insecticides, exterior use indicated - including lawn and gardens

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
Parkinsons Environment and Gene (PEG) study - lifetime prevalence	e Outdoor pesticide spr	ay			83.6
Parkinsons Environment and Gene (PEG) study - lifetime prevalence	e Outdoor pesticide bai	t			20.3
Parkinsons Environment and Gene (PEG) study - lifetime prevalence	e Outdoor pesticide gra	nule			21.5
SUPERB -Central CAL (Armes et al. 2011) - prevalence in the last year	Outdoor pesticide spray				81
SUPERB -Central CAL (Armes et al. 2011) - prevalence in the last year	Outdoor pesticide bait				32.6
SUPERB -Central CAL (Armes et al. 2011) - prevalence in the last year	Outdoor pesticide granule				17.9
SUPERB (Bennett et al. 2012)	All pesticides				73; 82 pct hshlds parents;older adults
SUPERB (Bennett et al. 2012)	Outdoor Spray				42.40%
SUPERB -NoCal (Bennett et al. 2012)	Outdoor Baits				12.40%
SUPERB -NoCal (Bennett et al. 2012)	Outdoor Trap				9.60%
SUPERB -NoCal (Bennett et al. 2012)	Outdoor Granules				7.10%
SUPERB -NoCal (Bennett et al. 2012)	Outdoor Candle				5.30%
SUPERB -NoCal (Bennett et al. 2012)	Outdoor Strips				3.70%
SUPERB -NoCal (Bennett et al. 2012)	Outdoor Foam				0.70%
SUPERB -NoCal (Bennett et al. 2012)	Outdoor Other				2.70%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	100	Lognormal	0	99	B	

Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	M	approx 30% average for everything except spray
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	W	approx 30% average for everything except spray
Household prevalence for indirect exposure (fraction)	house.prev	0.3	point	0	99	B	approx 30% average for everything except spray
Fraction of product mass in contact with skin	f.contact	0.005	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	value for outdoor product

309 . P.PE.040.006 insecticide-exterior-spray

insecticides, exterior use indicated (spray or aerosol formulation specified)

Microenvironment of Release:

Outdoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
Parkinsons Environment and Gene (PEG) study - lifetime prevalence	Outdoor pesticides	spray			83.6
SUPERB -Central CAL (Armes et al. 2011) - prevalence in the last year	Outdoor pesticide spray				81
SUPERB (Bennett et al. 2012)	Outdoor Spray				42.40%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	500	Lognormal	0	99	B	
Frequency (per year)	use.freq	10	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	M	consensus
Direct use prevalence (fraction)	use.prev	0.8	point	13	99	W	consensus
Household prevalence for indirect exposure (fraction)	house.prev	0.8	point	0	99	B	consensus
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 value for outdoor product
Volume of aerosol cloud for spray products (m^3)	volume	480	Point	0	99	B	

310 . P.PE.040.009 insecticide-interior

insecticides, interior use indicated

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
Parkinsons Environment and Gene (PEG) study - lifetime prevalence	Indoor pesticide spray	ay			86.6
Parkinsons Environment and Gene (PEG) study - lifetime prevalence	Indoor pesticide bait	t			7.4
Parkinsons Environment and Gene (PEG) study - lifetime prevalence	Indoor pesticide granule	nule			3.7
SUPERB -Central CAL (Armes et al. 2011) - prevalence in the last year	Indoor pesticide spray				64.8
SUPERB -Central CAL (Armes et al. 2011) - prevalence in the last year	Indoor pesticide bait				31.5
SUPERB -Central CAL (Armes et al. 2011) - prevalence in the last year	Indoor pesticide granule				20.4
SUPERB -Central CAL (Armes et al. 2011) - prevalence in the last year	Indoor Fogger				5.2
SUPERB -NoCal (Bennett et al. 2012)	Indoor Spray				23.90%
SUPERB -NoCal (Bennett et al. 2012)	Indoor Fogger				4.40%
SUPERB -NoCal (Bennett et al. 2012)	Indoor Baits				7.60%
SUPERB -NoCal (Bennett et al. 2012)	Indoor Granules				3.50%
SUPERB -NoCal (Bennett et al. 2012)	Indoor Candle				0.20%
SUPERB -NoCal (Bennett et al. 2012)	Indoor Strips				4.80%
SUPERB -NoCal (Bennett et al. 2012)	Indoor Foam				1.50%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	

Frequency (per year)	use.freq	27	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.25	point	13	99	M	approx 25% average for everything except spray
Direct use prevalence (fraction)	use.prev	0.25	point	13	99	W	approx 25% average for everything except spray
Household prevalence for indirect exposure (fraction)	house.prev	0.25	point	0	99	B	approx 25% average for everything except spray
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

