SAFETY DATA SHEET



Diethylenetriamine, DETA

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

1.1 Product identifier

Product name : Diethylenetriamine, DETA

 Index number
 : 612-058-00-X

 EC number
 : 203-865-4

REACH Registration number

Registration number	Legal entity
01-2119473793-27-0001	Delamine BV

CAS number : 111-40-0
Product description : Not applicable

Product type : Liquid.

Other means of : DIETHYLENETRIAMINE; 2,2'-iminodi(ethylamine); diethylene triamine; 1,2-

identification Ethanediamine, N1-(2-aminoethyl)-; Diethylenetriamine (DETA); Diethylenetriamine-

1,2-Ethanediamine, N-(2-aminoethyl)-; 1,2-Ethanediamine, N-(2-aminoethyl)-; 2,2'-Diaminodiethylamine; 1,4,7-Tri-(aza)-heptane; N-(2-Aminoethyl)-1,2-ethanediamine

Chemical formula : C4-H13-N3

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

Product use : Intermediate.

Area of application : Industrial applications.

Identified uses

Consumer use as an epoxy and polyurethane curing agent

Formulation and (re)packing of substances and mixtures - Industrial

Manufacture of substance - Industrial

Use as a PU curing agent for rigid foam production - Industrial Use as a PU curing agent for rigid foam production - Professional

Use as an epoxy curing agent - Industrial
Use as an epoxy curing agent - Professional

Use as an intermediate - Industrial

1.3 Details of the supplier of the safety data sheet

DELAMINE B.V. Barchman Wuytierslaan 10 3818 LH Amersfoort The Netherlands Tel.:31-334676897

e-mail address of person

: SDS.Delamine@delamine.com

responsible for this SDS

1.4 Emergency telephone number

Supplier

Telephone number: AkzoNobel Chemicals-Deventer-NLT +31 570 679211 (24hours/7days)

F +31 570 679801

Date of issue/Date of revision : 29 June 2011 1/89

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mono-constituent substance

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Acute Tox. 4. H302 Acute Tox. 4, H312 Acute Tox. 2, H330 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335i

Classification according to Directive 67/548/EEC [DSD]

T+: R26 Xn: R21/22 C: R34 Xi: R37 R43

See Section 16 for the full text of the R phrases or H statements declared above. See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms





Signal word : Danger

Hazard statements : Fatal if inhaled.

Harmful if swallowed.

Harmful in contact with skin.

Causes severe skin burns and eye damage.

May cause an allergic skin reaction. May cause respiratory irritation.

Precautionary statements

Prevention : Wear protective gloves: >8 hours (breakthrough time): neoprene. Wear eye or face

protection. Do not breathe vapour.

Response : IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for

> breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water

or shower. Immediately call a POISON CENTER or physician. IF IN EYES:

Immediately call a POISON CENTER or physician.

: Store locked up. **Storage Disposal** : Not applicable.

Supplemental label

elements

: Not applicable.

2.3 Other hazards

Substance meets the criteria for PBT according to Regulation (EC) No.

: No.

1907/2006, Annex XIII

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

: No.

Date of issue/Date of revision : 29 June 2011

Diethylenetriamine, DETA

SECTION 2: Hazards identification

Other hazards which do not: Not applicable.

result in classification

SECTION 3: Composition/information on ingredients

Substance/mixture

: Mono-constituent substance

			<u>Classification</u>		
Product/ingredient name	Identifiers	%	67/548/EEC	Regulation (EC) No. 1272/2008 [CLP]	Туре
2,2'-iminodiethylamine	REACH #: 01- 2119473793-27 EC: 203-865-4 CAS: 111-40-0 Index: 612-058-00-X	100	T+; R26 Xn; R21/22 C; R34 Xi; R37 R43	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 2, H330 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335i	[A]
				See Section 16 for the full text of the H statements declared above.	

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type

[A] Constituent

[B] Impurity

[C] Stabilising additive

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact

: Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.

Inhalation

: Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact

: Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion

: Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If

Date of issue/Date of revision : 29 June 2011

SECTION 4: First aid measures

unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protection of first-aiders

No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Fatal if inhaled. May cause respiratory irritation. Exposure to decomposition products

may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : Causes severe burns. Harmful in contact with skin. May cause an allergic skin

reaction.

Ingestion Harmful if swallowed. May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:

> pain watering redness

Inhalation Adverse symptoms may include the following:

respiratory tract irritation

coughing

: Adverse symptoms may include the following: Skin contact

> pain or irritation redness

blistering may occur

Ingestion Adverse symptoms may include the following:

stomach pains

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed.

The exposed person may need to be kept under medical surveillance for 48 hours.

: No specific treatment. **Specific treatments**

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing

media

: Use an extinguishing agent suitable for the surrounding fire. Dry sand or other suitable

absorbent. Use dry chemical, CO2, water spray (fog) or foam.

Unsuitable extinguishing

media

: Halones

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous combustion

products

: Decomposition products may include the following materials:

carbon dioxide carbon monoxide nitrogen oxides

5.3 Advice for firefighters

fighters

Special precautions for fire- : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable

training.

Date of issue/Date of revision : 29 June 2011 4/89

SECTION 5: Firefighting measures

Special protective equipment for fire-fighters

: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders

: If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

: Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

Small spill

: Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill

: Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

6.4 Reference to other sections

See Section 1 for emergency contact information.
 See Section 8 for information on appropriate personal protective equipment.
 See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures

: Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from acids. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

SECTION 7: Handling and storage

7.2 Conditions for safe storage, including any incompatibilities

: Do not store above the following temperature: 40°C (104°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Store locked up. Separate from acids. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

7.3 Specific end use(s)

Recommendations : No specific data.

Industrial sector specific : No specific data.

solutions

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
2,2'-iminodiethylamine	EH40/2005 WELs (United Kingdom (UK), 8/2007). Absorbed through skin. TWA: 4.3 mg/m³ 8 hour(s). TWA: 1 ppm 8 hour(s).

Recommended monitoring procedures

: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to European Standard EN 689 for methods for the assessment of exposure by inhalation to chemical agents and national guidance documents for methods for the determination of hazardous substances.

Derived effect levels

Product/ingredient name	Type	Exposure	Value	Population	Effects
2,2'-iminodiethylamine	DNEL	Short term Inhalation	92.1 mg/m³	Workers	Systemic
	DNEL	Short term Inhalation	2.6 mg/m ³	Workers	Local
	DNEL	Short term Dermal	11.4 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	15.4 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	1.1 mg/cm ²	Workers	Local
	DNEL	Long term Inhalation	0.87 mg/m³	Workers	Local
	DNEL	Short term Dermal	4.88 mg/kg bw/day	Consumers	Systemic
	DNEL	Short term Inhalation	27.5 mg/m³	Consumers	Systemic
	DNEL	Long term Dermal	4.88 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Inhalation	4.6 mg/m³	Consumers	Systemic

Predicted effect concentrations

Product/ingredient name	Type	Compartment Detail	Value	Method Detail

Date of issue/Date of revision : 29 June 2011 6/89

Diethylenetriamine, DETA

SECTION 8: Exposure controls/personal protection

_	_	=		
2,2'-iminodiethylamine	PNEC	Fresh water	0.56 mg/l	Assessment Factors
	PNEC	Marine	0.056 mg/l	Assessment Factors
	PNEC	Fresh water sediment	1072 mg/kg dwt	-
	PNEC	Marine water sediment	107.2 mg/kg dwt	-
	PNEC	Soil	214 mg/kg dwt	-
	PNEC	Sewage Treatment	6 mg/l	Assessment Factors
		Plant		

8.2 Exposure controls

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin protection

Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. >8 hours (breakthrough time): neoprene

Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: neoprene Boots.

Respiratory protection

: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: ammonia filter (Type K) ammonia (Type K) and particulate filter

Environmental exposure

controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Liquid. [Viscous liquid.] Colour : Colourless. Yellow. **Odour** : Ammoniacal. **Odour threshold** Not available.

pН : 11.6 [Conc. (% w/w): 1%]

Melting point/freezing point : -39°C Initial boiling point and boiling range

: 207°C

: Closed cup: 96.7°C Flash point **Evaporation rate** Not available.

Date of issue/Date of revision : 29 June 2011 7/89

Diethylenetriamine, DETA

SECTION 9: Physical and chemical properties

Flammability (solid, gas) : Not applicable **Burning time** : Not applicable. : Not applicable. **Burning rate**

Upper/lower flammability or

explosive limits

: Not available.

Vapour pressure : 0.021 kPa [20°C] Vapour density : 3.56 [Air = 1] **Relative density** : 0.9586

Solubility(ies)

Miscible in water.

Partition coefficient: n-

octanol/water

: -1.58

Auto-ignition temperature : 358°C

Decomposition temperature

: Not available.

Viscosity : Dynamic: 5.05 mPa·s

Explosive properties : Not applicable.

Oxidising properties : None.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

reactions

10.3 Possibility of hazardous: Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : Keep away from sources of ignition - No smoking. aerosol or mist formation

10.5 Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials, metals and

Chlorinated hydrocarbon.

10.6 Hazardous

decomposition products

: Under normal conditions of storage and use, hazardous decomposition products

should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2,2'-iminodiethylamine	LD50 Dermal LD50 Oral	Rabbit Rat	1090 mg/kg 1620 mg/kg	-

Conclusion/Summary

: No additional information.

Irritation/Corrosion Conclusion/Summary

Skin : Corrosive to the skin. **Eyes** Highly corrosive.

: May cause respiratory irritation. Respiratory

Date of issue/Date of revision : 29 June 2011 8/89

Diethylenetriamine, DETA

SECTION 11: Toxicological information

Sensitiser

Product/ingredient name	Route of exposure	Species	Result
2,2'-iminodiethylamine	skin	Guinea pig	Sensitising

Conclusion/Summary

Skin : May cause skin sensitisation.

Respiratory: Non-sensitiser to lungs. Not classified for respiratory sensitisation.

Mutagenicity

Conclusion/Summary: Not mutagenic in a standard battery of genetic toxicological tests.

Carcinogenicity

Conclusion/Summary : Dermal No carcinogenic effect. Not classified as dangerous NOAEL = 56.3mg/kg

bw/day

Oral No data available for this end-point, hence this classification is not considered to

be applicable.

Inhalation No data available for this end-point, hence this classification is not

considered to be applicable.

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Developmental toxin	Species	Dose	Exposure
2,2'-iminodiethylamine	-	Equivocal	Equivocal	Rat	Oral	90 days

Conclusion/Summary : Fertility NOAEL = 30mg/kg bw/day

Developmental Toxicity: NOAEL = 30mg/kg bw/day

Data inconclusive. Not fully tested. Not classified.

Further studies (REACH Annex IX/ X) have been proposed

Teratogenicity

Conclusion/Summary: No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
2,2'-iminodiethylamine	Category 3	Inhalation	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure

: Routes of entry anticipated:Oral, Dermal. Routes of entry not anticipated:Inhalation.

Potential acute health effects

Inhalation : Fatal if inhaled. May cause respiratory irritation. Exposure to decomposition products

may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion : Harmful if swallowed. May cause burns to mouth, throat and stomach.

Skin contact : Zauses severe burns. Harmful in contact with skin. May cause an allergic skin

reaction.

Eye contact : Causes serious eye damage.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation : Adverse symptoms may include the following:

respiratory tract irritation

coughing

Ingestion : Adverse symptoms may include the following:

stomach pains

Date of issue/Date of revision : 29 June 2011 9/89

Diethylenetriamine, DETA

SECTION 11: Toxicological information

: Adverse symptoms may include the following: Skin contact

pain or irritation

redness

blistering may occur

Eye contact : Adverse symptoms may include the following:

> watering redness

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate

effects

: No specific data.

Potential delayed effects: No specific data.

Long term exposure

Potential immediate

: No specific data.

effects

Potential delayed effects: No specific data.

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
2,2'-iminodiethylamine	Chronic NOAEL Oral Chronic NOAEL Dermal	Rat Rat	70 mg/kg 114 mg/kg	-
	Sub-chronic NOAEL Inhalation Vapour	Rat	550 mg/m³	6 hours

Conclusion/Summary Cannot be classified.

General Once sensitized, a severe allergic reaction may occur when subsequently exposed to

very low levels.

Carcinogenicity : No known significant effects or critical hazards. **Mutagenicity** : No known significant effects or critical hazards. **Teratogenicity** : No known significant effects or critical hazards. **Developmental effects** : No known significant effects or critical hazards. **Fertility effects** : No known significant effects or critical hazards.

: Rapidly absorbed. **Absorption Metabolism** : Slowly metabolised.

Elimination : Excreted via the faeces. Excreted via the urine.

Other information : No specific data.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
2,2'-iminodiethylamine	EC50 32.7 mg/l NOEC 6 mg/l Acute EC50 1164 mg/l Fresh water Acute EC50 32 mg/l Fresh water Acute LC50 430 mg/l Fresh water Chronic NOEC 5.6 mg/l Fresh water Chronic NOEC 10 mg/l Fresh water	Micro-organism Micro-organism Algae Daphnia Fish Daphnia Fish	3 hours 3 hours 72 hours 48 hours 96 hours 21 days 28 days

Conclusion/Summary : Not classified as dangerous

PNEC Intermittent release.= 0.32 mg/l

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
2,2'-iminodiethylamine	-	87 % - Readily - 21 days	-	-

Date of issue/Date of revision : 29 June 2011 10/89

Diethylenetriamine, DETA

SECTION 12: Ecological information

Conclusion/Summary

: Readily biodegradable Toxic, not persistent. This substance is not expected to bioaccumulate through food chains in the environment.

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
2,2'-iminodiethylamine	Fresh water 28 days	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
2,2'-iminodiethylamine	-1.58	0.3 to 6.3	low

12.4 Mobility in soil

Soil/water partition coefficient (Koc)

: 19.111

Mobility : No specific data.

