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SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

: SBP 40/65 LNH Trade name

Product code : Q5113

Synonyms : Hydrocarbons, C6, Isoalkanes, <5% n-hexane and n-pentane

(UFI)

Unique Formula Identifier : 3A01-20MD-N00G-H6A3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Sub-: Industrial Solvent.

stance/Mixture Please refer to section 16 and/or the annexes for the regis-

tered uses under REACH.

Uses advised against

This product must not be used in applications other than the

above without first seeking the advice of the supplier.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier : Shell Chemicals Europe B.V.

PO Box 2334

3000 CH Rotterdam

Netherlands

: +31 (0)10 441 5137 / +31 (0)10 441 5191 Telephone : +31 (0)20 716 8316 / +31 (0)20 713 9230 Telefax

Contact for Safety Data

Sheet

: sccmsds@shell.com

1.4 Emergency telephone number

+44 (0) 1235 239 670 (This telephone number is available 24 hours per day, 7 days per

National Emergency Number: 112

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 2 H225: Highly flammable liquid and vapour.

Skin irritation, Category 2 H315: Causes skin irritation.

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Specific target organ toxicity - single exposure, Category 3, Narcotic effects

H336: May cause drowsiness or dizziness.

Aspiration hazard, Category 1 H304: May be fatal if swallowed and enters air-

ways.

Long-term (chronic) aquatic hazard, Cat-

H411: Toxic to aquatic life with long lasting effects.

egory 2

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :









Signal word : Danger

Hazard statements : PHYSICAL HAZARDS:

H225 Highly flammable liquid and vapour.

HEALTH HAZARDS:

H315 Causes skin irritation.

H336 May cause drowsiness or dizziness.

H304 May be fatal if swallowed and enters airways.

ENVIRONMENTAL HAZARDS:

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : Prevention:

P210 Keep away from heat, hot surfaces, sparks, open

flames and other ignition sources. No smoking. P243 Take action to prevent static discharges.

P280 Wear protective gloves/ protective clothing/ eye protec-

tion/ face protection.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

Response:

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower. P304 + P340 IF INHALED: Remove person to fresh air and

keep comfortable for breathing.

P301 + P310 IF SWALLOWED: Immediately call a POISON

CENTER/ doctor.

P331 Do NOT induce vomiting.

Storage:

No precautionary phrases.

Disposal:

No precautionary phrases.

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2.3 Other hazards

Ecological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

No specific hazards under normal use conditions.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Hydrocarbons, C6, isoalkanes, <5% n-hexane	Not Assigned 931-254-9 01-2119484651-34	Flam. Liq. 2; H225 Asp. Tox. 1; H304 Skin Irrit. 2; H315 STOT SE 3; H336 (Narcotic effects) Aquatic Chronic 2; H411	<= 70
pentane	109-66-0 203-692-4 601-006-00-1 01-2119459286-30	Flam. Liq. 1; H224 Asp. Tox. 1; H304 STOT SE 3; H336 (Narcotic effects) Aquatic Chronic 2; H411 EUH066	<= 70

For explanation of abbreviations see section 16.

Further information

Contains:

Chemical name	Identification number	Classification	Concentration (% w/w)
n-Hexane	110-54-3, 203- 777-6	Flam. Liq.2; H225 Skin Irrit.2; H315 Asp. Tox.1; H304 STOT RE2; H373 STOT SE3; H336 Repr.2; H361f Aquatic Chronic2; H411	>= 0 - < 5

For explanation of abbreviations see section 16.

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SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Not expected to be a health hazard when used under normal

conditions.

Protection of first-aiders : When administering first aid, ensure that you are wearing the

appropriate personal protective equipment according to the

incident, injury and surroundings.

If inhaled : Remove to fresh air. If rapid recovery does not occur,

transport to nearest medical facility for additional treatment.

In case of skin contact : Remove contaminated clothing. Immediately flush skin with

large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical

facility for additional treatment.

In case of eye contact : Flush eye with copious quantities of water.

Remove contact lenses, if present and easy to do. Continue

rinsina.

If persistent irritation occurs, obtain medical attention.

If swallowed : Call emergency number for your location / facility.

If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.

chest congestion of continued coagning of wheezi

4.2 Most important symptoms and effects, both acute and delayed

Symptoms

Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death.

Skin irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blisters.

No specific hazards under normal use conditions.

Eye irritation signs and symptoms may include a burning sen-

sation, redness, swelling, and/or blurred vision.

If material enters lungs, signs and symptoms may include

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coughing, choking, wheezing, difficulty in breathing, chest

congestion, shortness of breath, and/or fever.

If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Call a doctor or poison control center for guidance.

Potential for chemical pneumonitis.

Treat symptomatically.

Causes central nervous system depression.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon diox-

ide, sand or earth may be used for small fires only.

Unsuitable extinguishing

media

Do not use water in a jet.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-

fighting

Clear fire area of all non-emergency personnel. Hazardous combustion products may include:

A complex mixture of airborne solid and liquid particulates and

gases (smoke). Carbon monoxide.

Unidentified organic and inorganic compounds.

Flammable vapours may be present even at temperatures

below the flash point.

The vapour is heavier than air, spreads along the ground and

distant ignition is possible.

Will float and can be reignited on surface water.

5.3 Advice for firefighters

Special protective equipment :

for firefighters

Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to

relevant Standards (e.g. Europe: EN469).

Specific extinguishing meth-

ods

Standard procedure for chemical fires.

Further information : Keep adjacent containers cool by spraying with water.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Observe all relevant local and international regulations.

Notify authorities if any exposure to the general public or the

environment occurs or is likely to occur.

Local authorities should be advised if significant spillages

cannot be contained.

6.1.1 For non emergency personnel: Avoid contact with skin, eyes and clothing.

Isolate hazard area and deny entry to unnecessary or unpro-

tected personnel.

Do not breathe fumes, vapour. Do not operate electrical equipment. 6.1.2 For emergency responders:

Avoid contact with skin, eyes and clothing.

Isolate hazard area and deny entry to unnecessary or unpro-

tected personnel.

Do not breathe fumes, vapour. Do not operate electrical equipment.

6.2 Environmental precautions

Environmental precautions

Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (appreciate and provided appreciate appreciate and provided appreciate appreciate and provided a

ing and grounding (earthing) all equipment. Monitor area with combustible gas indicator.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up

For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove

contaminated soil and dispose of safely.

For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely

Ventilate contaminated area thoroughly.

If contamination of site occurs remediation may require spe-

cialist advice.

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6.4 Reference to other sections

For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet., For guidance on disposal of spilled material see Section 13 of this Safety Data Sheet.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures : Avoid breathing of or direct contact with material. Only use in

well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see

Section 8 of this Safety Data Sheet.

Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this

material.

Ensure that all local regulations regarding handling and stor-

age facilities are followed.

Advice on safe handling : Avoid inhaling vapour and/or mists.

Avoid contact with skin, eyes and clothing.

Extinguish any naked flames. Do not smoke. Remove ignition

sources. Avoid sparks.

Use local exhaust ventilation if there is risk of inhalation of

vapours, mists or aerosols.

Bulk storage tanks should be diked (bunded).

When using do not eat or drink.

The vapour is heavier than air, spreads along the ground and

distant ignition is possible.

Product Transfer : Even with proper grounding and bonding, this material can still

accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur. Be aware of handling operations that may give rise to additional hazards that result from the accumulation of static charges. These include but are not limited to pumping (especially turbulent flow), mixing, filtering, splash filling, cleaning and filling of tanks and containers, sampling, switch loading, gauging, vacuum truck operations, and mechanical movements. These activities may lead to static discharge e.g. spark formation. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (≤ 1 m/s until fill pipe submerged to twice its diameter, then ≤ 7 m/s). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations.

Refer to guidance under Handling section.

Hygiene measures : Wash hands before eating, drinking, smoking and using the

toilet. Launder contaminated clothing before re-use. Do not ingest. If swallowed, then seek immediate medical assistance.

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7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

Refer to section 15 for any additional specific legislation cov-

ering the packaging and storage of this product.