311 . P.PE.040.010 insecticide-interior-spray

insecticides, interior use indicated (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
Parkinsons Environment and Gene (PEG) study - lifetime prevalence	Indoor pesticides	spray			86.6
SUPERB -Central CAL (Armes et al. 2011) - prevalence in the last year	Indoor pesticide spray				64.8
SUPERB -NoCal (Bennett et al. 2012)	Indoor Spray				23.90%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	
Frequency (per year)	use.freq	24	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.57	point	13	99	M	~average
Direct use prevalence (fraction)	use.prev	0.57	point	13	99	W	~average
Household prevalence for indirect exposure (fraction)	house.prev	0.57	point	0	99	B	~average
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9
Fraction of mass used	f.drain	0.05	Uniform	0	99	B	see General Rules

disposed of via the
residential drain

Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B	value for indoor product
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312 . P.PE.040.029 insecticide-spray

insecticides not otherwise characterized (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedin	applied to surfaces (no washoff); some f.drain to account for clean-up of materials
product.indirect	

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
Parkinsons Environment and Gene (PEG) study - lifetime prevalence	e Outdoor pesticide s	pray			83.6
Parkinsons Environment and Gene (PEG) study - lifetime prevalence	e Indoor pesticide sp	ray			86.6
SUPERB -Central CAL (Armes et al. 2011) - prevalence in the last year	Outdoor pesticide spray				81
SUPERB -Central CAL (Armes et al. 2011) - prevalence in the last year	Indoor pesticide spray				64.8
SUPERB (Bennett et al. 2012)	Outdoor Spray				42.40%
SUPERB -NoCal (Bennett et al. 2012)	Indoor Spray				23.90%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	
Frequency (per year)	use.freq	24	lognormal	0	99	B	assume interior
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.57	point	13	99	M	~average
Direct use prevalence (fraction)	use.prev	0.57	point	13	99	W	~average
Household prevalence for indirect exposure (fraction)	house.prev	0.57	point	0	99	B	~average
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after	f.residual	0.01	point	0	99	B	

direct use							
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m ³)	volume	24	Point	0	99	B	value for indoor product

313 . P.PE.040.999 insecticide-NOC

insecticides not otherwise characterized

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB (Bennett et al. 2012)	All pesticides				73; 82 pct hshlds parents;older adults
EFH 17-36	Insecticide		27/year		91.20%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	
Frequency (per year)	use.freq	27	lognormal	0	99	B	
Duration of Direct Use (min)	duration	30	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.77	point	13	99	M	~average of SUPERB
Direct use prevalence (fraction)	use.prev	0.77	point	13	99	W	~average of SUPERB
Household prevalence for indirect exposure (fraction)	house.prev	0.77	point	0	99	B	~average of SUPERB
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

314 . P.PE.050.000 rodenticide

rodenticides for interior or exterior use

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to surfaces (no washoff); some f.drain to account for clean-up of materials

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
EFH 17-36	Rodenticide				6.80%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	20	Lognormal	0	99	B	
Frequency (per year)	use.freq	2	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	all assumed
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.07	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.07	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.07	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.025	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.05	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

315 . P.PT.010.000 aquarium

miscellaneous aquarium treatment products

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	20	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.02	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.02	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.02	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

316 . P.PT.020.000 cat litter

cat litters

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.indirect	

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	8000	Lognormal	0	99	B	
Frequency (per year)	use.freq	104	lognormal	0	99	B	
Duration of Direct Use (min)	duration	5	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.05	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.3	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.3	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	6.2e-05	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

317 . P.PT.030.029 other pet treatments-spray

miscellaneous pet treatments (excluding pesticides) (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

318 . P.PT.030.999 other pet treatments-NOC

miscellaneous pet treatments (excluding pesticides)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.05	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

319 . P.PT.040.020 pesticide-pet

pesticides for application to pets

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB -NoCal (Bennett et al. 2012)	Pet				27.10%
EFH 17-36	Pet				40.00%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.33	point	13	99	M	~average
Direct use prevalence (fraction)	use.prev	0.33	point	13	99	W	~average
Household prevalence for indirect exposure (fraction)	house.prev	0.33	point	0	99	B	~average
Fraction of product mass in contact with skin	f.contact	0.1	Point	0	99	B	See general rules for DIY and other products applied to surfaces
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

320 . P.PT.040.021 pesticide-pet-spray

pesticides for application to pets (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied with uncertainty as to wash-off; or higher potential for disposal via drain

Relevant Data Records:

Data Source	Type of Product	Mass	Frequency	Duration of Use	Prevalence
SUPERB -NoCal (Bennett et al. 2012)	Pet				27.10%
EFH 17-36	Pet				40.00%

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	5	Lognormal	0	99	B	
Frequency (per year)	use.freq	12	lognormal	0	99	B	
Duration of Direct Use (min)	duration	2	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.33	point	13	99	M	~average
Direct use prevalence (fraction)	use.prev	0.33	point	13	99	W	~average
Household prevalence for indirect exposure (fraction)	house.prev	0.33	point	0	99	B	~average
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.55	Uniform	0	99	B	assume mix of trigger and aerosol sprays, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	0.15	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

321 . P.PT.050.000 pet shampoo

pet shampoos (including those contain pesticides)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	50	Lognormal	0	99	B	
Frequency (per year)	use.freq	6	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Direct use prevalence (fraction)	use.prev	0.01	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.1	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.1	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

322 . P.PT.060.029 pet stain cleaner-spray

carpet and upholstery cleaners for pet stains (spray or aerosol formulation specified)

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationaerosol	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for spray products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used aerosolized	f.aerosol	0.15	Uniform	0	99	B	assume trigger spray, uniform distribution based on RIVM cleaning product fact sheet Table 9 see General Rules
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

323 . P.PT.060.999 pet stain cleaner-NOC

carpet and upholstery cleaners for pet stains

Microenvironment of Release:

Indoor

Scenarios:

Active Scenarios	Notes
product.direct.dermal	
product.direct.inhalationvapor	
product.downthedrain product.indirect	applied to body, clothing, directly to drain, or to surfaces with wash-off

Relevant Data Records:

none

SHEDS Inputs:

Variable Description	Name	mean	form	min.age	max.age	gender	notes
Mass per Use (g)	mass	10	Lognormal	0	99	B	
Frequency (per year)	use.freq	52	lognormal	0	99	B	
Duration of Direct Use (min)	duration	10	Lognormal	0	99	B	
Direct use prevalence (fraction)	use.prev	0	point	0	12	B	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	M	
Direct use prevalence (fraction)	use.prev	0.4	point	13	99	W	
Household prevalence for indirect exposure (fraction)	house.prev	0.4	point	0	99	B	
Fraction of product mass in contact with skin	f.contact	0.01	Point	0	99	B	See general rules for cleaning products
Fraction of product mass on skin retained after direct use	f.residual	0.01	point	0	99	B	
Fraction of mass used disposed of via the residential drain	f.drain	1	Uniform	0	99	B	see General Rules
Volume of aerosol cloud for spray products (m^3)	volume	24	Point	0	99	B	value for indoor product