12.5 Results of PBT and vPvB assessment

PBT : No.

vPvB : No.

12.6 Other adverse effects: No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal

: The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Hazardous waste

Packaging

Methods of disposal

: The classification of the product may meet the criteria for a hazardous waste.

: The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions

: This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

Date of issue/Date of revision : 29 June 2011 11/89

SECTION 14: Transport information

	ADR/RID	ADN/ADNR	IMDG	IATA
14.1 UN number	UN2079	UN2079	UN2079	UN2079
14.2 UN proper shipping name	DIETHYLENETRIAMINE	DIETHYLENETRIAMINE	DIETHYLENETRIAMINE	Diethylenetriamine
14.3 Transport hazard class(es)	8	8	8	8
14.4 Packing group	II	II	II	II
14.5 Environmental hazards	No.	No.	No.	No.
14.6 Special precautions for user	Not available.	Not available.	Not available.	Not available.
Additional information	Hazard identification number 80 Limited quantity 1 L Tunnel code (E)		Emergency schedules (EmS) F-A, S-B	Passenger and Cargo Aircraft Quantity limitation: 1 L Packaging instructions: 851 Cargo Aircraft Only Quantity limitation: 30 L Packaging instructions: 855 Limited Quantities - Passenger Aircraft Quantity limitation: 0.5 L Packaging instructions: Y840

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: Not available.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions : Not applicable. on the manufacture, placing on the market and use of certain dangerous

substances, mixtures and articles

Other EU regulations

Europe inventory: This material is listed or exempted.

Black List Chemicals : Not listed Priority List Chemicals : Not listed

Date of issue/Date of revision : 29 June 2011

Diethylenetriamine, DETA

SECTION 15: Regulatory information

Integrated pollution

prevention and control list

(IPPC) - Air

Integrated pollution : Not listed

prevention and control list

(IPPC) - Water

International regulations

Chemical Weapons
Convention List Schedule I

Chemicals

: Not listed

: Not listed

Chemical Weapons

Convention List Schedule II

Chemicals

: Not listed

Chemical Weapons

Convention List Schedule III Chemicals

: Not listed

15.2 Chemical Safety

Assessment

: Complete.

15.3 Registration status : Applicable.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms: ATE = Acute Toxicity Estimate

CLP = Classification, Labelling and Packaging Regulation (Regulation (EC) No.

1272/2008]

DNEL = Derived No Effect Level

EUH statement = CLP-specific Hazard statement PNEC = Predicted No Effect Concentration RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Cute Tox. 4, H302	Expert judgment
Acute Tox. 4, H312	Expert judgment
Acute Tox. 2, H330	Expert judgment
Skin Corr. 1B, H314	Expert judgment
Eye Dam. 1, H318	Expert judgment
Skin Sens. 1, H317	Expert judgment
STOT SE 3, H335i	Expert judgment

Full text of abbreviated H

statements

: H302 Harmful if swallowed.

H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

H317 May cause an allergic skin reaction.

H318 Causes serious eye damage.

H330 Fatal if inhaled.

H335i May cause respiratory irritation.

Full text of classifications [CLP/GHS]

Acute Tox. 2, H330
 Acute Tox. 4, H302
 Acute Tox. 4, H312
 ACUTE TOXICITY: INHALATION - Category 2
 ACUTE TOXICITY: ORAL - Category 4
 ACUTE TOXICITY: SKIN - Category 4

Eve Dam. 1. H318 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1

Skin Corr. 1B, H314 SKIN CORROSION/IRRITATION - Category 1B

Skin Sens. 1, H317 SKIN SENSITIZATION - Category 1

STOT SE 3, H335i SPECIFIC TARGET ORGAN TOXICITY (SINGLE

EXPOSURE): INHALATION [Respiratory tract irritation] -

Category 3

Diethylenetriamine, DETA

SECTION 16: Other information

Full text of abbreviated R

phrases

: R26- Very toxic by inhalation.

R21/22- Harmful in contact with skin and if swallowed.

R34- Causes burns.

R37- Irritating to respiratory system.

R43- May cause sensitisation by skin contact.

Full text of classifications

[DSD/DPD]

Date of issue/ Date of

revision

: 29 June 2011

Date of previous issue : 25 February 2011

Version : 6

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Annex to the extended Safety Data Sheet (eSDS)

Consumer

Identification of the substance or mixture

Product definition Mono-constituent substance **Product name** Diethylenetriamine, DETA

Section 1: Title

Short title of the exposure Identified use name: Consumer use as an epoxy and polyurethane curing agent

scenario/List of use descriptors Sector of end use: SU21

Subsequent service life relevant for that use: No. Environmental Release Category: ERC08c, ERC08f Market sector by type of chemical product: PC01

Specific Environmental Release Category: FEICA 11

Processes and activities covered

by the exposure scenario

Covers the use in consumer application of do-it-yourself glue

Assessment Method See Section 3

Section 2: Operational conditions and risk management measures

Section 2.1: Control of consumer exposure

Contributing exposure scenario controlling consumer exposure for 0: Glues DIY-use (carpet glue, tile glue, wood parquet glue)

Concentration of substance in mixture or article Covers concentrations up to 35% **Physical state:** Liquid. Vapour pressure 20.3 Pa*s

Human factors not influenced by risk management: None identified.

Conditions and measures related to information and Covers use under typical household ventilation.

behavioural advice to consumers

Contributing scenarios: Operational conditions and risk management measures

Section 2.2: Control of environmental exposure

Contributing exposure scenario controlling environmental exposure for 0:

Product Characteristics: Not available. Amounts used: 10700 Tonnes/year

Fraction of EU tonnage used in region: 0.1

Regional use tonnage (tonnes/year): Not available. Not available. Fraction of Regional tonnage used locally: Not available. Annual site tonnage (tonnes/year): Not available. Average Local Daily Tonnage (kg/day) Maximum daily site tonnage (kg/day): Not available. Frequency and duration of use: Continuous release. Not available. Emission Days (days/year):

Environmental factors not influenced by risk

management:

Local freshwater dilution factor: Not available Local marine water dilution factor: Not available

environmental exposure:

Other operational conditions of use affecting

Release fraction to air from process (initial release prior Not available.

Release fraction to soil from process (initial

release prior to RMM):

Not available.

Release fraction to wastewater from process (initial

Not available

release prior to RMM):

Conditions and measures related to municipal sewage

treatment plant:

Not available.

Estimated substance removal from wastewater via

domestic sewage treatment (%):

Total efficiency of removal from wastewater after on-site Not available. and off-site (domestic treatment plant) RMMs (%):

Diethylenetriamine, DETA

Identified use name: Consumer use as an epoxy and polyurethane

curing agent

Sector of end use: SU21

Subsequent service life relevant for that use: No. Environmental Release Category: ERC08c, ERC08f Market sector by type of chemical product: PC01

Maximum allowable site tonnage (Msafe) based on release Not available.

following total wastewater treatment removal (kg/d):

Assumed domestic sewage treatment plant flow (m3/d): Not available.

Local release to soil: 0 Local release to air: 5.30E-02 Local release to sewage:

Section 3: Exposure estimation and reference to its source

Section 3.1: Exposure estimation - Consumers

Exposure estimation and reference to its source - Consumers: 2:

Contributing Frequency (1/Year):

Scenario:

substance in the

Calculation method: **Body weight:**

article::

Exposure estimation and

reference to its source -

Not applicable

Not applicable.

Not applicable.

Weight fraction of

Not applicable.

Not applicable.

Consumers: 0:

Inhalation:

Mode of release: Not applicable.

Exposure estimation and reference to its source -

Consumers: 1:

Exposure (minutes): Application duration: **Amount/concentration** applied (g):

Room volume (m³):

Room volume x ventilation rate: (I/h):

Not applicable. Not applicable.

Not applicable.

Not applicable.

Not applicable.

Release area (cm2):

Temperature (°C):

Mass transfer rate: Contributing

Uptake fraction (Update model): Inhalation rate:

Scenario Molecular

Not applicable. Not applicable. Not applicable.

weight (g/mole): Not applicable.

Not applicable. Not applicable.

Application methods: Not applicable.

Surface area (Skin contact

Product amount (g):

Uptake fraction (Update

Inhalation event (mg/m³):

area) cm2: Not applicable.

Not applicable.

Not applicable.

model):

bw):

Not applicable.

Inhalation mg/m³

Not applicable.

Not applicable.

(Concentration on day of

Dermal load (mg/cm2):

Dermal External dose (mg/kg

bw/day:

Dermal (Internal dose) mg/kg

exposure):

Not applicable.

Not applicable.

Not applicable.

Not applicable.

Dermal (External dose) mg/kg

bw/day:

Inhalation event/Exposure

Dermal systemic exposure mg/m³ (Short term exposure):

(external dose) with gloves

Inhalation (mg/kg/day) Long term exposure:

(90% efficiency) mg/kg bw/day

(Long term exposure):

Not applicable.

Section 3.2 Exposure estimation-Consumers

Contributing exposure scenario controlling worker exposure for 0:

Route of exposure Long term exposure, Systemic, **Contributing scenarios** Not applicable.

Dose/Concentration Not applicable.

Not applicable.

Justification Not applicable.

Dermal

Long term exposure, Systemic,

Not applicable.

Not applicable.

Not applicable.

Inhalable

Long term exposure, Systemic,

Combined

Long term exposure, Local, Dermal

Not applicable.

Not applicable.

Not applicable.

Long term exposure, Local,

Not applicable. Not applicable. Not applicable. Not applicable. Not applicable. Not applicable.

Inhalable

Long term exposure, Systemic, Oral Not applicable. Short term exposure, Systemic,

Not applicable. Not applicable. Not applicable.

Not applicable. Not applicable.

Dermal

Short term exposure, Systemic,

Not applicable.

Not applicable.

Inhalable

Short term exposure, Local,

Not applicable.

Not applicable.

Not applicable.

Short term exposure, Systemic, Combined

Inhalable

Short term exposure, Local, Dermal Not applicable. Not applicable. Not applicable. Not applicable.

Not applicable. Not applicable.

Not applicable.

Diethylenetriamine, DETA

Identified use name: Consumer use as an epoxy and polyurethane curing agent

Sector of end use: SU21

Subsequent service life relevant for that use: No. Environmental Release Category: ERC08c, ERC08f Market sector by type of chemical product: PC01

Short term exposure, Systemic, Not applicable. Not applicable. Oral

Section 3.3 Environment Exposure estimation

Contributing exposure scenario controlling environmental exposure for 1:

Total release for regional Release from point source (local exposure estimation) exposure estimation kg/day

kg/day

Waste water Not applicable. Not applicable. Not applicable. Regional PEC Total: 1.71E-03 Not applicable. Not applicable. Surface water air (direct + STP) Not applicable. Regional PEC: 2.06E-05 Not applicable. Regional PEC natural soil Total: Soil (direct releases only) Not applicable. Not applicable.

1.54E-03 Regional PEC industrial

soil Total: 1.54E-03

Value Justification

Concentration in sewage (PECstp)

mg/l

Not applicable.

Not applicable.

Concentration in sewage sludge

mg/kg dwt

Fresh water mg/l

Not applicable.

Not applicable.

Local concentration

PEC aquatic (local+regional) **Justification** Not applicable. Surface water, Dissolved During Not applicable.

emission Resulting PEC local, water (mg/l): 0.00185; Surface water, Dissolved Annual average:

0.00185;

Marine water mg/l Not applicable. During emission Resulting PEC Not applicable.

local, water (mg/l): 0.00018; Annual average, Dissolved, Resulting PEC local, water (mg/l): 0.00018; Regional PEC Total:

1.66E-04

Not applicable. Intermittent release. mg/l Not applicable. Not applicable.

> **Local concentration** PEC sediment (local+regional) **Justification** Not applicable. During emission :3.55; Regional Not applicable.

PEC Total: 5.66E+00

During emission: 0.350; Regional Marine water sediment mg/kg dwt Not applicable. Not applicable.

PEC: 4.68E-01

0.007, 180 days

Not applicable.

Not applicable.

Local concentration PEC soil (local+regional) **Justification**

Agricultural soil averaged mg/kg

Fresh water sediment mg/kg dwt

Not applicable.

0.0434, 30 days; 0.0153, 180 days; Regional PEC Total: 4.43E-

03

Grassland averaged mg/kg dwt

Groundwater mg/l

During emission mg/m³

Annual average mg/m³

Micro-organism mg/l

Annual deposition mg/m2/d

Not applicable. Not applicable.

Local concentration Not applicable.

Not applicable. Not applicable.

2.06-05

Local concentration Not applicable.

Not applicable.

PEC aquatic (local+regional)

PEC air (local+regional)

Not applicable. **Justification** Not applicable

Not applicable.

Not applicable.

Justification

Not applicable.

Not applicable.

Justification

Section 4: Guidance to Downstream User to evaluate if he works inside the boundaries set by the ES

Environment Not available Health Not available.

Section 5. Remarks: Additional good practice advice beyond the REACH CSA

Environment Not applicable. Health Not applicable. Additional guidance Not applicable.

Diethylenetriamine, DETA

Identified use name: Consumer use as an epoxy and polyurethane curing agent

Sector of end use: SU21

Subsequent service life relevant for that use: No. Environmental Release Category: ERC08c, ERC08f Market sector by type of chemical product: PC01

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition Mono-constituent substance **Product name** Diethylenetriamine, DETA

Section 1: Title

Short title of the exposure scenario/List of use descriptors Identified use name: Formulation and (re)packing of substances and mixtures - Industrial

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09,

Substance supplied to that use in form of: As such

Sector of end use: SU03

Subsequent service life relevant for that use: No. **Environmental Release Category: ERC02**

Specific Environmental Release Category: FFICA 2

Processes and activities covered

by the exposure scenario

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. also includes combined

formulation/reaction to DETA-adducts

Section 2: Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 0: Use in closed process, no likelihood of exposure

Product Characteristics:

Concentration of substance in product: Covers percentage substance in the product up to 100%

Physical state: Liquid. Amounts used: Not applicable.