Further information on stor-

age stability

Storage Temperature:

Ambient.

Bulk storage tanks should be diked (bunded).

Locate tanks away from heat and other sources of ignition. Cleaning, inspection and maintenance of storage tanks is a specialist operation, which requires the implementation of

strict procedures and precautions.

Must be stored in a diked (bunded) well- ventilated area, away from sunlight, ignition sources and other sources of heat. Keep away from aerosols, flammables, oxidizing agents, corrosives and from other flammable products which are not

harmful or toxic to man or to the environment.

Electrostatic charges will be generated during pumping. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment to reduce the risk.

The vapours in the head space of the storage vessel may lie in the flammable/explosive range and hence may be flamma-

Suitable material: For containers, or container linings use mild Packaging material

steel, stainless steel., For container paints, use epoxy paint,

zinc silicate paint.

Unsuitable material: Avoid prolonged contact with natural,

butyl or nitrile rubbers.

Container Advice : Do not cut, drill, grind, weld or perform similar operations on or

near containers.

7.3 Specific end use(s)

Specific use(s) Please refer to section 16 and/or the annexes for the regis-

tered uses under REACH.

See additional references that provide safe handling practices for liquids that are determined to be static accumulators: American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practices

on Static Electricity).

IEC/TS 60079-32-1: Electrostatic hazards, guidance

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

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Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Isohexanes	Not As- signed	TWA	900 mg/m3	EU HSPA
pentane	109-66-0	MV	1.000 ppm 3.000 mg/m3	SI OEL
pentane		KTV	2.000 ppm 6.000 mg/m3	SI OEL
pentane		TWA	1.000 ppm 3.000 mg/m3	2006/15/EC
	Further inform	Further information: Indicative		
n-Hexane	110-54-3	MV	20 ppm 72 mg/m3	SIOEL
	Further information: Toxic for reproduction - may cause harm to the unborn child - category 2			
n-Hexane		KTV	160 ppm 576 mg/m3	SI OEL
	Further information: Toxic for reproduction - may cause harm to the unborn child - category 2			
n-Hexane		TWA	20 ppm 72 mg/m3	2006/15/EC
	Further inform	nation: Indicative	-	

Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
n-Hexane	110-54-3	2,5-hexandion and 4,5-dihydroxy-2- hexanone: 5 mg/l (Urine)	End of shift	SI BAT

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
Hydrocarbons, C6, isoalkanes, <5% n-hexane	Workers	Dermal	Long-term systemic effects	13964 mg/kg
Hydrocarbons, C6, isoalkanes, <5% n-hexane	Workers	Inhalation	Long-term systemic effects	5306 mg/m3
Hydrocarbons, C6, isoalkanes, <5% n-hexane	Consumers	Dermal	Long-term systemic effects	1377 mg/kg
Hydrocarbons, C6, isoalkanes, <5% n-hexane	Consumers	Inhalation	Long-term systemic effects	1131 mg/m3
Hydrocarbons, C6, isoalkanes, <5% n-hexane	Consumers	Oral	Long-term systemic effects	1301 mg/kg
pentane	Workers	Dermal	Long-term systemic effects	432 mg/kg bw/day
pentane	Workers	Inhalation	Long-term systemic effects	3000 mg/m3

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pentane	Consumers	Dermal	Long-term systemic effects	214 mg/kg bw/day
pentane	Consumers	Inhalation	Long-term systemic effects	643 mg/m3
pentane	Consumers	Oral	Long-term systemic effects	214 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
pentane	Water	0,23 mg/l
pentane	Sediment	1,2 mg/kg
pentane	Soil	0,55 mg/kg wet
		weight
pentane	Sewage treatment plant	3,6 mg/l

8.2 Exposure controls

Engineering measures

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex. Use sealed systems as far as possible.

Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.

Local exhaust ventilation is recommended.

Eye washes and showers for emergency use.

Firewater monitors and deluge systems are recommended.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:

General Information:

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or for subsequent recycle.

Personal protective equipment

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex. The provided information is made in consideration of the PPE directive (Council Directive 89/686/EEC) and the CEN European Committee for Standardisation (CEN) standards.

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Eye protection : Wear goggles for use against liquids and gas.

Approved to EU Standard EN166.

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If a local risk assessment deems it so then chemical splash goggles may not be required and safety glasses may provide adequate eye protection.

Hand protection

Remarks

Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. Longer term protection: Viton. Incidental contact/Splash protection: Nitrile rubber. PVC. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For shortterm/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

Skin and body protection

Chemical resistant gloves/gauntlets, boots, and apron.

Protective clothing approved to EU Standard EN14605.

Respiratory protection

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.

Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.

If air-filtering respirators are suitable for conditions of use: Select a filter suitable for organic gases and vapours [Type AX boiling point < 65°C (149°F)] meeting EN14387.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state Liquid.

Colour colourless

Odour Paraffinic

Odour Threshold Data not available

Typical -150 °C pour point

Melting point/range Data not available

Boiling point/boiling range Typical 44 - 62 °C

Flammability

Flammability (solid, gas) Data not available

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit / upper flammability limit 7,5 %(V)

Lower explosion limit /

Lower flammability limit

1,1 %(V)

Flash point Typical -43 °C

Method: IP 170

392 °C Auto-ignition temperature

Decomposition temperature

Decomposition tempera-

ture

Data not available

рΗ Not applicable

Viscosity

Viscosity, dynamic Data not available

Viscosity, kinematic Typical 0,41 mm2/s (25 °C)

Method: ASTM D445

Typical 0,57 mm2/s (0 °C) Method: ASTM D445

Solubility(ies)

Water solubility insoluble

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Partition coefficient: n-

octanol/water

: log Pow: 1,1 - 7,5

Vapour pressure : 16 kPa (0 °C)

33 kPa (20 °C)

115 kPa (50 °C)

Relative density : Data not available

Density : Typical 658 kg/m3 (15 °C)

Method: ASTM D4052

Relative vapour density : 3

Particle characteristics

Particle size : Data not available

9.2 Other information

Explosives : In use may form flammable/explosive vapour-air mixture.

Oxidizing properties : Not applicable

Evaporation rate : 9,6

Method: ASTM D 3539, nBuAc=1

1

Method: DIN 53170, di-ethyl ether=1

Conductivity : < 0,09 pS/m at 20 °C

Method: ASTM D-4308 Low conductivity: < 100 pS/m

The conductivity of this material makes it a static accumulator., A liquid is typically considered nonconductive if its con-

ductivity is below 100 pS/m and is considered semi-

conductive if its conductivity is below 10,000 pS/m., A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the

conductivity of a liquid

Surface tension : Typical 16,8 mN/m, 20 °C, ASTM D-971

Molecular weight : 82 g/mol

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SECTION 10: Stability and reactivity

10.1 Reactivity

The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.

10.2 Chemical stability

No hazardous reaction is expected when handled and stored according to provisions Stable under normal conditions of use.

10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with strong oxidising agents.

10.4 Conditions to avoid

Conditions to avoid : Avoid heat, sparks, open flames and other ignition sources.

In certain circumstances product can ignite due to static elec-

tricity.

10.5 Incompatible materials

Materials to avoid : Strong oxidising agents.

10.6 Hazardous decomposition products

Hazardous decomposition products are not expected to form during normal storage.

Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Information on likely routes of : Exposure may occur via inhalation, ingestion, skin absorption,

exposure skin or eye contact, and accidental ingestion.

Acute toxicity

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Acute oral toxicity : LD 50 (Rat): > 5.000 mg/kg

Remarks: Low toxicity

Based on available data, the classification criteria are not met.

Acute inhalation toxicity : LC 50 (Rat): > 20 mg/l

Remarks: Low toxicity by inhalation.

Based on available data, the classification criteria are not met.

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Acute dermal toxicity : LD 50 (Rabbit): 2.000 mg/kg

Remarks: Low toxicity

Based on available data, the classification criteria are not met.

pentane:

Acute oral toxicity : LD50 (Rat, male and female): > 5.000 mg/kg

Method: OECD Test Guideline 401

Remarks: Based on available data, the classification criteria

are not met.