Skin Release Data

	puc	Data.source	Type.of.Product	Portion.of.Mass.to.Skin
113	P.AC.010.029	RIVM DIY Fact Sheet	Glue - Tube glue (hobby, small tube)	0.08 g / 9 g =0.0088
117	P.AC.010.029	RIVM DIY Fact Sheet	Glue - Two-component glue	.1 g / 20 g = 0.005
123	P.AC.010.029	RIVM DIY Fact Sheet; vapor only	Glue - Hot melt adhesive	.1 g / 65 g = 0.0015
124	P.AC.010.029	RIVM DIY Fact Sheet	Glue - Spray glue	100 mg/min
1131	P.AC.010.029	RIVM DIY Fact Sheet	Glue - Tube glue (hobby, small tube)	0.08 g / 9 g =0.0088
1171	P.AC.010.029	RIVM DIY Fact Sheet	Glue - Two-component glue	.1 g / 20 g = 0.005
1231	P.AC.010.029	RIVM DIY Fact Sheet; vapor only	Glue - Hot melt adhesive	.1 g / 65 g = 0.0015
1241	P.AC.010.029	RIVM DIY Fact Sheet	Glue - Spray glue	100 mg/min
1132	P.AC.010.999	RIVM DIY Fact Sheet	Glue - Tube glue (hobby, small tube)	0.08 g / 9 g =0.0088
1172	P.AC.010.999	RIVM DIY Fact Sheet	Glue - Two-component glue	.1 g / 20 g = 0.005
1232	P.AC.010.999	RIVM DIY Fact Sheet; vapor only	Glue - Hot melt adhesive	.1 g / 65 g = 0.0015
1242	P.AC.010.999	RIVM DIY Fact Sheet	Glue - Spray glue	100 mg/min
125	P.HM.020.000	RIVM DIY Fact Sheet	Caulk (called "Sealant cartridge" in European terminology)	50 mg/min
126	P.HM.020.000	RIVM DIY Fact Sheet	Caulk for Gluing/Construction adhesive (Called "Sealant / joints / assembly (glue)" in European Terminology)	.5 g / 390 g = .0013
134	P.HM.060.029	RIVM DIY Fact Sheet	Coating - Coating large surfaces	.25 g /3 kg = .000083
1341	P.HM.060.999	RIVM DIY Fact Sheet	Coating - Coating large surfaces	.25 g /3 kg = .000083
121	P.HM.100.000	RIVM DIY Fact Sheet	Thinset mortar (called "Tile Glue" in European terminology)	30 mg/min
114	P.HM.110.029	RIVM DIY Fact Sheet	Glue - Bottled glue - universal/wood	.08 g/ 10 g =0.008
1243	P.HM.110.029	RIVM DIY Fact Sheet	Glue - Spray glue	100 mg/min
1141	P.HM.110.999	RIVM DIY Fact Sheet	Glue - Bottled glue - universal/wood	.08 g/ 10 g =0.008
1244	P.HM.110.999	RIVM DIY Fact Sheet	Glue - Spray glue	100 mg/min
129	P.HM.190.000	RIVM DIY Fact Sheet	Fillers and putty-Filler/putty from tube	.05/40 = 0.00125
130	P.HM.190.000	RIVM DIY Fact Sheet	Fillers and putty-Two-component filler	20 mg/200 g = .001
140	P.HM.230.000	RIVM DIY Fact Sheet	Insulation foam	.25g /825 =.0003
136	P.HM.250.029	RIVM DIY Fact Sheet	Removers - Paint remover	.5 / 1 kg =0.0005
139	P.HM.250.029	RIVM DIY Fact Sheet	Removers - Sealant / foam remover	0.001
1361	P.HM.250.999	RIVM DIY Fact Sheet	Removers - Paint remover	.5 / 1 kg =0.0005
1391	P.HM.250.999	RIVM DIY Fact Sheet	Removers - Sealant / foam remover	0.001
1142	P.HM.280.000	RIVM DIY Fact Sheet	Glue - Bottled glue - universal/wood	.08 g/ 10 g =0.008
158	P.IH.040.029	RIVM Cleaning Product Fact Sheet	Sanitary products - Toilet cleaners	2.2 /55 =.045
1581	P.IH.040.999	RIVM Cleaning Product Fact Sheet	Sanitary products - Toilet cleaners	2.2 /55 =.045
165	P.IH.070.029	RIVM Cleaning Product Fact Sheet	Carpet products - Liquids	27g /500 =.054
166	P.IH.070.029	RIVM Cleaning Product Fact Sheet	Carpet products - Spray extraction machine	0 no dermal
1651	P.IH.070.999	RIVM Cleaning Product Fact Sheet	Carpet products - Liquids	27g /500 =.054
1661	P.IH.070.999	RIVM Cleaning Product Fact Sheet	Carpet products - Spray extraction machine	0 no dermal
167	P.IH.080.000	RIVM Cleaning Product Fact Sheet	Carpet products - Powders	5.0 mg/min * 22 min / 2244 g = .00005
148	P.IH.090.000	RIVM Cleaning Product Fact Sheet	Dishwashing products - Hand dishwashing liquids	.01 /500 =.00002
174	P.IH.110.000	RIVM Cleaning Product Fact Sheet	Drain openers	19 g / 500 g = .038
160	P.IH.190.000	RIVM Cleaning Product Fact Sheet	Floor and furniture products: Floor cleaning liquid	19/880 =.021
161	P.IH.190.000	RIVM Cleaning Product Fact Sheet	Floor products- Wet tissues	.25/245=.001
162	P.IH.200.000	RIVM Cleaning Product Fact Sheet	Floor products- Polishes	5.5/550 = .01
171	P.IH.210.029	RIVM Cleaning Product Fact Sheet	Glass cleaners	.29 g /33 g = .0087
1711	P.IH.210.999	RIVM Cleaning Product Fact Sheet	Glass cleaners	.29 g /33 g = .0087
151	P.IH.230.999	RIVM Cleaning Product Fact Sheet	All-purpose cleaners - Liquids	19 g / 500 g = .038
143	P.IH.260.013	RIVM Cleaning Product Fact Sheet	Laundry products - Liquids	.01 g /500 =.00002
1431	P.IH.260.999	RIVM Cleaning Product Fact Sheet	Laundry products - Liquids	.01 g /500 =.00002
172	P.IH.320.029	RIVM Cleaning Product Fact Sheet	Oven cleaners	.2 g/ 23.4 g =.0085
1721	P.IH.320.999	RIVM Cleaning Product Fact Sheet	Oven cleaners	.2 g/ 23.4 g =.0085
175	P.IH.330.000	RIVM Cleaning Product Fact Sheet	Shoe polish products - Spray	100 mg/min *1.2 min =120 mg /36 g =.0033
1511	P.IH.340.999	RIVM Cleaning Product Fact Sheet	All-purpose cleaners - Liquids	19 g / 500 g = .038
173	P.IH.340.999	RIVM Cleaning Product Fact Sheet	Metal cleaners	.1g/10 g =.01