Covers daily exposures up to 8 hours (unless stated differently). Frequency and duration of use:

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Continuous process Mixing operations (closed systems) no sampling: No other specific measures identified.

Bulk product storage (closed systems): No other specific measures identified.

Respiratory protection: None

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 1: Use in closed, continuous process with occasional controlled exposure

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 100%

Physical state: Liquid. Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management:

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Continuous process Mixing operations (closed systems) with sample collection: No other specific measures identified.

Respiratory protection: None

Diethylenetriamine, DETA

Identified use name: Formulation and (re)packing of substances and mixtures - Industrial

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC15

Substance supplied to that use in form of: As such Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC02

18/89

Industrial

Section 2.1 Control of worker exposure			
Contributing exposure scenario controlling worker exposur	re for 2: Use in closed batch process (synthesis or formulation)		
Product Characteristics:	Volatility: low		
Concentration of substance in product:	Covers percentage substance in the product up to 100%		
Physical state:	Liquid.		
Amounts used:	Not applicable.		
Frequency and duration of use:	Covers daily exposures up to 8 hours (unless stated differently).		
Human factors not influenced by risk management:	None identified.		
Other operational conditions affecting worker exposure:	Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently).		
Contributing scenarios: Operational conditions and risk ma Use in contained batch processes Mixing operations (closed syst	. ,		
Respiratory protection:	None.		
Section 2.1 Control of worker exposure			
	re for 3: Use in batch and other process (synthesis) where opportunity for		
exposure arises	e for 3. Use in patch and other process (synthesis) where opportunity for		
Product Characteristics:	Volatility: low		
Concentration of substance in product:	Covers percentage substance in the product up to 100%		
Physical state:	Liquid.		
Amounts used:	Not applicable.		
Frequency and duration of use:	Covers daily exposures up to 8 hours (unless stated differently).		
Human factors not influenced by risk management:	None identified.		
Other operational conditions affecting worker exposure:	Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently).		
Contributing scenarios: Operational conditions and risk ma	•		
·	lection: Provide extract ventilation to points where emissions occur.		
Respiratory protection:	None.		
Section 2.1 Control of worker exposure			
	re for 4: Mixing or blending in batch processes for formulation of preparations*		
and articles (multistage and/or significant contact)			
Product Characteristics:	Volatility: low		
Concentration of substance in product:	Covers percentage substance in the product up to 100%		
Physical state:	Liquid.		
Amounts used:	Not applicable.		
Frequency and duration of use: Human factors not influenced by risk management:	Covers daily exposures up to 8 hours (unless stated differently). None identified.		
Other operational conditions affecting worker exposure:	Assumes a good basic standard of occupational hygiene is implemented.		
Other operational conditions affecting worker exposure.	Assumes activities are at ambient temperature (unless stated differently).		
Contributing scenarios: Operational conditions and risk ma	inagement measures		
Mixing operations (open systems): Provide extract ventilation to p	oints where emissions occur. Wear suitable gloves tested to EN374.		
Respiratory protection:	None.		
→ The property of the pro			

Identified use name: Formulation and (re)packing of substances and

mixtures - Industrial
Process Category: PROC01, PROC02, PROC03, PROC04, PROC05,
PROC08a, PROC08b, PROC09, PROC15 Substance supplied to that use in form of: As such

Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC02

Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 5: Transfer of substance or preparation (charging/discharging) from/to

vessels/large containers at non-dedicated facilities

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 100%

Physical state: L iquid Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Equipment cleaning and maintenance: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 1 hour. Wear suitable gloves tested to EN374.

Equipment cleaning and maintenance: Wear suitable gloves tested to EN374. Wear a respirator conforming to EN140 with Type A filter or better.

Respiratory protection:

None

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 6: Transfer of substance or preparation (charging/discharging) from/to

vessels/large containers at dedicated facilities

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 100%

Physical state: L iquid Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Bulk transfers Dedicated facility: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 4 hours. Wear suitable gloves tested to EN374.

Material transfers Dedicated facility: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 4 hours. Wear suitable gloves tested to EN374.

Respiratory protection: None

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 7: Transfer of substance or preparation into small containers (dedicated

filling line, including weighing)

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 100%

Physical state: Liquid. Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Drum and small package filling Dedicated facility: Ensure operation is undertaken outdoors. Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours. Wear suitable gloves tested to EN374.

Drum and small package filling Dedicated facility with local exhaust ventilation: Ensure material transfers are under containment or extract ventilation.

Respiratory protection: None

Diethylenetriamine, DETA

Identified use name: Formulation and (re)packing of substances and mixtures - Industrial

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC15 Substance supplied to that use in form of: As such

Sector of end use: SU03 Subsequent service life relevant for that use: No.

Environmental Release Category: ERC02

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 8: Use as laboratory reagent

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 100%

Physical state: Liquid. Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Laboratory activities: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving

exposure for more than 4 hours.

Respiratory protection: None

Section 2.2: Control of environmental exposure

Contributing exposure scenario controlling environmental exposure for 0: Formulation of preparations*

43000 Tonnes/year Amounts used:

Fraction of EU tonnage used in region:

Regional use tonnage (tonnes/year): Not available. Fraction of Regional tonnage used locally: Not available. Annual site tonnage (tonnes/year): Not available. Average Local Daily Tonnage (kg/day): Not available. Maximum daily site tonnage (kg/day): 30000

Frequency and duration of use: Continuous release.

220 Emission Days (days/year):

Environmental factors not influenced by risk management:

10 Local freshwater dilution factor: Local marine water dilution factor: 100

Other operational conditions of use affecting environmental

exposure:

Release fraction to air from process (initial release prior to

RMM):

Release fraction to soil from process (initial release prior to

RMM):

Release fraction to wastewater from process (initial release

prior to RMM):

Release fraction to air from wide dispersive use (regional

Release fraction to wastewater from wide dispersive use:

Release fraction to soil from wide dispersive use (regional

only):

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil:

Treat air emission to provide a typical removal efficiency of

Treat on-site wastewater (prior to receiving water discharge) Not applicable.

to provide the required removal efficiency of 3 (%):

If discharging to domestic sewage treatment plant, provide

the required onsite wastewater removal efficiency of 3 (%):

Conditions and measures related to municipal sewage treatment

Estimated substance removal from wastewater via domestic sewage treatment (%):

Total efficiency of removal from wastewater after on-site and offsite (domestic treatment plant) RMMs (%):

Maximum allowable site tonnage (Msafe) based on release following 7987900 kg/day

total wastewater treatment removal (kg/d):

Conditions and measures related to external recovery of waste:

Local release to soil, kg/day:

92.6% 92.6%

6.00E-03

0.00E+00

0.00F+00

Not available.

Not available.

Not available.

Not available.

Not available.

Dispose of waste product or used containers according to local regulations.

0

Diethylenetriamine, DETA

Identified use name: Formulation and (re)packing of substances and mixtures - Industrial Process Category: PROC01, PROC02, PROC03, PROC04, PROC05,

PROC08a, PROC08b, PROC09, PROC15

Substance supplied to that use in form of: As such Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC02

Local release to air, kg/day:

Local release to sewage, kg/day:

Fraction of main source to local environment:

0.15

Section 3: Exposure estimation

Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Continuous process Mixing operations (closed systems) no sampling; Bulk product storage (closed systems)	0.34	Not applicable.
Long term exposure, Systemic, Inhalable	Continuous process Mixing operations (closed systems) no sampling; Bulk product storage (closed systems)	0.04	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Continuous process Mixing operations (closed systems) no sampling; Bulk product storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Continuous process Mixing operations (closed systems) no sampling; Bulk product storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Continuous process Mixing operations (closed systems) no sampling; Bulk product storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Local,	Not applicable	Not applicable	NI-4 Pbl-
Inhalable	Not applicable.	Not applicable.	Not applicable.
Inhalable Section 3.1Workers Exposure estima	ation		•
Inhalable Section 3.1Workers Exposure estima Contributing exposure scenario con	ation trolling worker exposure for 1: U	se in closed, continuous pro	ocess with occasional controlled exposure
Inhalable Section 3.1Workers Exposure estima	cation trolling worker exposure for 1: U Contributing scenarios Continuous process Mixing operations (closed systems) with		
Inhalable Section 3.1Workers Exposure estima Contributing exposure scenario con Route of exposure Long term exposure, Systemic,	ation trolling worker exposure for 1: U Contributing scenarios Continuous process Mixing	se in closed, continuous pro	ocess with occasional controlled exposure Justification
Inhalable Section 3.1Workers Exposure estima Contributing exposure scenario con Route of exposure Long term exposure, Systemic, Dermal Long term exposure, Systemic,	contributing scenarios Contributing scenarios Continuous process Mixing operations (closed systems) with sample collection Continuous process Mixing operations (closed systems) with	se in closed, continuous pro Dose/Concentration 1.37	ocess with occasional controlled exposure Justification Not applicable.
Inhalable Section 3.1Workers Exposure estima Contributing exposure scenario con Route of exposure Long term exposure, Systemic, Dermal Long term exposure, Systemic, Inhalable Long term exposure, Systemic,	contributing scenarios Contributing scenarios Continuous process Mixing operations (closed systems) with sample collection Continuous process Mixing operations (closed systems) with sample collection	se in closed, continuous pro Dose/Concentration 1.37	Justification Not applicable. Not applicable.
Inhalable Section 3.1Workers Exposure estima Contributing exposure scenario con Route of exposure Long term exposure, Systemic, Dermal Long term exposure, Systemic, Inhalable Long term exposure, Systemic, Combined Long term exposure, Local, Dermal Long term exposure, Local,	contributing scenarios Contributing scenarios Continuous process Mixing operations (closed systems) with sample collection Continuous process Mixing operations (closed systems) with sample collection Not applicable.	se in closed, continuous pro Dose/Concentration 1.37 4.30 Not applicable.	Docess with occasional controlled exposure Justification Not applicable. Not applicable. Not applicable.
Inhalable Section 3.1Workers Exposure estima Contributing exposure scenario con Route of exposure Long term exposure, Systemic, Dermal Long term exposure, Systemic, Inhalable Long term exposure, Systemic, Combined Long term exposure, Local, Dermal Long term exposure, Local, Inhalable Short term exposure, Systemic,	contributing scenarios Contributing scenarios Continuous process Mixing operations (closed systems) with sample collection Continuous process Mixing operations (closed systems) with sample collection Not applicable. Not applicable.	se in closed, continuous pro Dose/Concentration 1.37 4.30 Not applicable. Not applicable.	Docess with occasional controlled exposure Justification Not applicable. Not applicable. Not applicable. Not applicable.
Inhalable Section 3.1Workers Exposure estima Contributing exposure scenario con Route of exposure Long term exposure, Systemic, Dermal Long term exposure, Systemic, Inhalable Long term exposure, Systemic, Combined	contributing scenarios Contributing scenarios Continuous process Mixing operations (closed systems) with sample collection Continuous process Mixing operations (closed systems) with sample collection Not applicable. Not applicable. Not applicable. Continuous process Mixing operations (closed systems) with sample collection	se in closed, continuous pro Dose/Concentration 1.37 4.30 Not applicable. Not applicable. Not applicable.	Docess with occasional controlled exposure Justification Not applicable.
Inhalable Section 3.1Workers Exposure estima Contributing exposure scenario contributing exposure scenario contributing exposure scenario contributing exposure Route of exposure Long term exposure, Systemic, Inhalable Long term exposure, Systemic, Combined Long term exposure, Local, Dermal Long term exposure, Local, Dermal Long term exposure, Systemic, Inhalable Short term exposure, Systemic, Inhalable Short term exposure, Systemic, Inhalable Short term exposure, Systemic, Inhalable	contributing scenarios Contributing scenarios Continuous process Mixing operations (closed systems) with sample collection Continuous process Mixing operations (closed systems) with sample collection Not applicable. Not applicable. Not applicable. Continuous process Mixing operations (closed systems) with sample collection Continuous process Mixing operations (closed systems) with sample collection Continuous process Mixing operations (closed systems) with	se in closed, continuous pro Dose/Concentration 1.37 4.30 Not applicable. Not applicable. Not applicable. Not applicable.	Not applicable.
Inhalable Section 3.1Workers Exposure estima Contributing exposure scenario con Route of exposure Long term exposure, Systemic, Dermal Long term exposure, Systemic, Inhalable Long term exposure, Systemic, Combined Long term exposure, Local, Dermal Long term exposure, Local, Dermal Long term exposure, Systemic, Dermal Short term exposure, Systemic,	contributing scenarios Contributing scenarios Continuous process Mixing operations (closed systems) with sample collection Continuous process Mixing operations (closed systems) with sample collection Not applicable. Not applicable. Not applicable. Continuous process Mixing operations (closed systems) with sample collection Continuous process Mixing operations (closed systems) with sample collection Continuous process Mixing operations (closed systems) with sample collection	se in closed, continuous pro Dose/Concentration 1.37 4.30 Not applicable. Not applicable. Not applicable. Not applicable	Not applicable. Not applicable.