Acute inhalation toxicity : LC50 (Rat, male and female): > 20 mg/l

Exposure time: 4 h
Test atmosphere: vapour

Method: OECD Test Guideline 403

Remarks: Based on available data, the classification criteria

are not met.

Skin corrosion/irritation

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Remarks : Causes skin irritation.

pentane:

Species : Rabbit

Method : Test(s) equivalent or similar to OECD Test Guideline 404

Remarks : Slightly irritating to skin. Insufficient to classify.

Serious eye damage/eye irritation

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Remarks : Not irritating to eye.

pentane:

Species : Rabbit

Method : OECD Test Guideline 405

Remarks : Slightly irritating.

Insufficient to classify.

Respiratory or skin sensitisation

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Remarks : Not a sensitiser.

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Based on available data, the classification criteria are not met.

pentane:

Species : Guinea pig

Method : OECD Test Guideline 406

Remarks : Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Genotoxicity in vivo : Remarks: Not mutagenic.

Germ cell mutagenicity- As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

pentane:

Genotoxicity in vitro : Method: Test(s) equivalent or similar to OECD Guideline 471

Remarks: Based on available data, the classification criteria

are not met.

Method: Directive 67/548/EEC, Annex V, B.10.

Remarks: Based on available data, the classification criteria

are not met.

Genotoxicity in vivo : Species: Rat

Method: Directive 67/548/EEC, Annex V, B.12.

Remarks: Based on available data, the classification criteria

are not met.

Germ cell mutagenicity- As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

Carcinogenicity

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Remarks : Tumours produced in animals are not considered relevant to

humans.

Not a carcinogen.

Based on available data, the classification criteria are not met.

Carcinogenicity - Assess-

ment

This product does not meet the criteria for classification in

categories 1A/1B.

pentane:

Carcinogenicity - Assess-

ment

: This product does not meet the criteria for classification in

categories 1A/1B.

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Material	GHS/CLP Carcinogenicity Classification
Hydrocarbons, C6, isoal-kanes, <5% n-hexane	No carcinogenicity classification.
pentane	No carcinogenicity classification.
n-Hexane	No carcinogenicity classification.

Reproductive toxicity

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Effects on fertility

Remarks: Not a developmental toxicant., Does not impair

fertility.

Reproductive toxicity - As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

pentane:

Effects on fertility : Species: Rat

Sex: male and female Application Route: Inhalation

Method: Equivalent or similar to OECD Test Guideline 416 Remarks: Based on available data, the classification criteria

are not met.

Reproductive toxicity - As-

sessment

: This product does not meet the criteria for classification in

categories 1A/1B.

STOT - single exposure

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Remarks : May cause drowsiness or dizziness.

pentane:

Exposure routes : Inhalation

Target Organs : Central nervous system

Remarks : May cause drowsiness or dizziness.

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STOT - repeated exposure

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Remarks : Based on available data, the classification criteria are not met.

pentane:

Remarks : Based on available data, the classification criteria are not met.

Repeated dose toxicity

Components:

pentane:

Species : Rat, male and female

Application Route : Inhalation Test atmosphere : Gas

Method : OECD Test Guideline 413
Target Organs : No specific target organs noted

Aspiration toxicity

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

pentane:

Aspiration into the lungs when swallowed or vomited may cause chemical pneumonitis which can be fatal.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components consid-

ered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at

levels of 0.1% or higher.

Further information

Product:

Remarks : Unless indicated otherwise, the data presented is representa-

tive of the product as a whole, rather than for individual com-

ponent(s).

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Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Remarks : Exposure to very high concentrations of similar materials has

been associated with irregular heart rhythms and cardiac ar-

rest.

Remarks : Classifications by other authorities under varying regulatory

frameworks may exist.

pentane:

Remarks : Classifications by other authorities under varying regulatory

frameworks may exist.

SECTION 12: Ecological information

12.1 Toxicity

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Toxicity to fish : Remarks: Data not available

Toxicity to daphnia and other :

aquatic invertebrates

Remarks: $LL/EL/IL50 > 1 \le 10 \text{ mg/l}$

Toxicity to algae/aquatic plants : Remarks: Toxic

LC/EC/IC50 > 10 - <=100 mg/l

Toxicity to microorganisms

Remarks: Data not available

Toxicity to fish (Chronic tox-

icity)

Remarks: Data not available

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

Remarks: Data not available

pentane:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 4,26 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Remarks: Toxic

 $LL/EL/IL50 > 1 \le 10 \text{ mg/l}$

Toxicity to daphnia and other :

aquatic invertebrates

EC50 (Daphnia magna (Water flea)): 2,7 mg/l

Exposure time: 48 h

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Method: Test(s) equivalent or similar to OECD Guideline 202

Remarks: Toxic

 $LL/EL/IL50 > 1 \le 10 \text{ mg/l}$

Toxicity to algae/aquatic plants : EC50 (Scenedesmus capricornutum (fresh water algae)): 10,7

ma/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Remarks: Harmful

LL/EL/IL50 > 10 <= 100 mg/l

Toxicity to microorganisms : NOEL (Tetrahymena pyriformis): 23,7 mg/l

Exposure time: 48 h

Method: Based on quantitative structure-activity relationship

(QSAR) modelling

Remarks: NOEC/NOEL >100 mg/l

Toxicity to fish (Chronic tox-

icity)

NOELR: 6,165 mg/l

Exposure time: 28 d

Species: Oncorhynchus mykiss (rainbow trout)

Method: Based on quantitative structure-activity relationship

(QSAR) modelling

Remarks: NOEC/NOEL > 1.0 - <= 10 mg/l

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

NOELR: 10,76 mg/l Exposure time: 21 d

Species: Daphnia magna (Water flea)

Method: Based on quantitative structure-activity relationship

(QSAR) modelling Remarks: no data available

12.2 Persistence and degradability

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Biodegradability : Remarks: Readily biodegradable.

Oxidises rapidly by photo-chemical reactions in air.

pentane:

Biodegradability : Biodegradation: 87 %

Exposure time: 28 d

Method: Test(s) equivalent or similar to OECD Guideline 301

F

Remarks: Readily biodegradable.

Oxidises rapidly by photo-chemical reactions in air.

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12.3 Bioaccumulative potential

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Bioaccumulation : Remarks: Has the potential to bioaccumulate.

pentane:

Bioaccumulation : Species: Pimephales promelas (fathead minnow)

Bioconcentration factor (BCF): 171

Method: Based on quantitative structure-activity relationship

(QSAR) modelling

Remarks: Does not bioaccumulate significantly.

12.4 Mobility in soil

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Mobility : Remarks: Floats on water., If it enters soil, it will adsorb to soil

particles and will not be mobile.

pentane:

Mobility : Remarks: Floats on water., If the product enters soil, one or

more constituents will or may be mobile and may contaminate

groundwater.

12.5 Results of PBT and vPvB assessment

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Assessment : The substance does not fulfill all screening criteria for persis-

tence, bioaccumulation and toxicity and hence is not consid-

ered to be PBT or vPvB..

pentane:

Assessment : The substance does not fulfill all screening criteria for persis-

tence, bioaccumulation and toxicity and hence is not consid-

ered to be PBT or vPvB..

12.6 Endocrine disrupting properties

Product:

Assessment : The substance/mixture does not contain components considered to

have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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12.7 Other adverse effects

Product:

Additional ecological infor-

mation

: Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Components:

Hydrocarbons, C6, isoalkanes, <5% n-hexane:

Additional ecological infor-

mation

: Does not have ozone depletion potential.

pentane:

Additional ecological infor-

mation

In view of the high rate of loss from solution, the product is unlikely

to pose a significant hazard to aquatic life.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Recover or recycle if possible.

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.

ods in compliance with applicable regulations.

Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment. Do not dispose into the environment, in drains or in water courses.

Do not dispose of tank water bottoms by allowing them to drain into the ground. This will result in soil and groundwater contamination.