169	P.IH.360.029	RIVM Cleaning Product Fact Sheet	Furniture and leather products - Furniture polish	5.5 g/ 550 g = .01
1691	P.IH.360.999	RIVM Cleaning Product Fact Sheet	Furniture and leather products - Furniture polish	5.5 g/ 550 g = .01
265	P.PC.020.000	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-3)	Aftershave	100%
262	P.PC.030.000	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Baby Lotions and creams	100%
261	P.PC.070.000	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Baby/Bath liquid	100%
246	P.PC.090.000	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	F&H Bar Soap -Hand	0.5-1%
248	P.PC.090.000	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	F&H Bar Soap -Body	0.5-1%
247	P.PC.190.000	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Liquid Soap-Body	0.5-1%
250	P.PC.190.000	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Body Wash	0.5-1%
2471	P.PC.200.000	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Liquid Soap-Body	0.5-1%
2501	P.PC.200.000	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Body Wash	0.5-1%
251	P.PC.220.000	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Bath Foam/Bubble Bath	0.5-1%
255	P.PC.280.007	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Antiperspirants-roll-ons	75%
257	P.PC.280.007	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Antiperspirant solid/bar	100%
2551	P.PC.280.028	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Antiperspirants-roll-ons	75%
2571	P.PC.280.028	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Antiperspirant solid/bar	100%
256	P.PC.280.029	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Antiperspirant aerosols	100%
2552	P.PC.280.999	American Cleaning Institute: Consumer	Antiperspirants-roll-ons	75%

		Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)		
2561	P.PC.280.999	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Antiperspirant aerosols	100%
2572	P.PC.280.999	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Antiperspirant solid/bar	100%
260	P.PC.410.029	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Other-Makeup remover	5%
2601	P.PC.410.999	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Other-Makeup remover	5%
249	P.PC.440.001	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Cleansing products	0.5-1%
252	P.PC.440.001	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	F & H Bar Soap-Face	0.5-1%
2491	P.PC.440.999	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Cleansing products	0.5-1%
2521	P.PC.440.999	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	F & H Bar Soap-Face	0.5-1%
2492	P.PC.450.001	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Cleansing products	0.5-1%
2522	P.PC.450.001	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	F & H Bar Soap-Face	0.5-1%
2493	P.PC.450.029	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Cleansing products	0.5-1%
2523	P.PC.450.029	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	F & H Bar Soap-Face	0.5-1%
2494	P.PC.450.999	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Cleansing products	0.5-1%
2524	P.PC.450.999	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	F & H Bar Soap-Face	0.5-1%
259	P.PC.470.000	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Face/eye cosmetics foundation liquid	100%
264	P.PC.480.029	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and	Fine fragrances	100%

		Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)		
2641	P.PC.480.999	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Fine fragrances	100%
241	P.PC.550.999	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Hair rinses	0.5-1%
2411	P.PC.560.024	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Hair rinses	0.5-1%
2412	P.PC.560.999	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Hair rinses	0.5-1%
243	P.PC.580.000	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Hair sprays-aerosol	0.5-5%
244	P.PC.580.000	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Hair spray (pump)	0.5-5%
187	P.PC.590.014	RIVM Cosmetics Fact Sheet	Hair care - Hair styling, mousse	.3/2.9
245	P.PC.610.000	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	F&H liquid soap-hand	0.5-1%
254	P.PC.630.999	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Body moisturizer	100%
258	P.PC.670.000	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Lipstick	100%
214	P.PC.760.000	RIVM Cosmetics Fact Sheet	Nail care - Nail polish	5-Jan
215	P.PC.770.000	RIVM Cosmetics Fact Sheet	Nail care - Nail polish remover	5-Feb
240	P.PC.820.999	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Shampoos	0.5-1%
263	P.PC.820.999	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Kids shampoos	0.5-1%
253	P.PC.830.007	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Shave Cream	1%
2531	P.PC.830.999	American Cleaning Institute: Consumer Product Ingredient Safety Exposure and Risk Screening Methods for Consumer Product Ingredients (Table A II-B-1)	Shave Cream	1%