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05,
PROC08a, PROC08b, PROC09, PROC015
Substance supplied to that use in form of: As such

Contributing exposure scenario con	troiling worker exposure for 2: Us	se in closed batch process	(synthesis or formulation)
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Use in contained batch processes Mixing operations (closed systems) with sample collection	0.34	Not applicable.
Long term exposure, Systemic, Inhalable	Use in contained batch processes Mixing operations (closed systems) with sample collection	12.90	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Use in contained batch processes Mixing operations (closed systems) with sample collection	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Use in contained batch processes Mixing operations (closed systems) with sample collection	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Use in contained batch processes Mixing operations (closed systems) with sample collection	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estima Contributing exposure scenario con exposure arises		se in batch and other proce	ess (synthesis) where opportunity for
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Batch process Mixing operations (open systems) with sample collection; Aerosols	6.86; Not applicable	Not applicable.
Long term exposure, Systemic, Inhalable	Batch process Mixing operations (open systems) with sample collection; Aerosols	2.15; 0.50	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Batch process Mixing operations (open systems) with sample collection; Aerosols	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Batch process Mixing operations (open systems) with sample collection: Agrosols	Not applicable	Not applicable.

Short term exposure, Systemic,

Short term exposure, Local,

Combined

Inhalable

Contributing exposure scenario controlling worker exposure for 4: Mixing or blending in batch processes for formulation of preparations* and articles (multistage and/or significant contact)

Not applicable.

Not applicable

Not applicable.

Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Mixing operations (open systems); Aerosols	2.74; Not applicable	Not applicable.
Long term exposure, Systemic, Inhalable	Mixing operations (open systems); Aerosols	2.15; 0.50	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Mixing operations (open systems); Aerosols	Not applicable	Not applicable.

collection; Aerosols

(open systems) with sample collection; Aerosols

Not applicable.

Not applicable.

Short term exposure, Local, Dermal Batch process Mixing operations

Diethylenetriamine, DETA

Identified use name: Formulation and (re)packing of substances and mixtures - Industrial Process Category: PROC01, PROC02, PROC03, PROC04, PROC05,

PROCUS, PROCUS

Not applicable.

Not applicable.

Not applicable.

Subsequent service life relevant for that use: No.
Environmental Release Category: ERC02

y. ERC02 23/89

Inhalable	Aerosols		
Short term exposure, Systemic,	Not applicable.	Not applicable.	Not applicable.
Combined Short term exposure, Local, Dermal		Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Aerosols Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estima			nauntian (abayain a/dia abayain a) fyana/ka
essels/large containers at non-dedi		ansier of substance of pre	paration (charging/discharging) from/to
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Equipment cleaning and maintenance	2.74	Not applicable.
Long term exposure, Systemic, nhalable	Equipment cleaning and maintenance	6.02; 4.30	Not applicable.
ong term exposure, Systemic,	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
ong term exposure, Local, nhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Equipment cleaning and maintenance	Not applicable	Not applicable.
Short term exposure, Systemic, nhalable	Equipment cleaning and maintenance	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Equipment cleaning and maintenance	Not applicable	Not applicable.
Short term exposure, Local, nhalable	Not applicable.	Not applicable.	Not applicable.
	otion		
Section 3.1Workers Exposure estimation Contributing exposure scenario con ressels/large containers at dedicate	trolling worker exposure for 6: Tr	ansfer of substance or pre	paration (charging/discharging) from/to
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
•			
ong term exposure, Systemic, termal	Bulk transfers Dedicated facility; Material transfers Dedicated facility	1.37	Not applicable.
ong term exposure, Systemic, nhalable	Bulk transfers Dedicated facility; Material transfers Dedicated facility	9.03	Not applicable.
ong term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
ong term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
ong term exposure, Local, nhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Bulk transfers Dedicated facility; Material transfers Dedicated facility	Not applicable	Not applicable.
Short term exposure, Systemic, nhalable	Bulk transfers Dedicated facility; Material transfers Dedicated facility	Not applicable	Not applicable.
Short term exposure, Systemic,	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Bulk transfers Dedicated facility; Material transfers Dedicated facility	Not applicable	Not applicable.
Short term exposure, Local, nhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estimate	ation		
Contributing exposure scenario con Illing line, including weighing)	trolling worker exposure for 7: Tr	ansfer of substance or pre	paration into small containers (dedicated
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
ong term exposure, Systemic, Permal	Drum and small package filling Dedicated facility; Drum and small package filling Dedicated facility with local exhaust ventilation	1.37; 6.86	Not applicable.
ong term exposure, Systemic, nhalable	Drum and small package filling Dedicated facility; Drum and small package filling Dedicated facility with local exhaust ventilation	9.03; 2.15	Not applicable.
Diethylenetriamine, DETA		Identified use name: Fo	ormulation and (re)packing of substances and
,			mixtures - Industrial ROC01, PROC02, PROC03, PROC04, PROC05,
			PROC08a, PROC08b, PROC09, PROC15 tance supplied to that use in form of: As such

Mixing operations (open systems); Not applicable

Aerosols

Short term exposure, Systemic,

Inhalable

Not applicable.

Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Drum and small package filling Dedicated facility; Drum and small package filling Dedicated facility with local exhaust ventilation	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Drum and small package filling Dedicated facility; Drum and small package filling Dedicated facility with local exhaust ventilation	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Drum and small package filling Dedicated facility; Drum and small package filling Dedicated facility with local exhaust ventilation	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.

0 41 0 41441		
Section 3.1Workers	Exposure	estimation

Contributing exposure scenario controlling worker exposure for 8: Use as laboratory reagent

Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Laboratory activities	0.34	Not applicable.
Long term exposure, Systemic, Inhalable	Laboratory activities	9.03	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Laboratory activities	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Laboratory activities	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal Short term exposure, Local,	Laboratory activities Not applicable.	Not applicable Not applicable.	Not applicable. Not applicable.
Inhalable	• •		• •

Section 3.2 Environment Exposure estimation

Contributing exposure scenario controlling environmental exposure for 0: Formulation of preparations*

	Release from point source (local exposure estimation) kg/day	Total release for regional exposure estimation kg/day	Justification
Waste water	Not applicable.	Not applicable.	Not applicable.
Surface water	Not applicable.	Not applicable.	Not applicable.
air (direct + STP)	Not applicable.	Not applicable.	Not applicable.
Soil (direct releases only)	Not applicable.	Not applicable.	Not applicable.
	Value	Justification	
Concentration in sewage (PECstp) mg/l	Not applicable.	Not applicable.	
Concentration in sewage sludge mg/kg dwt	Not applicable.	Not applicable.	
	Local concentration	PEC aquatic (local+regional)	Justification
Fresh water mg/l	Not applicable.	Surface water, Dissolved During emission Resulting PEC local, water (mg/l): 0.0017; Surface water, Dissolved Annual average: 0.0017	Not applicable.
Marine water mg/l	Not applicable.	During emission Resulting PEC local, water (mg/l): 0.0002; Annual average, Dissolved, Resulting PEC local, water (mg/l): 0.0002	Not applicable.
Intermittent release. mg/l	Not applicable.	Not applicable.	Not applicable.
	Local concentration	PEC sediment (local+regional)	Justification

Diethylenetriamine, DETA

Identified use name: Formulation and (re)packing of substances and mixtures - Industrial Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC15

Substance supplied to that use in form of: As such
Sector of end use: SU03
Subsequent service life relevant for that use: No.

Environmental Release Category: ERC02

Fresh water sediment mg/kg dwt Not applicable. 3.2 During emission Marine water sediment mg/kg dwt Not applicable. 0.314 During emission **Local concentration** PEC soil (local+regional) **Justification** Agricultural soil averaged mg/kg Not applicable. 0.804, 30 days; 0.269, 180 days Not applicable. dwt Grassland averaged mg/kg dwt 0.119, 180 days Not applicable. Not applicable. Groundwater mg/l Not applicable. Not applicable. Not applicable. **Local concentration** PEC air (local+regional) **Justification** During emission mg/m³ Not applicable. Not applicable. Not applicable. Annual average mg/m³ Not applicable. 0.0301 Not applicable. Annual deposition mg/m2/d Not applicable. Not applicable. Not applicable. Local concentration PEC aquatic (local+regional) **Justification**

Section 4: Guidance to check compliance with the exposure scenario

Micro-organism mg/l

EnvironmentNot available.HealthNot available.

Section 5. Remarks: Additional good practice advice beyond the REACH CSA

Not applicable.

EnvironmentNot applicable.HealthNot applicable.Additional Good PracticesNot applicable.

Not applicable.

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC09, PROC15
Substance supplied to that use in form of: As such

Sector of end use: SU03
Subsequent service life relevant for that use: No.

Environmental Release Category: ERC02

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definitionMono-constituent substanceProduct nameDiethylenetriamine, DETA

Section 1: Title

Short title of the exposure scenario/List of use descriptors

Identified use name: Manufacture of substance - Industrial

Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC15

Substance supplied to that use in form of: As such

Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC01

Processes and activities covered by the exposure scenario

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

Contributing exposure scenario controlling worker exposure for 0: Use in closed process, no likelihood of exposure

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 100%

Physical state: Liquid.

Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

General exposures Continuous process (closed systems): No other specific measures identified.

Bulk product storage (closed systems): No other specific measures identified.

Respiratory protection: None.

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 1: Use in closed, continuous process with occasional controlled exposure

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 100%

Physical state: Liquid.

Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure:

Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

General exposures Continuous process with sample collection (closed systems): No other specific measures identified.

Respiratory protection: None.

Diethylenetriamine, DETA

Identified use name: Manufacture of substance - Industrial Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC15

Substance supplied to that use in form of: As such Sector of end use: SU03

Subsequent service life relevant for that use: No.

Environmental Release Category: ERC01

Industrial

Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 2: Use in closed batch process (synthesis or formulation) **Product Characteristics: Concentration of substance in product:** Covers percentage substance in the product up to 100% **Physical state:** Liquid. Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). Human factors not influenced by risk management: None identified Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures General exposures Use in contained batch processes with sample collection: No other specific measures identified. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 3: Use in batch and other process (synthesis) where opportunity for exposure arises Volatility: low Product Characteristics: Concentration of substance in product: Covers percentage substance in the product up to 100% **Physical state:** Liquid. Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). Human factors not influenced by risk management: None identified. Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures General exposures Batch process with sample collection (open systems): Provide extract ventilation to points where emissions occur. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 4: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities **Product Characteristics:** Volatility: low Concentration of substance in product: Covers percentage substance in the product up to 100% **Physical state:** Liquid. Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). Human factors not influenced by risk management: None identified. Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Equipment cleaning and maintenance: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 1 hour. Wear suitable gloves tested to EN374.

Equipment cleaning and maintenance: Wear suitable gloves tested to EN374. Wear a respirator conforming to EN140 with Type A filter or better.

Respiratory protection: None

Diethylenetriamine, DETA

Identified use name: Manufacture of substance - Industrial Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC15

Substance supplied to that use in form of: As such

Sector of end use: SU03 Subsequent service life relevant for that use: No.

Environmental Release Category: ERC01

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 5: Transfer of substance or preparation (charging/discharging) from/to

vessels/large containers at dedicated facilities

Volatility: low **Product Characteristics:**

Concentration of substance in product: Covers percentage substance in the product up to 100%

Physical state: Liquid. **Amounts used:** Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

None

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Bulk transfers Material transfers Dedicated facility: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 4 hours. Wear suitable gloves tested to EN374.

Respiratory protection:

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 6: Use as laboratory reagent

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 100%

Physical state: Liquid. Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Laboratory activities: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours.

None. Respiratory protection:

Section 2.2: Control of environmental exposure

Contributing exposure scenario controlling environmental exposure for 0: Manufacture of substances

Amounts used:

Fraction of EU tonnage used in region:

Not available Regional use tonnage (tonnes/year): Fraction of Regional tonnage used locally: Not available. Not available. Annual site tonnage (tonnes/year): Not available. Average Local Daily Tonnage (kg/day): Maximum daily site tonnage (kg/day): Not available. Frequency and duration of use: Continuous release.

Emission Days (days/year): 300

Environmental factors not influenced by risk management:

10 Local freshwater dilution factor:

Local marine water dilution factor: Not available.

Other operational conditions of use affecting environmental exposure:

Release fraction to air from process (initial release prior to

RMM):

Release fraction to soil from process (initial release prior to

Release fraction to wastewater from process (initial release

Not available prior to RMM):

Release fraction to air from wide dispersive use (regional

Release fraction to wastewater from wide dispersive use:

Not available.

Not available.

Not available.

Not available.

Diethylenetriamine, DETA

Identified use name: Manufacture of substance - Industrial Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a,

PROC08b, PROC15 Substance supplied to that use in form of: As such

Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC01

Release fraction to soil from wide dispersive use (regional Technical on-site conditions and measures to reduce or limit

discharges, air emissions and releases to soil:

Treat air emission to provide a typical removal efficiency of

Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of 3 (%):

If discharging to domestic sewage treatment plant, provide

Not available. the required onsite wastewater removal efficiency of ³ (%):

Conditions and measures related to municipal sewage treatment

Estimated substance removal from wastewater via domestic sewage treatment (%):

Total efficiency of removal from wastewater after on-site and offsite (domestic treatment plant) RMMs (%):

Conditions and measures related to external treatment of waste for Store finished products in closed containers (e.g., bulk tanks, drums, cans)

disposal: Incinerate, absorb, or adsorb vapours stripped from solution whenever necessary

Conditions and measures related to external recovery of waste: Local release to sewage, kg/day:

Fraction of substance in end-use products: Fraction of main source to local environment:

Section 3: Exposure estimation

Section 3.1Workers Exposure estimation Contributing exposure scenario controlling worker exposure for 0: Use in closed process, no likelihood of exposure			
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	General exposures Continuous process (closed systems); Bulk product storage (closed systems)	0.34	Not applicable.
Long term exposure, Systemic, Inhalable	General exposures Continuous process (closed systems); Bulk product storage (closed systems)	0.04	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	General exposures Continuous process (closed systems); Bulk product storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	General exposures Continuous process (closed systems); Bulk product storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	General exposures Continuous process (closed systems); Bulk product storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.

Not available.

Not available

Not applicable.

92.6%

150

1

1

Do not apply industrial sludge to natural soils.

Dispose of waste product or used containers according to local regulations.