Waste arising from a spillage or tank cleaning should be disposed of in accordance with prevailing regulations, preferably to a recognised collector or contractor. The competence of the collector or contractor should be established beforehand.

Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional,

national, and local laws and regulations.

Local regulations may be more stringent than regional or national requirements and must be complied with.

MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides technical aspects at controlling pollutions from ships.

Contaminated packaging :

Drain container thoroughly.

After draining, vent in a safe place away from sparks and fire. Residues may cause an explosion hazard. Do not puncture,

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cut or weld uncleaned drums.

Send to drum recoverer or metal reclaimer.

Comply with any local recovery or waste disposal regulations.

SECTION 14: Transport information

14.1 UN number or ID number

ADR : 1268 RID : 1268 IMDG : 1268 IATA : 1268

14.2 UN proper shipping name

ADR : PETROLEUM DISTILLATES, N.O.S.

RID : PETROLEUM DISTILLATES, N.O.S.

IMDG : PETROLEUM DISTILLATES, N.O.S.

(NAPHTHA)

IATA : Petroleum distillates, n.o.s.

14.3 Transport hazard class(es)

ADR : 3
RID : 3
IMDG : 3
IATA : 3

14.4 Packing group

ADR

Packing group : II
Classification Code : F1
Hazard Identification Number : 33
Labels : 3

RID

Packing group : II
Classification Code : F1
Hazard Identification Number : 33
Labels : 3

Remarks : SP640CC: Special provision 640C

IMDG

Packing group : II Labels : 3

IATA

Packing group : II

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Labels : 3

14.5 Environmental hazards

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

14.6 Special precautions for user

Remarks : Special Precautions: Refer to Section 7, Handling & Storage,

for special precautions which a user needs to be aware of or

needs to comply with in connection with transport.

14.7 Maritime transport in bulk according to IMO instruments

Pollution category : Not applicable
Ship type : Not applicable
Product name : Not applicable

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

P5c

REACH - List of substances subject to authorisation

(Annex XIV)

: Product is not subject to Authorisa-

tion under REACH.

REACH - Candidate List of Substances of Very High

Concern for Authorisation (Article 59).

: This product does not contain substances of very high concern (Regu-

lation (EC) No 1907/2006 (REACH), Article 57).

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving

dangerous substances.

FLAMMABLE LIQUIDS

E2 ENVIRONMENTAL HAZARDS

Volatile organic compounds : Volatile organic compounds (VOC) content: 100 %

Other regulations:

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

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Product is subject to Law No. 36.2014 regulation amending and supplementing the Regulation on the prevention of major accidents and the reduction of their consequences, based on Seveso III directive (2012/18/EU).

The components of this product are reported in the following inventories:

AIIC : Listed

DSL : Listed

IECSC : Listed

ENCS : Listed

KECI : Listed

NZIoC : Listed

PICCS : Listed

TSCA : Listed

TCSI : Listed

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Full text of H-Statements

EUH066 : Repeated exposure may cause skin dryness or cracking.

H224 : Extremely flammable liquid and vapour. H225 : Highly flammable liquid and vapour.

H304 : May be fatal if swallowed and enters airways.

H315 : Causes skin irritation.

H336 : May cause drowsiness or dizziness. H361f : Suspected of damaging fertility.

H373 : May cause damage to organs through prolonged or repeated

exposure.

H411 : Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Aquatic Chronic : Long-term (chronic) aquatic hazard

Asp. Tox. : Aspiration hazard Flam. Liq. : Flammable liquids Skin Irrit. : Skin irritation

STOT SE : Specific target organ toxicity - single exposure 2006/15/EC : Europe. Indicative occupational exposure limit values EU HSPA : OEL based on European Hydrocarbon Solvents Producers

(CEFIC-HSPA) methodology.

SI BAT : Slovenia. BAT-values

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SI OEL : Slovenia. Chemical agents at work - Appendix 1: Occupational

exposure limits

2006/15/EC / TWA : Limit Value - eight hours

EU HSPA / TWA : Time-Weighted Average Concentration (TWA) (8 hrs.)

SI OEL / MV : Time Weighted Average SI OEL / KTV : Short Term Exposure Limit

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA -European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI -Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Training advice : Provide adequate information, instruction and training for op-

erators.

Other information : For Industry guidance and tools on REACH please visit the

CEFIC website at http://cefic.org/Industry-support.

The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not consid-

ered to be PBT or vPvB.

A vertical bar (|) in the left margin indicates an amendment

from the previous version.

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This product is classified as R66 / EUH066 (Repeated exposure may cause skin dryness or cracking). The risk relates to the potential for repeated or prolonged dermal contact. The risk arising from contact is solely related to the physicochemical properties of the substance. The risk can therefore be controlled by implementing risk management measures tailored to this specific hazard and included within Section 8 of the SDS. An exposure scenario is not presented.

Sources of key data used to compile the Safety Data

Sheet

The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID date base, EC 1272 regulation, etc).

Identified Uses according to the Use Descriptor System

Uses - Worker

Title : Manufacture of substance- Industrial

Uses - Worker

Title : Distribution of substance- Industrial

Uses - Worker

Title : Formulation & (re)packing of substances and mixtures- Indus-

trial

Uses - Worker

Title : Uses in Coatings- Industrial

Uses - Worker

Title : Use in Cleaning Agents- Industrial

Uses - Worker

Title : Use in Cleaning Agents- Professional

Uses - Worker

Title : Use in laboratories- Industrial

Uses - Worker

Title : Use in laboratories- Professional

Identified Uses according to the Use Descriptor System

Uses - Consumer

Title : Use in Cleaning Agents

- Consumer

Uses - Consumer

Title : Other Consumer Uses

- Consumer

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SI / EN

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Exposure Scenario - Worker

30000000830	
OF OTION 4	EVECULES COENTRIC TITLE
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Manufacture of substance- Industrial
Use Descriptor	Sector of Use: SU3, SU8, SU9 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15 Environmental Release Categories: ERC1, ERC4, ESVOC SpERC 1.1.v1
Scope of process	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,	
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios R	isk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
General exposures (closed systems)PROC1PROC2PROC3	No other specific measures identified.
General exposures (open systems)PROC4	No other specific measures identified.
Process samplingPROC8b	No other specific measures identified.
Laboratory activitiesPROC15	No other specific measures identified.

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Bulk transfers(open systems)PROC8b	No other specific measures identified.
Bulk transfers(closed systems)PROC8b	No other specific measures identified.
Equipment cleaning and maintenancePROC8a	No other specific measures identified.
Storage.PROC1PROC2	Store substance within a closed system.

Section 2.2 Control of Environmental Exposure		
Substance is isomeric mixture.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		<u> </u>
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne		1,9E+04
Fraction of Regional tonnage		1
Annual site tonnage (tonnes/	•	1,9E+04
Maximum daily site tonnage		6,5E+04
Frequency and Duration of		
Continuous release.		
Emission Days (days/year):		300
	influenced by risk management	1
Local freshwater dilution fact		10
Local marine water dilution fa		100
	ons affecting Environmental Exposure	
	process (initial release prior to RMM):	5,0E-02
	ter from process (initial release prior to	3,0E-04
RMM):	(
Release fraction to soil from	process (initial release prior to RMM):	1,0E-04
Technical conditions and measures at process level (source) to prevent release		
	ss sites thus conservative process re-	
lease estimates used.		
Technical onsite condition	s and measures to reduce or limit disch	arges, air emis-
sions and releases to soil		
Risk from environmental exp	osure is driven by freshwater sediment.	
	olved substance to or recover from onsite	
wastewater.		
If discharging to domestic se	wage treatment plant, no onsite	
wastewater treatment require		
	a typical removal efficiency of (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide		62,4
the required removal efficien		
	wage treatment plant, no secondary	0
wastewater treatment require		
	o prevent/limit release from site	
Do not apply industrial sludge	e to natural soils.	
Sludge should be incinerated	d, contained or reclaimed.	

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Conditions and Measures related to municipal sewage treatment plant			
Estimated substance removal from wastewater via domestic sewage	96,9		
treatment (%)	,		
Total efficiency of removal from wastewater after onsite and offsite	96,9		
(domestic treatment plant) RMMs (%)			
Maximum allowable site tonnage (MSafe) based on release following	7,9E+05		
total wastewater treatment removal (kg/d)			
Assumed domestic sewage treatment plant flow (m3/d)	1,0E+04		
Conditions and Measures related to external treatment of waste for disposal			
During manufacturing no waste of the substance is generated.			
Conditions and measures related to external recovery of waste			
During manufacturing no waste of the substance is generated.			
_			

SECTION 3 EXPOSURE ESTIMATION		
Section 3.1 - Health		
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise		

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
0444 1114	

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.

Risk Management Measures are based on qualitative risk characterisation.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

Section 4.2 - Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

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Exposure Scenario - Worker

300000000831	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Distribution of substance- Industrial
Use Descriptor	Sector of Use: SU3, SU8, SU9 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15 Environmental Release Categories: ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7, ESVOC SpERC 1.1b.v1
Scope of process	Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure		
Product Characteristics			
Physical form of product	Liquid, vapour pressure > 10 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,		
Frequency and Duration of Use			
Covers daily exposures up to 8 hours (unless stated differently).			
Other Operational Conditions affecting Exposure			
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.			

Contributing Scenarios R	tisk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
General exposures (closed systems)PROC1PROC2PROC3	No other specific measures identified.
General exposures (open systems)PROC4	No other specific measures identified.
Process samplingPROC3	No other specific measures identified.
Laboratory activitiesPROC15	No other specific measures identified.

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Bulk transfers(closed systems)PROC8b	No other specific measures identified.
Bulk transfers(open systems)PROC8b	No other specific measures identified.
Drum and small package fill-ingPROC9	No other specific measures identified.
Equipment cleaning and maintenancePROC8a	No other specific measures identified.
Storage.PROC1PROC2	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixture	9.	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	383
Fraction of Regional tonnage	used locally:	2,0E-03
Annual site tonnage (tonnes/	year):	0,766
Maximum daily site tonnage (kg/day):	38,3
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		20
Environmental factors not i	nfluenced by risk management	
Local freshwater dilution factor	or:	10
Local marine water dilution fa	ctor:	100
Other Operational Condition	ns affecting Environmental Exposure	
	rocess (initial release prior to RMM):	1,0E-03
Release fraction to wastewate	er from process (initial release prior to	1,0E-05
RMM):		
Release fraction to soil from process (initial release prior to RMM):		1,0E-05
	neasures at process level (source) to pr	event release
	ss sites thus conservative process re-	
lease estimates used.		
	s and measures to reduce or limit disch	arges, air emis-
sions and releases to soil		
Risk from environmental expo		
No wastewater treatment req		
	lved substance to or recover from onsite	
wastewater.	- (· ' · · l · · · · · · · · l · (' · ' · · · · · · (' 0) \	00
Treat air emission to provide a typical removal efficiency of (%)		90
Treat onsite wastewater (prior to receiving water discharge) to provide		0
the required removal efficiency of >= (%)		0
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.		U
	o prevent/limit release from site	
Do not apply industrial sludge		
Do not apply industrial sludge	ร เบ กลเนาสา อบกอ.	
Sludge should be incinerated	, contained or reclaimed.	

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Conditions and Measures related to municipal sewage treatment plant		
Estimated substance removal from wastewater via domestic sewage treatment (%)	96,9	
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	96,9	
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1,9E+05	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	
Conditions and Massures related to external treatment of waste for disposal		

Conditions and Measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or regional regulations.

Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

	SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health		
	The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise	

indicated.

Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.

Risk Management Measures are based on qualitative risk characterisation.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 -Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

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Exposure Scenario - Worker

Exposure occitatio - Worke	Exposure Scenario - Worker		
30000000832	00000832		
SECTION 1	EXPOSURE SCENARIO TITLE		
Title	Formulation & (re)packing of substances and mixtures- Industrial		
Use Descriptor	Sector of Use: SU3, SU10 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15 Environmental Release Categories: ERC2, ESVOC SpERC 2.2.v1		
Scope of process	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.		

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure		
Product Characteristics			
Physical form of product	Liquid, vapour pressure > 10 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,		
Frequency and Duration of Use			
Covers daily exposures up to 8 hours (unless stated differently).			
Other Operational Conditions affecting Exposure			
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.			

Contributing Scenarios	Risk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
General exposures (closed systems)PROC1PROC2PROC	No other specific measures identified.
General exposures (open systems)PROC4	No other specific measures identified.
Batch processes at elevated temperaturesOperation is car-	No other specific measures identified.

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ried out at elevated temperature	
(> 20°C above ambient temper-	
ature).PROC3	
Process samplingPROC3	No other specific measures identified.
Laboratory activitiesPROC15	No other specific measures identified.
Bulk transfersPROC8b	No other specific measures identified.
Mixing operations (open systems)PROC5	No other specific measures identified.
ManualTransfer from/pouring from containersNon-dedicated facilityPROC8a	No other specific measures identified.
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.
Production or preparation or articles by tabletting, compression, extrusion or pelletisationPROC14	No other specific measures identified.
Drum and small package fill- ingPROC9	No other specific measures identified.
Equipment cleaning and maintenancePROC8a	No other specific measures identified.
Storage.PROC1PROC2	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure		
Substance is isomeric mixture.			
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonne	s/year):	132	
Fraction of Regional tonnage used locally:		1	
Annual site tonnage (tonnes/year):		132	
Maximum daily site tonnage (kg/day):		1,32E+03	
Frequency and Duration of	Use		
Continuous release.			
Emission Days (days/year):		100	
Environmental factors not i	nfluenced by risk management		
Local freshwater dilution factor	or:	10	
Local marine water dilution fa		100	
Other Operational Conditio	ns affecting Environmental Exposure		
Release fraction to air from p	rocess (initial release prior to RMM):	2,5E-02	
Release fraction to wastewater from process (initial release prior to		2,0E-04	
RMM):			
	process (initial release prior to RMM):	1,0E-04	
Technical conditions and measures at process level (source) to prevent release			
Common practices vary acros lease estimates used.	ss sites thus conservative process re-		

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Risk from environmental exposure is driven by freshwater sediment.	
No wastewater treatment required.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	0
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage treatment (%)	96,9
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	96,9
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	2,37E+05
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste fo	r disposal
External treatment and disposal of waste should comply with applicable regulations.	local and/or regiona
Conditions and measures related to external recovery of waste	
	local and/or regiona

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1 - Health	•	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management		
Measures/Operational Conditions outlined in Section 2 are implemented.		
Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.		
Risk Management Measures are based on qualitative risk characterisation.		

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Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 - Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

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Exposure Scenario - Worker

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SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in Coatings- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15 Environmental Release Categories: ERC4, ESVOC SpERC 4.3a.v1
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure		
Product Characteristics			
Physical form of product	Liquid, vapour pressure > 10 kPa at STP		
Concentration of the Sub-	Covers percentage substance in the product up to 100%.,		
stance in Mixture/Article	Unless stated otherwise.,		
Frequency and Duration of Use			
Covers daily exposures up to 8 hours (unless stated differently).			
Other Operational Conditions affecting Exposure			
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.			

Contributing Scenarios	Risk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
General exposures (closed	No other specific measures identified.