Section 3.1Workers Exposure estimation

Contributing exposure scenario controlling worker exposure for 1: Use in closed, continuous process with occasional controlled exposure

Route of exposure **Dose/Concentration Contributing scenarios Justification** Long term exposure, Systemic, General exposures Continuous 1 37 Not applicable. **Dermal** process with sample collection (closed systems) Long term exposure, Systemic, General exposures Continuous 4.30 Not applicable. process with sample collection Inhalable (closed systems) Long term exposure, Systemic, Not applicable. Not applicable. Not applicable. Combined Long term exposure, Local, Dermal Not applicable. Not applicable. Not applicable. Long term exposure, Local, Not applicable. Not applicable. Not applicable. Inhalable Short term exposure, Systemic, Not applicable **Dermal**

Diethylenetriamine, DETA

Identified use name: Manufacture of substance - Industrial Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC15

Substance supplied to that use in form of: As such Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC01

	process with sample collection (closed systems)		
Short term exposure, Systemic, Inhalable	General exposures Continuous process with sample collection (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic,	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	General exposures Continuous process with sample collection (closed systems)	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estima			
Contributing exposure scenario con		•	
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	General exposures Use in contained batch processes with sample collection	0.34	Not applicable.
Long term exposure, Systemic, Inhalable	General exposures Use in contained batch processes with sample collection	12.90	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, nhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	General exposures Use in contained batch processes with sample collection	Not applicable	Not applicable.
Short term exposure, Systemic, nhalable	General exposures Use in contained batch processes with sample collection	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	General exposures Use in contained batch processes with sample collection	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estima Contributing exposure scenario con exposure arises		se in batch and other proce	ss (synthesis) where opportunity for
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	General exposures Batch process with sample collection (open systems)	6.86	Not applicable.
Long term exposure, Systemic, Inhalable	General exposures Batch process with sample collection (open systems)	2.15	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, nhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	General exposures Batch process with sample collection (open systems)		Not applicable.
Short term exposure, Systemic, nhalable	General exposures Batch process with sample collection (open systems)		Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	General exposures Batch process with sample collection (open systems)	Not applicable	Not applicable.

Not applicable.

General exposures Continuous

Short term exposure, Local,

Inhalable

systems)

Not applicable.

Not applicable.

Not applicable.

Section 3.1Workers Exposure estimated Contributing exposure scenario con		venefer of cubetones or properti	on (chausing/dischausing) from/to	
vessels/large containers at non-dedi		ransier of substance of preparati	on (charging/discharging) from/to	
Route of exposure	Contributing scenarios	Dose/Concentration	Justification	
Long term exposure, Systemic,	Equipment cleaning and	2.74	Not applicable.	
Dermal	maintenance			
Long term exposure, Systemic, Inhalable	Equipment cleaning and maintenance	6.02; 4.30	Not applicable.	
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.	
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.	
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.	
Short term exposure, Systemic, Dermal	Equipment cleaning and maintenance	Not applicable	Not applicable.	
Short term exposure, Systemic, Inhalable	Equipment cleaning and maintenance	Not applicable	Not applicable.	
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.	
Short term exposure, Local, Dermal	Equipment cleaning and maintenance	Not applicable	Not applicable.	
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.	
Costion 2 diMouleurs Francours and the	ation .			
Section 3.1Workers Exposure estimated Contributing exposure scenario con	trolling worker exposure for 5: T	ransfer of substance or preparati	on (charging/discharging) from/to	
vessels/large containers at dedicate		Dana (0 ana 1 a 1)	Local Manager	
Route of exposure	Contributing scenarios	Dose/Concentration	Justification	
Long term exposure, Systemic, Dermal	Bulk transfers Material transfers Dedicated facility	1.37	Not applicable.	
Long term exposure, Systemic, Inhalable	Bulk transfers Material transfers Dedicated facility	9.03	Not applicable.	
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.	
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.	
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.	
Short term exposure, Systemic, Dermal	Bulk transfers Material transfers Dedicated facility	Not applicable	Not applicable.	
Short term exposure, Systemic, Inhalable	Bulk transfers Material transfers Dedicated facility	Not applicable	Not applicable.	
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.	
Short term exposure, Local, Dermal	Bulk transfers Material transfers Dedicated facility	Not applicable	Not applicable.	
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.	
Section 3 1Workers Exposure estimate	ation			
Section 3.1Workers Exposure estimation Contributing exposure scenario controlling worker exposure for 6: Use as laboratory reagent				
Route of exposure	Contributing scenarios	Dose/Concentration	Justification	
Long term exposure, Systemic, Dermal	Laboratory activities	0.34	Not applicable.	
Long term exposure, Systemic, Inhalable	Laboratory activities	9.03	Not applicable.	
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.	
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.	
Long term exposure, Local, Dermai Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.	
Short term exposure, Systemic, Dermal	Laboratory activities	Not applicable	Not applicable.	
Short term exposure, Systemic, Inhalable	Laboratory activities	Not applicable	Not applicable.	
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.	
Short term exposure, Local, Dermal	Laboratory activities	Not applicable	Not applicable.	
Short term exposure, Local, Dermar Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.	

Inhalable

Environmental Release Category: ERC01

Section 3.2 Environment Exposure estimation

Contributing exposure scenario controlling environmental exposure for 0: Manufacture of substances

Release from point source (local exposure estimation)

kg/day

Waste water Not applicable. **Surface water** Not applicable. Not applicable. air (direct + STP) Soil (direct releases only)

Not applicable. Not applicable. Not applicable. Not applicable. **Justification**

Concentration in sewage (PECstp)

Concentration in sewage sludge

mg/kg dwt

Fresh water mg/l

Not applicable.

Not applicable. Not applicable.

Local concentration PEC aquatic (local+regional)

> Not applicable. Surface water, Dissolved During Not applicable. emission Resulting PEC local,

Not applicable.

Not applicable.

water (mg/l): 0.537; Surface water, Dissolved Annual average: 0.442

Total release for regional

exposure estimation kg/day

Marine water mg/l Not applicable. During emission Resulting PEC Not applicable.

local, water (mg/l): 0.054; Annual average, Dissolved, Resulting PEC local, water (mg/l): 0.044

Intermittent release, mg/l Not applicable. Not applicable. Not applicable.

Local concentration **Justification** Fresh water sediment mg/kg dwt Not applicable. 1028.3 **During emission** Marine water sediment mg/kg dwt 102.8 Not applicable. During emission **Local concentration** PEC soil (local+regional) **Justification** 0.002; 30, 180 days

Agricultural soil averaged mg/kg

dwt

Grassland averaged mg/kg dwt

Groundwater mg/l

During emission mg/m³ Annual average mg/m³ Annual deposition mg/m2/d

Micro-organism mg/l

Not applicable.

Not applicable. Not applicable.

Local concentration Not applicable. Not applicable. Not applicable. **Local concentration**

Not applicable.

PEC sediment (local+regional)

0.002, 180 days

Not applicable.

PEC air (local+regional) Not applicable. 2.65E-05 Not applicable. PEC aquatic (local+regional)

Justification

Justification

Not applicable.

Not applicable.

Not applicable.

Not applicable.

Not applicable.

Not applicable.

Not applicable. **Justification** Not applicable. Not applicable. Not applicable.

Justification Not applicable.

Section 4: Guidance to check compliance with the exposure scenario

Environment Not available. Health Not available.

Section 5. Remarks: Additional good practice advice beyond the REACH CSA

Environment Not applicable. Health Not applicable. **Additional Good Practices** Not applicable.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definitionMono-constituent substanceProduct nameDiethylenetriamine, DETA

Section 1: Title

Short title of the exposure scenario/List of use descriptors

Identified use name: Use as a PU curing agent for rigid foam production - Industrial

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b,

PROC10, PROC13, PROC15

Substance supplied to that use in form of: As such

Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC06c, ERC06d

Specific Environmental Release Category: FEICA 7

Processes and activities covered by the exposure scenario

covered 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

Contributing exposure scenario controlling worker exposure for 0: Use in closed process, no likelihood of exposure

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 5%.

Physical state: Liquid.

Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

General exposures (closed systems): No other specific measures identified.

Storage (closed systems): No other specific measures identified.

Respiratory protection: None.

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 1: Use in closed, continuous process with occasional controlled exposure

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 5%.

Physical state: Liquid.

Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

General exposures (closed systems) with sample collection: No other specific measures identified.

Film formation - air drying (closed systems): No other specific measures identified.

Respiratory protection: None.

Diethylenetriamine, DETA

Identified use name: Use as a PU curing agent for rigid foam production

- Industrial

Industrial

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC10, PROC13, PROC15 Substance supplied to that use in form of: As such

Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC06c, ERC06d Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 2: Use in closed batch process (synthesis or formulation) **Product Characteristics:** Volatility: low Concentration of substance in product: Covers percentage substance in the product up to 5%. **Physical state:** Liquid. Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). None identified. Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures Preparation of material for application Mixing operations (closed systems): No other specific measures identified. Article formation in mould Batch process (closed systems) Machine Manual: No other specific measures identified. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 3: Use in batch and other process (synthesis) where opportunity for exposure arises **Product Characteristics:** Volatility: low Concentration of substance in product: Covers percentage substance in the product up to 5%. **Physical state:** Liquid. Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). Human factors not influenced by risk management: None identified. Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures Preparation of material for application Mixing operations (open systems): Avoid carrying out activities involving exposure for more than 4 hours. Article formation in mould Foaming (open systems) Machine Manual: No other specific measures identified. Film formation - air drying (open systems): No other specific measures identified. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 4: Mixing or blending in batch processes for formulation of preparations* and articles (multistage and/or significant contact) **Product Characteristics:** Volatility: low Concentration of substance in product: Covers percentage substance in the product up to 5%. **Physical state:** Liquid. Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Preparation of material for application Mixing operations (open systems): Avoid carrying out activities involving exposure for more than 4 hours. Wear suitable gloves tested to EN374.

Respiratory protection: None

Diethylenetriamine, DETA

Identified use name: Use as a PU curing agent for rigid foam production

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC10, PROC13, PROC15 Substance supplied to that use in form of: As such

Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC06c, ERC06d Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 5: Industrial spraying **Product Characteristics:** Volatility: low **Concentration of substance in product:** Covers percentage substance in the product up to 5%. **Physical state:** Liquid. Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). Human factors not influenced by risk management: None identified Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures Spraying (automatic/robotic) Manual: Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 6: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities **Product Characteristics:** Volatility: low Concentration of substance in product: Covers percentage substance in the product up to 5%. **Physical state:** Liquid. Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). Human factors not influenced by risk management: None identified. Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures Material transfers Non-dedicated facility: Wear suitable gloves tested to EN374. Equipment cleaning and maintenance: Wear suitable gloves tested to EN374. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 7: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities **Product Characteristics:** Volatility: low Concentration of substance in product: Covers percentage substance in the product up to 5%. **Physical state:** Liquid. Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). None identified. Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures

Material transfers Dedicated facility Drum/batch transfers Transfer from/pouring from containers: No other specific measures identified.

Respiratory protection: None.

Diethylenetriamine, DETA

Identified use name: Use as a PU curing agent for rigid foam production

- Industrial

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC10, PROC13, PROC15 Substance supplied to that use in form of: As such

Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC06c, ERC06d Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 8: Roller application or brushing **Product Characteristics:** Volatility: low **Concentration of substance in product:** Covers percentage substance in the product up to 5%. **Physical state:** Liquid. Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). None identified. Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures Roller, spreader, flow application: Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 9: Treatment of articles by dipping and pouring **Product Characteristics:** Volatility: low Concentration of substance in product: Covers percentage substance in the product up to 5%. **Physical state:** Liquid. **Amounts used:** Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). Human factors not influenced by risk management: None identified. Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures Dipping, immersion and pouring: Wear suitable gloves tested to EN374. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 10: Use as laboratory reagent **Product Characteristics:** Volatility: low

Concentration of substance in product:Covers percentage substance in the product up to 5%.

Physical state: Liquid.

Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure:

Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Laboratory activities: No other specific measures identified.

Respiratory protection: None.

Section 2.2: Control of environmental exposure

Diethylenetriamine, DETA Identified use name: Use as a PU curing agent for rigid foam production

- inaustriai

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC10, PROC13, PROC15 Substance supplied to that use in form of: As such

Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC06c, ERC06d Contributing exposure scenario controlling environmental exposure for 0: Industrial use of monomers for manufacture of thermoplastics 10700 Tonnes/year Amounts used: Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): Not available. Fraction of Regional tonnage used locally: Not available. Annual site tonnage (tonnes/year): Not available. Not available. Average Local Daily Tonnage (kg/day): Maximum daily site tonnage (kg/day): 800 Frequency and duration of use: Continuous release. Emission Days (days/year): 220 Environmental factors not influenced by risk management: 10 Default Local freshwater dilution factor: Local marine water dilution factor: 100 Default Other operational conditions of use affecting environmental exposure: Release fraction to air from process (initial release prior to 1.70E-02 RMM): Release fraction to soil from process (initial release prior to 0.00F+00 RMM): Release fraction to wastewater from process (initial release 0.00E+00 prior to RMM): Not available. Release fraction to air from wide dispersive use (regional only): Release fraction to wastewater from wide dispersive use: Not available Release fraction to soil from wide dispersive use (regional Not available. only): Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil: Treat air emission to provide a typical removal efficiency of Not available. Treat on-site wastewater (prior to receiving water discharge) Not applicable. to provide the required removal efficiency of 3 (%): If discharging to domestic sewage treatment plant, provide Not available the required onsite wastewater removal efficiency of 3 (%): Conditions and measures related to municipal sewage treatment nlant: Estimated substance removal from wastewater via domestic 92 6% sewage treatment (%): Total efficiency of removal from wastewater after on-site and off-92.6% site (domestic treatment plant) RMMs (%): Maximum allowable site tonnage (Msafe) based on release following 214560 kg/day total wastewater treatment removal (kg/d): Conditions and measures related to external recovery of waste: Dispose of waste product or used containers according to local regulations. Local release to soil, kg/day: Local release to air, kg/day: 14 0 Local release to sewage, kg/day: Fraction of main source to local environment: 0.016 Contributing exposure scenario controlling environmental exposure for 1: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers 10700 Tonnes/year Amounts used: Fraction of EU tonnage used in region: Not available. Regional use tonnage (tonnes/year): Fraction of Regional tonnage used locally: Not available. Annual site tonnage (tonnes/year): Not available. Average Local Daily Tonnage (kg/day): Not available. Maximum daily site tonnage (kg/day): 800

Frequency and duration of use: Continuous release.