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systems)PROC1	
General exposures (closed	No other specific measures identified.
	Tivo otrier specific measures identified.
systems) with sample col-	
lectionUse in contained	
systemsPROC2	No all accounts and a second s
Film formation - force dry-	No other specific measures identified.
ing, stoving and other tech-	
nologies.(closed sys-	
tems)Operation is carried	
out at elevated temperature	
(> 20°C above ambient	
temperature).PROC2	
Mixing operations (closed	No other specific measures identified.
systems)Use in contained	
batch processesPROC3	
Film formation - air dry-	No other specific measures identified.
ingPROC4	
Preparation of material for	No other specific measures identified.
applicationMixing opera-	
tions (open sys-	
tems)PROC5	
Spraying (automat-	No other specific measures identified.
ic/robotic)PROC7	
ManualSprayingPROC7	No other specific measures identified.
Material transfersNon-	No other specific measures identified.
dedicated facilityPROC8a	
Material transfersDedicated	No other specific measures identified.
facilityPROC8b	
Roller, spreader, flow appli-	No other specific measures identified.
cationPROC10	No other constitution and the constitution of
Dipping, immersion and	No other specific measures identified.
pouringPROC13	No other conditions are set to con-
Laboratory activi-	No other specific measures identified.
tiesPROC15	
Material trans-	No other specific measures identified.
fersDrum/batch transfer-	
sTransfer from/pouring from	
containersPROC9	No. of the control of
Production or preparation	No other specific measures identified.
or articles by tabletting,	
compression, extrusion or	
pelletisationPROC14	
Equipment cleaning and	No other specific measures identified.
maintenanceTransfer of	
substance or preparation	
(charging/ discharging)	
from/ to vessels/ large con-	
tainers at dedicated facili-	
ties	
Storage.Use in closed pro-	Store substance within a closed system.
cess, no likelihood of expo-	

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sureUse in closed, continuous process with occasional controlled exposure

Substance is isometic mixture	Section 2.2 Control of Environmental Exposure Substance is isomeric mixture.			
Predominantly hydrophobic.				
Readily biodegradable.				
Amounts Used				
Fraction of EU tonnage used	in region:	0,1		
Regional use tonnage (tonne		1,49E+03		
Fraction of Regional tonnage		1,496+03		
Annual site tonnage (tonnes/		1,49E+03		
Maximum daily site tonnage (1,49E+04		
		1,490+04		
Frequency and Duration of Continuous release.	USe	1		
		100		
Emission Days (days/year):	uflicenced by wink management	100		
	nfluenced by risk management	10		
Local freshwater dilution factor		10		
Local marine water dilution fa		100		
	ns affecting Environmental Exposure	0.00		
•	rocess (initial release prior to RMM):	0,98		
RMM):	er from process (initial release prior to	7,0E-04		
Release fraction to soil from p	process (initial release prior to RMM):	0		
Technical conditions and m	neasures at process level (source) to pro	event release		
Common practices vary acros	ss sites thus conservative process re-			
lease estimates used.				
Technical onsite conditions sions and releases to soil	s and measures to reduce or limit discha	arges, air emis-		
	osure is driven by freshwater sediment.			
No wastewater treatment requ				
	lved substance to or recover from onsite			
wastewater.				
	a typical removal efficiency of (%)	90		
	r to receiving water discharge) to provide	86,0		
the required removal efficiency				
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.		0		
Organisational measures to prevent/limit release from site				
Do not apply industrial sludge to natural soils.				
Sludge should be incinerated, contained or reclaimed.				
Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage 96,9				
treatment (%)	_	96,9		
Total efficiency of removal fro (domestic treatment plant) RN	m wastewater after onsite and offsite MMs (%)	96,9		
	age (MSafe) based on release following	6,78E+04		

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Assumed domestic sewage treatment plant flow (m3/d) 2,0E+0

Conditions and Measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or regional regulations.

Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.

Risk Management Measures are based on qualitative risk characterisation.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 - Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

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Exposure Scenario - Worker

Exposure Scenario - Worker	
30000000835	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Cleaning Agents- Industrial
Use Descriptor	Sector of Use: SU3
	Process Categories: PROC1, PROC2, PROC3, PROC4,
	PROC7, PROC8a, PROC8b, PROC10, PROC13
	Environmental Release Categories: ERC4, ESVOC SpERC
	4.4a.v1
Scope of process	Covers the use as a component of cleaning products includ-
	ing transfer from storage, pouring/unloading from drums or
	containers. Exposures during mixing/diluting in the preparato-
	ry phase and cleaning activities (including spraying, brushing,
	dipping, wiping, automated and by hand), related equipment
	cleaning and maintenance.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
SECTION 2	OPERATIONAL CONDITIONS AND KISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,	
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Risk Management Measures	
General measures (skin irritar	as for indirect skin contact. Wear gloves (tested to EN374 if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin containation immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.	4) a- im- -
Bulk transfersPROC8a	No other specific measures identified.	

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_	
Automated process with (semi)	No other specific measures identified.
closed systems.Use in contained	
systemsPROC2	
Automated process with (semi) closed systems.Drum/batch trans-	No other specific measures identified.
fersUse in contained batch pro-	
cessesPROC3	
Filling/ preparation of equipment	No other specific measures identified.
from drums or contain-	
ers.PROC8b	
Use in contained batch process-	No other specific measures identified.
esPROC4	
Degreasing small objects in	No other specific measures identified.
cleaning stationPROC13	
Cleaning with low-pressure washersPROC7	No other specific measures identified.
Cleaning with high pressure washersPROC7	No other specific measures identified.
ManualSurfacesCleaningPROC10	No other specific measures identified.
Storage.PROC1	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure		
Substance is isomeric mixture	Substance is isomeric mixture.		
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonne	s/year):	108	
Fraction of Regional tonnage		0,93	
Annual site tonnage (tonnes/	year):	100	
Maximum daily site tonnage		5,0E+03	
Frequency and Duration of	Use		
Continuous release.			
Emission Days (days/year):		20	
	nfluenced by risk management		
Local freshwater dilution factor		10	
Local marine water dilution factor:		100	
•	ns affecting Environmental Exposure		
	rocess (initial release prior to RMM):	1,0	
Release fraction to wastewater from process (initial release prior to RMM):		3,0E-06	
Release fraction to soil from process (initial release prior to RMM):		0	
Technical conditions and measures at process level (source) to prevent release			
Common practices vary across sites thus conservative process re-			
lease estimates used.			
Technical onsite conditions and measures to reduce or limit discharges, air emis-			
sions and releases to soil			
	osure is driven by freshwater sediment.		
No wastewater treatment req	uired.		

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Prevent discharge of undissolved substance to or recover from onsite			
wastewater.			
Treat air emission to provide a typical removal efficiency of (%)	70		
Treat onsite wastewater (prior to receiving water discharge) to provide	0		
the required removal efficiency of >= (%)			
If discharging to domestic sewage treatment plant, no secondary	0,0		
wastewater treatment required.			
Organisational measures to prevent/limit release from site			
Do not apply industrial sludge to natural soils.			
Sludge should be incinerated, contained or reclaimed.			
Conditions and Measures related to municipal sewage treatment p			
Estimated substance removal from wastewater via domestic sewage	96,9		
treatment (%)			
Total efficiency of removal from wastewater after onsite and offsite	96,9		
(domestic treatment plant) RMMs (%)			
Maximum allowable site tonnage (MSafe) based on release following	1,58E+07		
total wastewater treatment removal (kg/d)			
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03		
Conditions and Measures related to external treatment of waste for disposal			
External treatment and disposal of waste should comply with applicable local and/or regional			
regulations.			
Conditions and measures related to external recovery of waste			
External recovery and recycling of waste should comply with applicable local and/or regional			
regulations.			

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise		

indicated.

Section 3.2 -Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1 - Health		
Measures/Operational Condi Available hazard data do not Risk Management Measures Where other Risk Manageme	expected to exceed the DN(M)EL when the Risk Management tions outlined in Section 2 are implemented. enable the derivation of a DNEL for dermal irritant effects. are based on qualitative risk characterisation. ent Measures/Operational Conditions are adopted, then users managed to at least equivalent levels.	

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Section 4.2 - Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

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Exposure Scenario - Worker

Exposure Scenario - worker		
30000000836		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Use in Cleaning Agents- Professional	
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.4b.v1	
Scope of process	Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand).	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure		
Product Characteristics			
Physical form of product	Liquid, vapour pressure > 10 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,		
Frequency and Duration of Use			
Covers daily exposures up to 8 hours (unless stated differently).			
Other Operational Conditions affecting Exposure			
	an 20°C above ambient temperature (unless stated differently). dard of occupational hygiene is implemented.		