Emission Days (days/year): 220

Environmental factors not influenced by risk management:

Local freshwater dilution factor: 10 Default Local marine water dilution factor: 100 Default

Diethylenetriamine, DETA

Identified use name: Use as a PU curing agent for rigid foam production

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC10, PROC13, PROC15 Substance supplied to that use in form of: As such Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC06c, ERC06d

Other operational conditions of use affecting environmental exposure: Release fraction to air from process (initial release prior to 1.70E-02 RMM): Release fraction to soil from process (initial release prior to 0.00E+00 RMM): Release fraction to wastewater from process (initial release 0.00E+00 prior to RMM): Not available. Release fraction to air from wide dispersive use (regional only): Release fraction to wastewater from wide dispersive use: Not available. Release fraction to soil from wide dispersive use (regional Not available. Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil: Treat air emission to provide a typical removal efficiency of Not available Not applicable. Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of 3 (%): If discharging to domestic sewage treatment plant, provide Not available. the required onsite wastewater removal efficiency of 3 (%): Conditions and measures related to municipal sewage treatment Estimated substance removal from wastewater via domestic 92.6% sewage treatment (%): Total efficiency of removal from wastewater after on-site and off-92.6% site (domestic treatment plant) RMMs (%): Maximum allowable site tonnage (Msafe) based on release following 214560 kg/day total wastewater treatment removal (kg/d): Conditions and measures related to external recovery of waste: Dispose of waste product or used containers according to local regulations. Local release to soil, kg/day: Local release to air, kg/day: 14 Local release to sewage, kg/day: 0 Fraction of main source to local environment: 0.016

Section 3: Exposure estimation

Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Dermal	General exposures (closed systems); Storage (closed systems)	0.34	Not applicable.
Inhalable	General exposures (closed systems); Storage (closed systems)	0.01	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Dermal	General exposures (closed systems); Storage (closed systems)	Not applicable	Not applicable.
Inhalable	General exposures (closed systems); Storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
• , , ,	General exposures (closed systems); Storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.

Diethylenetriamine, DETA

Identified use name: Use as a PU curing agent for rigid foam production

- Industrial

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC10, PROC13, PROC15 Substance supplied to that use in form of: As such Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC06c, ERC06d

	•	•	ocess with occasional controlled exposure
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	General exposures (closed systems) with sample collection; Film formation - air drying (closed systems)	1.37	Not applicable.
Long term exposure, Systemic, Inhalable	General exposures (closed systems) with sample collection; Film formation - air drying (closed systems)	0.86	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	General exposures (closed systems) with sample collection; Film formation - air drying (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	General exposures (closed systems) with sample collection; Film formation - air drying (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	General exposures (closed systems) with sample collection; Film formation - air drying (closed systems)	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estimated Contributing exposure scenario con		se in closed batch process	(synthesis or formulation)
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (closed systems); Article formation in mould Batch process (closed systems) Machine Manual	0.34	Not applicable.
Long term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (closed systems); Article formation in mould Batch process (closed systems) Machine Manual	2.58	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, nhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (closed systems); Article formation in mould Batch process (closed systems) Machine Manual	Not applicable	Not applicable.
Short term exposure, Systemic, nhalable	Preparation of material for application Mixing operations (closed systems); Article formation in mould Batch process (closed systems) Machine Manual	Not applicable	Not applicable.
	Not applicable.	Not applicable.	Not applicable.
	тчог аррпоавіс.		
Short term exposure, Systemic, Combined Short term exposure, Local, Dermal	General exposures (closed systems); Storage (closed systems)	Not applicable	Not applicable.

Inhalable

Section 3.1Workers Exposure estimated Contributing exposure scenario con		se in batch and other process (s	ynthesis) where opportunity for
exposure arises	and manufacture of the or	• •	, companies oppositionly for
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols; Article formation in mould Foaming (open systems) Machine Manual; Film formation - air drying (open systems)	6.86; Not applicable; 6.86; 6.86	Not applicable.
Long term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (open systems); Aerosols; Article formation in mould Foaming (open systems) Machine Manual; Film formation - air drying (open systems)	2.58; 0.60; 4.30; 4.30	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols; Article formation in mould Foaming (open systems) Machine Manual; Film formation - air drying (open systems)	Not applicable	Not applicable.
Short term exposure, Systemic, nhalable	Preparation of material for application Mixing operations (open systems); Aerosols; Article formation in mould Foaming (open systems) Machine Manual; Film formation - air drying (open systems)	Not applicable	Not applicable.
Short term exposure, Systemic,	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols; Article formation in mould Foaming (open systems) Machine Manual; Film formation - air drying (open systems)	Not applicable	Not applicable.
Short term exposure, Local, nhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estima	ation		
Contributing exposure scenario con and articles (multistage and/or signi		ixing or blending in batch proce	sses for formulation of preparations*
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
ong term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols	2.74; Not applicable	Not applicable.
ong term exposure, Systemic, nhalable	Preparation of material for application Mixing operations (open systems); Aerosols	2.58; 0.60	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, nhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols	Not applicable	Not applicable.

Not applicable

Not applicable.

Not applicable

Diethylenetriamine, DETA

Short term exposure, Systemic,

Short term exposure, Systemic,

Inhalable

Preparation of material for

(open systems); Aerosols

Not applicable.

Short term exposure, Local, Dermal Preparation of material for

application Mixing operations

application Mixing operations (open systems); Aerosols

Identified use name: Use as a PU curing agent for rigid foam production

Not applicable.

Not applicable.

Not applicable.

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC10, PROC13, PROC15
Substance supplied to that use in form of: As such

Sector of end use: SU03 Subsequent service life relevant for that use: No. Environmental Release Category: ERC06c, ERC06d

tion		
rolling worker exposure for 5: In	dustrial spraying	
Contributing scenarios	Dose/Concentration	Justification
Spraying (automatic/robotic) Manual; Aerosols	2.14; Not applicable	Not applicable.
Spraying (automatic/robotic) Manual; Aerosols	4.30; 0.20	Not applicable.
Not applicable.	Not applicable.	Not applicable.
Not applicable.	Not applicable.	Not applicable.
Not applicable.	Not applicable.	Not applicable.
Spraying (automatic/robotic) Manual; Aerosols	Not applicable	Not applicable.
Spraying (automatic/robotic) Manual; Aerosols	Not applicable	Not applicable.
Not applicable.	Not applicable.	Not applicable.
Spraying (automatic/robotic) Manual; Aerosols	Not applicable	Not applicable.
Not applicable.	Not applicable.	Not applicable.
	ransfer of substance or prepara	ation (charging/discharging) from/to
Material transfers Non-dedicated facility; Equipment cleaning and maintenance	2.74	Not applicable.
Material transfers Non-dedicated facility; Equipment cleaning and maintenance	8.60	Not applicable.
Not applicable.	Not applicable.	Not applicable.
Not applicable.	Not applicable.	Not applicable.
Not applicable.	Not applicable.	Not applicable.
Material transfers Non-dedicated facility; Equipment cleaning and maintenance	Not applicable	Not applicable.
Material transfers Non-dedicated facility; Equipment cleaning and maintenance	Not applicable	Not applicable.
Not applicable.	Not applicable.	Not applicable.
Material transfers Non-dedicated facility; Equipment cleaning and maintenance	Not applicable	Not applicable.
Not applicable.	Not applicable.	Not applicable.
 tion		
rolling worker exposure for 7: Ti	ransfer of substance or prepara	ation (charging/discharging) from/to
Contributing scenarios	Dose/Concentration	Justification
Material transfers Dedicated facility Drum/batch transfers Transfer from/pouring from	6.86	Not applicable.
Material transfers Dedicated facility Drum/batch transfers Transfer from/pouring from containers	4.30	Not applicable.
Not applicable.	Not applicable.	Not applicable.
Not applicable. Not applicable.	Not applicable. Not applicable.	Not applicable. Not applicable.
••	Not applicable	
	Contributing scenarios Spraying (automatic/robotic) Manual; Aerosols Spraying (automatic/robotic) Manual; Aerosols Not applicable. Not applicable. Not applicable. Spraying (automatic/robotic) Manual; Aerosols Spraying (automatic/robotic) Manual; Aerosols Spraying (automatic/robotic) Manual; Aerosols Not applicable. Spraying (automatic/robotic) Manual; Aerosols Not applicable. Spraying (automatic/robotic) Manual; Aerosols Not applicable. Stion rolling worker exposure for 6: Totated facilities Contributing scenarios Material transfers Non-dedicated facility; Equipment cleaning and maintenance Material transfers Non-dedicated facility; Equipment cleaning and maintenance Not applicable. Not applicable. Material transfers Non-dedicated facility; Equipment cleaning and maintenance Material transfers Non-dedicated facility; Equipment cleaning and maintenance Not applicable. Material transfers Non-dedicated facility; Equipment cleaning and maintenance Not applicable. Material transfers Non-dedicated facility; Equipment cleaning and maintenance Not applicable. Material transfers Dodicated facility; Equipment cleaning and maintenance Not applicable. Material transfers Dodicated facility Drum/batch transfers Transfer from/pouring from containers Material transfers Dedicated facility Drum/batch transfers Transfer from/pouring from containers Material transfers Dedicated facility Drum/batch transfers Transfer from/pouring from containers Not applicable. Not applicable.	Spraying (automatic/robotic) Manual; Aerosols Not applicable.

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC10, PROC13, PROC15 Substance supplied to that use in form of: As such Sector of end use: SU03

	Material transfers Dedicated facility Drum/batch transfers Transfer from/pouring from		Not applicable.
Short term exposure, Systemic, Inhalable	containers Material transfers Dedicated facility Drum/batch transfers Transfer from/pouring from containers	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Material transfers Dedicated facility Drum/batch transfers Transfer from/pouring from containers	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estima			
Contributing exposure scenario con Route of exposure		oller application or brushing Dose/Concentration	Justification
Long term exposure, Systemic,	Contributing scenarios Roller, spreader, flow application	2.74	Not applicable.
Dermal Long term exposure, Systemic,	Roller, spreader, flow application	8.60	Not applicable.
nhalable Long term exposure, Systemic,	Not applicable.	Not applicable.	Not applicable.
Combined	тос аррисавіс.	тчог арричальс.	тот арриоаме.
Long term exposure, Local, Dermal Long term exposure, Local,	Not applicable. Not applicable.	Not applicable. Not applicable.	Not applicable. Not applicable.
Inhalable Short term exposure, Systemic, Dermal	Roller, spreader, flow application	Not applicable	Not applicable.
Short term exposure, Systemic, nhalable	Roller, spreader, flow application	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal Short term exposure, Local, nhalable	Roller, spreader, flow application Not applicable.	Not applicable Not applicable.	Not applicable. Not applicable.
Section 3.1Workers Exposure estima	ation		
Contributing exposure scenario con	trolling worker exposure for 9: T	reatment of articles by dipping a	and pouring
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Dipping, immersion and pouring	2.74	Not applicable.
Long term exposure, Systemic, nhalable	Dipping, immersion and pouring	8.60	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal Long term exposure, Local, nhalable	Not applicable. Not applicable.	Not applicable. Not applicable.	Not applicable. Not applicable.
Short term exposure, Systemic, Dermal	Dipping, immersion and pouring	Not applicable	Not applicable.
Short term exposure, Systemic, nhalable	Dipping, immersion and pouring	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal Short term exposure, Local, nhalable	Dipping, immersion and pouring Not applicable.	Not applicable Not applicable.	Not applicable. Not applicable.
Section 3.1Workers Exposure estima		Una na laborataria da	
Contributing exposure scenario con Route of exposure		Use as laboratory reagent Dose/Concentration	Justification
ong term exposure, Systemic,	Contributing scenarios Laboratory activities	0.34	Not applicable.
Dermal .ong term exposure, Systemic,	Laboratory activities	4.30	Not applicable.
nhalable .ong term exposure, Systemic, .ong term exposure, Systemic,	Not applicable.	Not applicable.	Not applicable.
Combined	.,		
Long term exposure, Local, Dermal Long term exposure, Local, nhalable	Not applicable. Not applicable.	Not applicable. Not applicable.	Not applicable. Not applicable.
Diethylenetriamine, DETA		Identified use name: Use as a P	PU curing agent for rigid foam production
		PROC07, PROC08	- Industrial 01, PROC02, PROC03, PROC04, PROC05, a, PROC08b, PROC10, PROC13, PROC15 e supplied to that use in form of: As such

Substance supplied to that use in form of: As such Sector of end use: SU03 Subsequent service life relevant for that use: No. Environmental Release Category: ERC06c, ERC06d

Short term exposure, Systemic, Not applicable Laboratory activities Not applicable. **Dermal** Short term exposure, Systemic, Laboratory activities Not applicable Not applicable. Inhalable Short term exposure, Systemic, Not applicable. Not applicable. Not applicable. Combined Short term exposure, Local, Dermal Laboratory activities Not applicable Not applicable. Short term exposure, Local, Not applicable. Not applicable. Not applicable. Inhalable

Section 3.2 Environment Exposure estimation

Contributing exposure scenario controlling environmental exposure for 0: Industrial use of monomers for manufacture of thermoplastics

	Release from point source (local exposure estimation) kg/day	Total release for regional exposure estimation kg/day	Justification
Waste water	Not applicable.	Not applicable.	Not applicable.
Surface water	Not applicable.	Not applicable.	Not applicable.
air (direct + STP)	Not applicable.	Not applicable.	Not applicable.
Soil (direct releases only)	Not applicable.	Not applicable.	Not applicable.
	Value	Justification	
Concentration in sewage (PECstp) mg/l	Not applicable.	Not applicable.	
Concentration in sewage sludge mg/kg dwt	Not applicable.	Not applicable.	
	Local concentration	PEC aquatic (local+regional)	Justification
Fresh water mg/l	Not applicable.	Surface water, Dissolved During emission Resulting PEC local, water (mg/l): 0.0017; Surface water, Dissolved Annual average: 0.0017	Not applicable.
Marine water mg/l	Not applicable.	During emission Resulting PEC local, water (mg/l): 0.0002; Annual average, Dissolved, Resulting PEC local, water (mg/l): 0.0002	Not applicable.
Intermittent release. mg/l	Not applicable.	Not applicable.	Not applicable.
	Local concentration	PEC sediment (local+regional)	Justification
Fresh water sediment mg/kg dwt	Not applicable.	3.19	During emission
Marine water sediment mg/kg dwt	Not applicable.	0.315	During emission
	Local concentration	PEC soil (local+regional)	Justification
Agricultural soil averaged mg/kg dwt	Not applicable.	0.798, 30 days; 0.264, 180 days	Not applicable.
Grassland averaged mg/kg dwt	Not applicable.	0.107, 180 days	Not applicable.
Groundwater mg/l	Not applicable.	Not applicable.	Not applicable.
	Local concentration	PEC air (local+regional)	Justification
During emission mg/m³	Not applicable.	Not applicable.	Not applicable.
Annual average mg/m³	Not applicable.	0.0023	Not applicable.
Annual deposition mg/m2/d	Not applicable.	Not applicable.	Not applicable.
	Local concentration	PEC aquatic (local+regional)	Justification
Micro-organism mg/l	Not applicable.	0	Not applicable.

Section 3.2 Environment Exposure estimation

Contributing exposure scenario controlling environmental exposure for 1: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

	Release from point source (local exposure estimation) kg/day	Total release for regional exposure estimation kg/day	Justification
Waste water	Not applicable.	Not applicable.	Not applicable.
Surface water	Not applicable.	Not applicable.	Not applicable.
air (direct + STP)	Not applicable.	Not applicable.	Not applicable.
Soil (direct releases only)	Not applicable.	Not applicable.	Not applicable.
	Value	Justification	
Concentration in sewage (PECstp) mg/l	Not applicable.	Not applicable.	
Concentration in sewage sludge mg/kg dwt	Not applicable.	Not applicable.	
	Local concentration	PEC aquatic (local+regional)	Justification

Diethylenetriamine, DETA

Identified use name: Use as a PU curing agent for rigid foam production

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC10, PROC13, PROC15
Substance supplied to that use in form of: As such Sector of end use: SU03
Subsequent service life relevant for that use: No.

Fresh water mg/l Not applicable. Surface water, Dissolved During Not applicable. emission Resulting PEC local, water (mg/l): 0.0017; Surface water, Dissolved Annual average: 0.0017 Marine water mg/l Not applicable. During emission Resulting PEC Not applicable. local, water (mg/l): 0.0002; Annual average, Dissolved, Resulting PEC local, water (mg/l): 0.0002 Intermittent release. mg/l Not applicable. Not applicable. Not applicable. **Local concentration** PEC sediment (local+regional) **Justification** Fresh water sediment mg/kg dwt Not applicable. 3.19 During emission Marine water sediment mg/kg dwt Not applicable. 0.315 During emission **Local concentration** PEC soil (local+regional) **Justification** 0.798, 30 days; 0.264, 180 days Agricultural soil averaged mg/kg Not applicable. Not applicable. dwt Grassland averaged mg/kg dwt Not applicable. 0.107, 180 days Not applicable. Groundwater mg/l Not applicable. Not applicable. Not applicable. **Local concentration** PEC air (local+regional) **Justification** During emission mg/m³ Not applicable. Not applicable. Not applicable. Annual average mg/m³ Not applicable. 0.0023 Not applicable. Annual deposition mg/m2/d Not applicable. Not applicable. Not applicable. **Local concentration** PEC aquatic (local+regional) **Justification** Micro-organism mg/l Not applicable. Not applicable.

Section 4: Guidance to check compliance with the exposure scenario

Environment Not available. Health Not available.

Section 5. Remarks: Additional good practice advice beyond the REACH CSA

Not applicable. Health Not applicable. **Additional Good Practices** Not applicable.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition Mono-constituent substance **Product name** Diethylenetriamine, DETA

Section 1: Title

Short title of the exposure scenario/List of use descriptors Identified use name: Use as a PU curing agent for rigid foam production - Professional

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19

Substance supplied to that use in form of: As such

Sector of end use: SU02a, SU02b

Subsequent service life relevant for that use: No. Environmental Release Category: ERC08c, ERC08f

Specific Environmental Release Category: FFICA 10

Processes and activities covered

by the exposure scenario

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, brush, spreader by hand or similar methods, 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

Contributing exposure scenario controlling worker exposure for 0: Use in closed process, no likelihood of exposure

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 5%.

Physical state: Liquid. Amounts used: Not applicable.

Covers daily exposures up to 8 hours (unless stated differently). Frequency and duration of use:

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

General exposures (closed systems): No other specific measures identified.

Storage (closed systems): No other specific measures identified.

Respiratory protection: None

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 1: Use in closed, continuous process with occasional controlled exposure

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 5%.

Physical state: Liquid. Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management:

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

General exposures (closed systems) with sample collection: No other specific measures identified.

Respiratory protection: None

Diethylenetriamine, DETA

Identified use name: Use as a PU curing agent for rigid foam production

- Professional

Professional

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19 Substance supplied to that use in form of: As such

Sector of end use: SU02a, SU02b Subsequent service life relevant for that use: No. Environmental Release Category: ERC08c, ERC08f

Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 2: Use in closed batch process (synthesis or formulation) **Product Characteristics:** Volatility: low Concentration of substance in product: Covers percentage substance in the product up to 5%. **Physical state:** Liquid. Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). None identified. Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures Preparation of material for application Mixing operations (closed systems): No other specific measures identified. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 3: Use in batch and other process (synthesis) where opportunity for exposure arises Volatility: low Product Characteristics: Concentration of substance in product: Covers percentage substance in the product up to 5%. **Physical state:** Liquid. Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures Preparation of material for application Mixing operations (open systems): Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure operation is undertaken outdoors. Film formation - air drying: Wear suitable gloves tested to EN374. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 4: Mixing or blending in batch processes for formulation of preparations* and articles (multistage and/or significant contact) **Product Characteristics:** Volatility: low Concentration of substance in product: Covers percentage substance in the product up to 5%. **Physical state:** Liquid. Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). Human factors not influenced by risk management: None identified. Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Preparation of material for application Mixing operations (open systems): Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). or Ensure operation is undertaken outdoors. Wear suitable gloves tested to EN374.

Respiratory protection: None

Diethylenetriamine, DETA

Identified use name: Use as a PU curing agent for rigid foam production

- Professional

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19 Substance supplied to that use in form of: As such

Sector of end use: SU02a, SU02b Subsequent service life relevant for that use: No.

Environmental Release Category: ERC08c, ERC08f

Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 5: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities **Product Characteristics:** Volatility: low Concentration of substance in product: Covers percentage substance in the product up to 5%. **Physical state:** L iquid Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). Human factors not influenced by risk management: None identified. Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures Material transfers Non-dedicated facility Drum/batch transfers Transfer from/pouring from containers: Avoid carrying out activities involving exposure for more than 4 hours. Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training. Equipment cleaning and maintenance: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). or Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 4 hours. Wear suitable gloves tested to EN374. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 6: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities **Product Characteristics:** Volatility: low Concentration of substance in product: Covers percentage substance in the product up to 5%. **Physical state:** L iquid Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures Material transfers Dedicated facility Drum/batch transfers Transfer from/pouring from containers: Wear suitable gloves tested to EN374. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 7: Roller application or brushing **Product Characteristics:** Volatility: low Concentration of substance in product: Covers percentage substance in the product up to 5%.

Physical state: Liquid. Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Roller, spreader, flow application: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). or Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 4 hours. Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training.

Respiratory protection: None

Diethylenetriamine, DETA

Identified use name: Use as a PU curing agent for rigid foam production

- Professional

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19 Substance supplied to that use in form of: As such Sector of end use: SU02a, SU02b

Subsequent service life relevant for that use: No. Environmental Release Category: ERC08c, ERC08f

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 8: Non industrial spraying

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 5%.

Physical state: Liquid. Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

None identified. Human factors not influenced by risk management:

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Spraying Manual: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). or Ensure operation is undertaken outdoors. Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Wear a respirator conforming to EN140 with Type A filter or better.

Respiratory protection:

None

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 9: Treatment of articles by dipping and pouring

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 5%.

Physical state: Liquid. **Amounts used:** Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Foaming Manual: Wear suitable gloves tested to EN374.

Respiratory protection:

None

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 10: Use as laboratory reagent

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 5%.

Physical state: Liquid. **Amounts used:** Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Laboratory activities: No other specific measures identified.

Respiratory protection:

None

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 11: Hand-mixing with intimate contact and only PPE available

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 5%.

Physical state: Liquid. Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Diethylenetriamine, DETA

Identified use name: Use as a PU curing agent for rigid foam production

- Professional

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19 Substance supplied to that use in form of: As such

Sector of end use: SU02a, SU02b Subsequent service life relevant for that use: No.

Environmental Release Category: ERC08c, ERC08f 49/89

Contributing scenarios: Operational conditions and risk management measures

Preparation of material for application Mixing operations (open systems): Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). or Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 1 hour. Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.

Respiratory protection: None.

Section 2.2: Control of environmental exposure

Contributing exposure scenario controlling environmental exposure for 0: Wide dispersive indoor use resulting in inclusion into or onto a

1.50E-02

Not available

Not available

Not available.

Not available.

Not available.

92.6%

92.6%

10700 Tonnes/year Amounts used:

Fraction of EU tonnage used in region: 0.1

Regional use tonnage (tonnes/year): Not available. Fraction of Regional tonnage used locally: Not available. Not available. Annual site tonnage (tonnes/year): Average Local Daily Tonnage (kg/day): Not available.

Maximum daily site tonnage (kg/day): 5.8

Frequency and duration of use: Continuous release.

365 **Emission Days (days/year):**

Environmental factors not influenced by risk management:

Local freshwater dilution factor: 10 Default Local marine water dilution factor: 100 Default

Other operational conditions of use affecting environmental

exposure:

Release fraction to air from process (initial release prior to

RMM):

Release fraction to soil from process (initial release prior to

Release fraction to wastewater from process (initial release

prior to RMM):

Release fraction to air from wide dispersive use (regional

only):

Release fraction to wastewater from wide dispersive use: Release fraction to soil from wide dispersive use (regional

only):

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil:

Treat air emission to provide a typical removal efficiency of

(%):

Treat on-site wastewater (prior to receiving water discharge) Not applicable.

to provide the required removal efficiency of 3 (%):

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of ³ (%):

Conditions and measures related to municipal sewage treatment plant:

Estimated substance removal from wastewater via domestic sewage treatment (%):

Total efficiency of removal from wastewater after on-site and offsite (domestic treatment plant) RMMs (%):

Maximum allowable site tonnage (Msafe) based on release following 1730 kg/day

total wastewater treatment removal (kg/d):

Diethylenetriamine, DETA

Conditions and measures related to external recovery of waste:

Local release to soil, kg/day:

Local release to air, kg/day:

Local release to sewage, kg/day: 8.80E-02 Fraction of main source to local environment: 0.002

Identified use name: Use as a PU curing agent for rigid foam production

- Professional

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19 Substance supplied to that use in form of: As such Sector of end use: SU02a, SU02b

Dispose of waste product or used containers according to local regulations.

Subsequent service life relevant for that use: No.

Environmental Release Category: ERC08c, ERC08f

Contributing exposure scenario controlling environmental exposure for 1: Wide dispersive outdoor use resulting in inclusion into or onto a matrix Amounts used: 10700 Tonnes/year Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): Not available. Fraction of Regional tonnage used locally: Not available. Annual site tonnage (tonnes/year): Not available. Average Local Daily Tonnage (kg/day): Not available Maximum daily site tonnage (kg/day): 5.8 Frequency and duration of use: Continuous release. Emission Days (days/year): 365 Environmental factors not influenced by risk management: Local freshwater dilution factor: 10 Default Local marine water dilution factor: 100 Default Other operational conditions of use affecting environmental Release fraction to air from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to Release fraction to wastewater from process (initial release 1.50E-02 prior to RMM): Release fraction to air from wide dispersive use (regional Not available. only): Release fraction to wastewater from wide dispersive use: Not available. Not available. Release fraction to soil from wide dispersive use (regional only): Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil: Treat air emission to provide a typical removal efficiency of Not available. (%): Treat on-site wastewater (prior to receiving water discharge) Not applicable. to provide the required removal efficiency of 3 (%): If discharging to domestic sewage treatment plant, provide Not available. the required onsite wastewater removal efficiency of ³ (%): Conditions and measures related to municipal sewage treatment plant: Estimated substance removal from wastewater via domestic 92 6% sewage treatment (%): 92.6% Total efficiency of removal from wastewater after on-site and offsite (domestic treatment plant) RMMs (%): Maximum allowable site tonnage (Msafe) based on release following 1730 kg/day total wastewater treatment removal (kg/d): Conditions and measures related to external recovery of waste: Dispose of waste product or used containers according to local regulations. Local release to soil, kg/day: Local release to air, kg/day: 0 Local release to sewage, kg/day: 8.80E-02

Section 3: Exposure estimation

Fraction of main source to local environment:

Long term exposure, Local, Dermal Not applicable.