Contributing Scenarios	Risk Management Measures	
General measures (skin irritar	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up cortamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin prolems that may develop. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.	ng ob-
Filling/ preparation of equipmers from drums or containers.PROC8b	ent No other specific measures identified.	

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Automated process with (semi) closed systems. Use in contained systems PROC2	No other specific measures identified.
Automated process with (semi) closed systems.Drum/batch transfersUse in contained systemsPROC3	No other specific measures identified.
Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance prod- ucts)PROC4	No other specific measures identified.
Filling/ preparation of equipment from drums or containers.PROC8a	No other specific measures identified.
ManualSurfacesCleaningDipping, immersion and pouringPROC13	No other specific measures identified.
Cleaning with low-pressure washersRolling, Brushingno sprayingPROC10	No other specific measures identified.
Cleaning with high pressure washersSprayingIndoorPROC11	No other specific measures identified.
Cleaning with high pressure washersSprayingOutdoorPROC11	No other specific measures identified.
ManualSurfacesCleaningPROC10	No other specific measures identified.
Ad hoc manual application via trigger sprays, dipping, etc.Rolling, BrushingPROC10	No other specific measures identified.
Application of cleaning products in closed systemsOutdoorPROC4	No other specific measures identified.
Cleaning of medical devicesPROC4	No other specific measures identified.
Storage.Use in closed process, no likelihood of exposure	Store substance within a closed system.

Section 2.2 Control of Environmental Exposure			
Substance is isomeric mixture	Substance is isomeric mixture.		
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used in region:		0,1	
Regional use tonnage (tonnes/year):		1,2	
Fraction of Regional tonnage used locally:		5,0E-04	
Annual site tonnage (tonnes/year):		6,0E-04	
Maximum daily site tonnage (kg/day):		1,64E-03	
Frequency and Duration of Use			
Continuous release.			
Emission Days (days/year):		365	
Environmental factors not influenced by risk management			
Local freshwater dilution factor:		10	
Local marine water dilution factor:		100	

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Other Operational Conditions affecting Environmental Exposure	T
Release fraction to air from wide dispersive use (regional only):	2,0E-02
Release fraction to wastewater from wide dispersive use:	1,0E-06
Release fraction to soil from wide dispersive use (regional only):	0
Technical conditions and measures at process level (source) to pro	event release
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit dischasions and releases to soil	arges, air emis-
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	0
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage treatment (%)	96,9
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	96,9
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	8,46
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste for	r disposal
External treatment and disposal of waste should comply with applicable regulations.	local and/or regiona
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable regulations.	local and/or regiona

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

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Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.

Risk Management Measures are based on qualitative risk characterisation.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 - Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

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Exposure Scenario - Worker

Exposure oceriano - worker	
30000000862	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in laboratories- Industrial
Use Descriptor	Sector of Use: SU3
-	Process Categories: PROC10, PROC15
	Environmental Release Categories: ERC2, ERC4
Scope of process	Use of the substance within laboratory settings, including material transfers and equipment cleaning.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,	
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Risk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
Laboratory activitiesPROC15	No other specific measures identified.
CleaningPROC10	No other specific measures identified.

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixture	Substance is isomeric mixture.	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonnes	s/year):	3,5

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Fraction of Regional tonnage used locally:	0,57	
Annual site tonnage (tonnes/year):	2,0	
Maximum daily site tonnage (kg/day):	100	
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year): 20		
Environmental factors not influenced by risk management		
Local freshwater dilution factor:	10	
Local marine water dilution factor:	100	
Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from process (initial release prior to RMM):	2,5E-02	
Release fraction to wastewater from process (initial release prior to RMM):	2,0E-02	
Release fraction to soil from process (initial release prior to RMM):	1,0E-04	
Technical conditions and measures at process level (source) to pro		
Common practices vary across sites thus conservative process release estimates used.		
Technical onsite conditions and measures to reduce or limit dischasions and releases to soil	arges, air emis-	
Risk from environmental exposure is driven by freshwater sediment.		
No wastewater treatment required.		
Prevent discharge of undissolved substance to or recover from onsite wastewater.		
Treat air emission to provide a typical removal efficiency of (%)	0	
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	27,2	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0,0	
Organisational measures to prevent/limit release from site		
Do not apply industrial sludge to natural soils.		
Sludge should be incinerated, contained or reclaimed.		
Conditions and Measures related to municipal sewage treatment p	lant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	96,9	
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	96,9	
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	2,37E+03	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	
Conditions and Measures related to external treatment of waste for		
External treatment and disposal of waste should comply with applicable regulations.		
Conditions and measures related to external recovery of waste		
External recovery and recycling of waste should comply with applicable regulations.	local and/or regional	

SECTION 3	EXPOSURE ESTIMATION
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Section 3.1 - Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.

Risk Management Measures are based on qualitative risk characterisation.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 - Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

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Exposure Scenario - Worker

Exposure oceriano - Worker	
30000000863	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in laboratories- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC10, PROC15 Environmental Release Categories: ERC8a, ESVOC SpERC 8.17.v1
Scope of process	Use of small quantities within laboratory settings, including material transfers and equipment cleaning.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Worker Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure > 10 kPa at STP
Concentration of the Sub-	Covers percentage substance in the product up to 100%.,
stance in Mixture/Article	Unless stated otherwise.,
Frequency and Duration of	Use
Covers daily exposures up to	o 8 hours (unless stated differently).
Other Operational Condition	ons affecting Exposure
	an 20°C above ambient temperature (unless stated differently). dard of occupational hygiene is implemented.

Contributing Scenarios	Risk Management Measures
General measures (skin irritants).	Avoid direct skin contact with product. Identify potential areas for indirect skin contact. Wear gloves (tested to EN374) if hand contact with substance likely. Clean up contamination/spills as soon as they occur. Wash off any skin contamination immediately. Provide basic employee training to prevent / minimise exposures and to report any skin problems that may develop.
Laboratory activitiesPROC15	No other specific measures identified.
CleaningPROC10	No other specific measures identified.

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixture) .	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1

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Regional use tonnage (tonnes/year):	1,5
Fraction of Regional tonnage used locally:	5,0E-04
Annual site tonnage (tonnes/year):	7,5E-04
Maximum daily site tonnage (kg/day):	2,05E-03
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from wide dispersive use (regional only):	0,5
Release fraction to wastewater from wide dispersive use:	0,5
Release fraction to soil from wide dispersive use (regional only):	0
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	J ,
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	96,9
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	96,9
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	9,64
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste fo	•
External treatment and disposal of waste should comply with applicable	local and/or regional
regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	
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SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA tool has b	peen used to estimate workplace exposures unless otherwise

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indicated.

Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Available hazard data do not enable the derivation of a DNEL for dermal irritant effects.

Risk Management Measures are based on qualitative risk characterisation.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 - Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

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Exposure Scenario - Consumer

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SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Cleaning Agents - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: PC3, PC4, PC8 (excipient only), PC9a, PC24, PC35, PC38 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.4c.v1
Scope of process	Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
	MEASURES

Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 Pa at STP	,
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 100 %	
Amounts Used		
Unless stated otherwise.		
covers amount up to (g):		13.800
covers skin contact area (cm	n2):	857,5
Frequency and Duration of	f Use	
Unless stated otherwise.		
covers use up to (times/day	of use):	4
Covers use up to (hours/eve	nt):	8
Other Operational Condition	ons affecting Exposure	
Unless stated otherwise. Covers use at ambient temp Covers use in room size of 2 Covers use under typical ho	20m3	

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Air care products Air care, instant action (aerosol sprays).	Covers concentrations up to 50 %
	covers use up to 365 day/year
	covers use up to 4 times/day of use
	For each use event, covers amount up to 0,1 g

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	Covers use under typical household ventilation.
_	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,25 hours/event
Air care and dusta Air care	
Air care products Air care, instant action (aerosol sprays). pesticides (excipient only).	Covers concentrations up to 50 %
	covers use up to 365 day/year
	Covers use up to 4 times/day of use
	For each use event, covers amount up to 5 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,25 hours/event
Air care products Air care, continuous action (solid and liquid).	Covers concentrations up to 10 %
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,70 cm2
	For each use event, covers amount up to 0,48 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 8,00 hours/event
Air care products Air care,	Covers concentrations up to 50 %
continuous action (solid and liquid). pesticides (excipient only).	
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,70 cm2
	For each use event, covers amount up to 0,48 g
	Covers use under typical household ventilation.
	1 Oovers ase anaer typical neascribia verillation.
	Covers use in room size of 20 m3
	Covers use in room size of 20 m3
Anti-Freeze and de-icing products Washing car window.	Covers use in room size of 20 m3 for each use event Covers exposure up to 8,00 hours/event Covers concentrations up to 1 %
products Washing car win-	Covers use in room size of 20 m3 for each use event Covers exposure up to 8,00 hours/event Covers concentrations up to 1 %
products Washing car win-	Covers use in room size of 20 m3 for each use event Covers exposure up to 8,00 hours/event Covers concentrations up to 1 % covers use up to 365 day/year
products Washing car win-	Covers use in room size of 20 m3 for each use event Covers exposure up to 8,00 hours/event Covers concentrations up to 1 % covers use up to 365 day/year Covers use up to 1 times/day of use
products Washing car win-	Covers use in room size of 20 m3 for each use event Covers exposure up to 8,00 hours/event Covers concentrations up to 1 % covers use up to 365 day/year Covers use up to 1 times/day of use For each use event, covers amount up to 0,5 g
products Washing car win-	Covers use in room size of 20 m3 for each use event Covers exposure up to 8,00 hours/event Covers concentrations up to 1 % covers use up to 365 day/year Covers use up to 1 times/day of use
products Washing car win-	Covers use in room size of 20 m3 for each use event Covers exposure up to 8,00 hours/event Covers concentrations up to 1 % covers use up to 365 day/year Covers use up to 1 times/day of use For each use event, covers amount up to 0,5 g Covers use in a one car garage (34 m3) under typical ventilation.
products Washing car win-	Covers use in room size of 20 m3 for each use event Covers exposure up to 8,00 hours/event Covers concentrations up to 1 % covers use up to 365 day/year Covers use up to 1 times/day of use For each use event, covers amount up to 0,5 g Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3
products Washing car win-	Covers use in room size of 20 m3 for each use event Covers exposure up to 8,00 hours/event Covers concentrations up to 1 % covers use up to 365 day/year Covers use up to 1 times/day of use For each use event, covers amount up to 0,5 g Covers use in a one car garage (34 m3) under typical ventilation.
Anti-Freeze and de-icing products Pouring into radia-	Covers use in room size of 20 m3 for each use event Covers exposure up to 8,00 hours/event Covers concentrations up to 1 % covers use up to 365 day/year Covers use up to 1 times/day of use For each use event, covers amount up to 0,5 g Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3 for each use event Covers exposure up to 0,02 hours/event
Anti-Freeze and de-icing products Pouring into radia-	Covers use in room size of 20 m3 for each use event Covers exposure up to 8,00 hours/event Covers concentrations up to 1 % covers use up to 365 day/year Covers use up to 1 times/day of use For each use event, covers amount up to 0,5 g Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3 for each use event Covers exposure up to 0,02 hours/event Covers concentrations up to 10 % covers use up to 365 day/year
Anti-Freeze and de-icing products Pouring into radia-	Covers use in room size of 20 m3 for each use event Covers exposure up to 8,00 hours/event Covers concentrations up to 1 % covers use up to 365 day/year Covers use up to 1 times/day of use For each use event, covers amount up to 0,5 g Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3 for each use event Covers exposure up to 0,02 hours/event Covers concentrations up to 10 %

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	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,17 hours/event
Coatings and paints, thin-	Covers concentrations up to 50 %
ners, paint removers Re-	Covers concentrations up to 50 %
movers (paint-, glue-, wall	
paper-, sealant-remover).	
paper, scalarit remover).	covers use up to 3 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 491 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 2,00 hours/event
Lubricanta graccas ro	Covers concentrations up to 100 %
Lubricants, greases, re- lease products Liquids.	
	covers use up to 4 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 2.200 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
	for each use event Covers exposure up to 0,17 hours/event
Lubricants, greases, release products Pastes.	Covers concentrations up to 20 %
•	covers use up to 10 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 34 g
Lubricants, greases, re-	Covers concentrations up to 50 %
lease products Sprays.	·
	covers use up to 6 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 73 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,17 hours/event
Washing and cleaning products (including solvent based products) Laundry and dish washing products.	Covers concentrations up to 5 %
31	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 15 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,50 hours/event
Washing and cleaning	Covers concentrations up to 5 %
products (including solvent	OOVERS CONCENTIATIONS UP to 3 /0
products (including solvent	1

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based products) Cleaners,	
liquids (all purpose clean-	
ers, sanitary products, floor	
cleaners, glass cleaners,	
carpet cleaners, metal	
cleaners).	
,	covers use up to 128 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 27 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,33 hours/event
Washing and cleaning	Covers concentrations up to 15 %
products (including solvent	, ,
based products) Cleaners,	
trigger sprays (all purpose	
cleaners, sanitary products,	
glass cleaners).	
,	covers use up to 128 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,00 cm2
	For each use event, assumes swallowed amount of 35 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,17 hours/event
Welding and soldering	Covers concentrations up to 20 %
products (with flux coatings	·
or flux cores.), flux products	
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	For each use event, covers amount up to 12 g
	Covers use under typical household ventilation.
	the same of the sa
	Covers use in room size of 20 m3

Section 2.2	Control of Environmental Exposure	
Substance is isomeric mixture.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonnes	s/year):	67,9
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/	vear):	3,4E-02
Maximum daily site tonnage (kg/day):	9,3E-02
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):		365
Environmental factors not influenced by risk management		
Local freshwater dilution factor	or:	10

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Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	•
Release fraction to air from wide dispersive use (regional only):	0,95
Release fraction to wastewater from wide dispersive use:	2,5E-02
Release fraction to soil from wide dispersive use (regional only):	2,5E-02
Conditions and Measures related to municipal sewage treatment p	olant
Estimated substance removal from wastewater via domestic sewage	96,9
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	96,9
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	392
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03

Conditions and Measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or regional regulations.

Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

SECTION 3	EXPOSURE ESTIMATION
0 4 04 11 141	

Section 3.1 - Health

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 - Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

Further details on scaling and control technologies are provided in SpERC factsheet

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(http://cefic.org/en/reach-for-industries-libraries.html).

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Exposure Scenario - Consumer

30000001140	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Other Consumer Uses - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: PC28, PC29 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.16.v1
Scope of process	Consumer uses e.g. as a carrier in cosmetics/personal care products, perfumes and fragrances. Note: For cosmetic and personal care products, risk assessment only required for the environment under REACH as human health is covered by alternative legislation.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Additional Information	No exposure assessment presented for human health.

Section 2.1	Control of Consumer Exposure
Product Characteristics	

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT	
	MEASURES	

Section 2.2	Control of Environmental Exposu	ire
Substance is isomeric mixture	9.	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonnes	s/year):	5,0
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/)		2,5E-03
Maximum daily site tonnage (kg/day):	6,8E-03
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):		365
Environmental factors not influenced by risk management		
Local freshwater dilution factor	or:	10
Local marine water dilution fa		100
Other Operational Conditions affecting Environmental Exposure		ure
Release fraction to air from w	ide dispersive use (regional only):	0,95
Release fraction to wastewate		2,5E-02
Release fraction to soil from v	vide dispersive use (regional only):	2,5E-02
Conditions and Measures related to municipal sewage treatment plant		

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Estimated substance removal from wastewater via domestic sewage treatment (%)	96,9
Maximum allowable site tonnage (MSafe) based on release following	35
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Massaures related to systemal treatment of wests for disposal	

Conditions and Measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/or regional regulations.

Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
No exposure assessment presented for human health.		

Section 3.2 - Environment

The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health	
No exposure assessment presented for human health.	

Section 4.2 - Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.