Section 3.1Workers Exposure esti Contributing exposure scenario c		: Use in closed process, no like	elihood of exposure
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	General exposures (closed systems); Storage (closed systems)	0.34	Not applicable.
Long term exposure, Systemic, Inhalable	General exposures (closed systems); Storage (closed systems)	0.01	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.

Not applicable.

0.002

Diethylenetriamine, DETA

Identified use name: Use as a PU curing agent for rigid foam production - Professional

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19 Substance supplied to that use in form of: As such Sector of end use: SU02a, SU02b Subsequent service life relevant for that use: No.

Not applicable.

Environmental Release Category: ERC08c, ERC08f

Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	General exposures (closed systems); Storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	General exposures (closed systems); Storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	General exposures (closed systems); Storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.

Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	General exposures (closed systems) with sample collection	1.37	Not applicable.
Long term exposure, Systemic, Inhalable	General exposures (closed systems) with sample collection	4.30	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	General exposures (closed systems) with sample collection	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	General exposures (closed systems) with sample collection	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	General exposures (closed systems) with sample collection	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.

Section 3.1Workers Exposure estimation

Contributing exposure scenario controlling worker exposure for 2: Use in closed batch process (synthesis or formulation)

Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (closed systems)	0.34	Not applicable.
Long term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (closed systems)	2.58	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Preparation of material for application Mixing operations (closed systems)	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.

Diethylenetriamine, DETA

Identified use name: Use as a PU curing agent for rigid foam production

- Professional

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19 Substance supplied to that use in form of: As such Sector of end use: SU02a, SU02b

Subsequent service life relevant for that use: No. Environmental Release Category: ERC08c, ERC08f

Contributing exposure scenario con exposure arises	trolling worker exposure for 3: l	Jse in batch and other process	(synthesis) where opportunity for
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols; Film formation - air drying	6.86; Not applicable; 1.37	Not applicable.
Long term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (open systems); Aerosols; Film formation - air drying	6.02; 0.70; 8.60	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols; Film formation - air drying	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (open systems); Aerosols; Film formation - air drying	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols; Film formation - air drying	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.

Section 3	3.1Wor	kers Ex	cposure	estima	tion
-----------	--------	---------	---------	--------	------

Contributing exposure scenario controlling worker exposure for 4: Mixing or blending in batch processes for formulation of preparations* and articles (multistage and/or significant contact)

, ,	•		
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols	2.74; Not applicable	Not applicable.
Long term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (open systems); Aerosols	6.02; 0.70	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (open systems); Aerosols	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.

Section 3.1Workers Exposure estimation

Contributing exposure scenario controlling worker exposure for 5: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Poste of associated facilities

Long term exposure, Systemic, Dermal

Contributing scenarios

Material transfers Non-dedicated facility Drum/batch transfers
Transfer from/pouring from containers; Equipment cleaning

and maintenance

Dose/Concentration

Justification
Not applicable.

Diethylenetriamine, DETA

Identified use name: Use as a PU curing agent for rigid foam production - Professional

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19
Substance supplied to that use in form of: As such Sector of end use: SU02a, SU02b

Subsequent service life relevant for that use: No. Environmental Release Category: ERC08c, ERC08f

Long term exposure, Systemic, Inhalable	Material transfers Non-dedicated facility Drum/batch transfers Transfer from/pouring from containers; Equipment cleaning and maintenance	12.90; 9.03	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal Long term exposure, Local, Inhalable	Not applicable. Not applicable.	Not applicable. Not applicable.	Not applicable. Not applicable.
Short term exposure, Systemic, Dermal	Material transfers Non-dedicated facility Drum/batch transfers Transfer from/pouring from containers; Equipment cleaning and maintenance	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Material transfers Non-dedicated facility Drum/batch transfers Transfer from/pouring from containers; Equipment cleaning and maintenance	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Material transfers Non-dedicated facility Drum/batch transfers Transfer from/pouring from containers; Equipment cleaning and maintenance	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estima Contributing exposure scenario convessels/large containers at dedicate	trolling worker exposure for 6: T	ransfer of substance or pre	paration (charging/discharging) from/to
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Material transfers Dedicated facility Drum/batch transfers Transfer from/pouring from containers	1.37	Not applicable.
Long term exposure, Systemic, Inhalable	Material transfers Dedicated facility Drum/batch transfers Transfer from/pouring from containers	8.60	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal Long term exposure, Local, Inhalable	Not applicable. Not applicable.	Not applicable. Not applicable.	Not applicable. Not applicable.
Short term exposure, Systemic, Dermal	Material transfers Dedicated facility Drum/batch transfers Transfer from/pouring from containers	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Material transfers Dedicated facility Drum/batch transfers Transfer from/pouring from containers	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Material transfers Dedicated facility Drum/batch transfers Transfer from/pouring from containers	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estima	ation		
Contributing exposure scenario con		oller application or brushing	g
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Roller, spreader, flow application	2.74	Not applicable.
Long term exposure, Systemic, Inhalable	Roller, spreader, flow application	9.03	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Diethylenetriamine, DETA		Identified use name: Use a	s a PU curing agent for rigid foam productior

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19
Substance supplied to that use in form of: As such Sector of end use: SU02a, SU02b
Subsequent service life relevant for that use: No.

nhalable			
chort term exposure, Systemic,	Roller, spreader, flow application	Not applicable	Not applicable.
hort term exposure, Systemic,	Roller, spreader, flow application	Not applicable	Not applicable.
hort term exposure, Systemic, ombined	Not applicable.	Not applicable.	Not applicable.
hort term exposure, Local, Dermal hort term exposure, Local, ihalable	Roller, spreader, flow application Not applicable.	Not applicable Not applicable.	Not applicable. Not applicable.
ection 3.1Workers Exposure estima ontributing exposure scenario cont		on industrial enraving	
oute of exposure	Contributing scenarios	Dose/Concentration	Justification
ong term exposure, Systemic, ermal	Spraying Manual; Aerosols	5.36; Not applicable	Not applicable.
ong term exposure, Systemic, halable	Spraying Manual; Aerosols	6.02; 0.28	Not applicable.
ong term exposure, Systemic,	Not applicable.	Not applicable.	Not applicable.
ong term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
ong term exposure, Local,	Not applicable.	Not applicable.	Not applicable.
halable hort term exposure, Systemic,	Spraying Manual; Aerosols	Not applicable	Not applicable.
ermal	•		
hort term exposure, Systemic,	Spraying Manual; Aerosols	Not applicable	Not applicable.
hort term exposure, Systemic, ombined	Not applicable.	Not applicable.	Not applicable.
hort term exposure, Local, Dermal hort term exposure, Local, nhalable	Spraying Manual; Aerosols Not applicable.	Not applicable Not applicable.	Not applicable. Not applicable.
ection 3.1Workers Exposure estima			
ontributing exposure scenario conf			
oute of exposure	Contributing scenarios	Dose/Concentration	Justification
ong term exposure, Systemic, ermal	Foaming Manual	2.74	Not applicable.
ong term exposure, Systemic, ihalable	General exposures (closed systems); Storage (closed systems)	8.60	Not applicable.
ong term exposure, Systemic, ombined	Not applicable.	Not applicable.	Not applicable.
ong term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
ong term exposure, Local, ihalable	Not applicable.	Not applicable.	Not applicable.
hort term exposure, Systemic, ermal	General exposures (closed systems); Storage (closed systems)	Not applicable	Not applicable.
hort term exposure, Systemic, nhalable	General exposures (closed systems); Storage (closed systems)	Not applicable	Not applicable.
hort term exposure, Systemic, ombined	Not applicable.	Not applicable.	Not applicable.
hort term exposure, Local, Dermal	General exposures (closed systems); Storage (closed	Not applicable	Not applicable.
hort term exposure, Local, nhalable	systems) Not applicable.	Not applicable.	Not applicable.
ection 3.1Workers Exposure estima		Use as labor 4	
ontributing exposure scenario conf			
oute of exposure	Contributing scenarios	Dose/Concentration	Justification Not applied by
ong term exposure, Systemic, ermal	Laboratory activities	0.34	Not applicable.
ong term exposure, Systemic,	Laboratory activities	4.30	Not applicable.
ong term exposure, Systemic, ombined	Not applicable.	Not applicable.	Not applicable.
ong term exposure, Local, Dermal	Not applicable. Not applicable.	Not applicable. Not applicable.	Not applicable. Not applicable.
ong term exposure, Local, nhalable			

Not applicable.

Not applicable.

Long term exposure, Local,

Not applicable.

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19 Substance supplied to that use in form of: As such Sector of end use: SU02a, SU02b Subsequent service life relevant for that use: No. Environmental Release Category: ERC08c, ERC08f

Dermal			
Short term exposure, Systemic, Inhalable	Laboratory activities	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal Short term exposure, Local, Inhalable	Laboratory activities Not applicable.	Not applicable Not applicable.	Not applicable. Not applicable.
Section 3.1Workers Exposure estimates Contributing exposure scenario con		Hand-mixing with intimate contact	et and only PPE available
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols	7.07; Not applicable	Not applicable.
Long term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (open systems); Aerosols	3.01; 0.14	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (open systems); Aerosols	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols	Not applicable	Not applicable.
Short term exposure, Local,	Not applicable.	Not applicable.	Not applicable.

Not applicable

Not applicable.

Section 3.2 Environment Exposure estimation

Inhalable

Short term exposure, Systemic,

Laboratory activities

Contributing exposure scenario controlling environmental exposure for 0: Wide dispersive indoor use resulting in inclusion into or onto a matrix

	Release from point source (local exposure estimation) kg/day	Total release for regional exposure estimation kg/day	Justification
Waste water	Not applicable.	Not applicable.	Not applicable.
Surface water	Not applicable.	Not applicable.	Not applicable.
air (direct + STP)	Not applicable.	Not applicable.	Not applicable.
Soil (direct releases only)	Not applicable.	Not applicable.	Not applicable.
	Value	Justification	
Concentration in sewage (PECstp) mg/l	Not applicable.	Not applicable.	
Concentration in sewage sludge mg/kg dwt	Not applicable.	Not applicable.	
	Local concentration	PEC aquatic (local+regional)	Justification
Fresh water mg/l	Not applicable.	Surface water, Dissolved During emission Resulting PEC local, water (mg/l): 0.0019; Surface water, Dissolved Annual average: 0.0019	Not applicable.
Marine water mg/l	Not applicable.	During emission Resulting PEC local, water (mg/l): 0.0002; Annual average, Dissolved, Resulting PEC local, water (mg/l): 0.0002	Not applicable.
Intermittent release. mg/l	Not applicable.	Not applicable.	Not applicable.
	Local concentration	PEC sediment (local+regional)	Justification
Fresh water sediment mg/kg dwt	Not applicable.	3.78	During emission
Marine water sediment mg/kg dwt	Not applicable.	0.375	During emission
	Local concentration	PEC soil (local+regional)	Justification
Agricultural soil averaged mg/kg dwt	Not applicable.	0.071, 30 days; 0.024, 180 days	Not applicable.

Diethylenetriamine, DETA

Identified use name: Use as a PU curing agent for rigid foam production - Professional

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19
Substance supplied to that use in form of: As such Sector of end use: SU02a, SU02b
Subsequent service life relevant for that use: No. Environmental Release Category: ERC08c, ERC08f

Grassland averaged mg/kg dwt Not applicable. 0.011, 180 days Not applicable. Groundwater mg/l Not applicable. Not applicable. Not applicable. **Justification Local concentration** PEC air (local+regional) During emission mg/m³ Not applicable. Not applicable. Not applicable. Annual average mg/m³ Not applicable. 2.06E-05 Not applicable. Annual deposition mg/m2/d Not applicable. Not applicable. Not applicable. Local concentration PEC aquatic (local+regional) **Justification** Micro-organism mg/l Not applicable. 0.0032 Not applicable.

Section 3.2 Environment Exposure estimation

Contributing exposure scenario controlling environmental exposure for 1: Wide dispersive outdoor use resulting in inclusion into or onto a matrix

Justification Release from point source Total release for regional (local exposure estimation) exposure estimation kg/day Not applicable. Not applicable. Not applicable. Waste water **Surface water** Not applicable. Not applicable. Not applicable. air (direct + STP) Not applicable. Not applicable. Not applicable. Soil (direct releases only) Not applicable. Not applicable. Not applicable. **Value Justification** Concentration in sewage (PECstp) Not applicable. Not applicable. Concentration in sewage sludge Not applicable. Not applicable. mg/kg dwt **Local concentration** PEC aquatic (local+regional) **Justification** Fresh water mg/l Not applicable. Surface water, Dissolved During Not applicable. emission Resulting PEC local, water (mg/l): 0.0019; Surface water, Dissolved Annual average: 0.0019 During emission Resulting PEC Marine water mg/l Not applicable. Not applicable. local, water (mg/l): 0.0002; Annual average, Dissolved, Resulting PEC local, water (mg/l): 0.0002 Intermittent release. mg/l Not applicable. Not applicable. Not applicable. PEC sediment (local+regional) **Justification Local concentration** 3.78 Not applicable. Fresh water sediment mg/kg dwt During emission Marine water sediment mg/kg dwt Not applicable. 0.375 During emission PEC soil (local+regional) **Local concentration Justification** Agricultural soil averaged mg/kg Not applicable. 0.071, 30 days; 0.024, 180 days Not applicable. 0.011, 180 days Grassland averaged mg/kg dwt Not applicable. Not applicable. Groundwater mg/l Not applicable. Not applicable. Not applicable. **Justification Local concentration** PEC air (local+regional) During emission mg/m³ Not applicable. Not applicable. Not applicable. Annual average mg/m³ Not applicable. 2.06E-05 Not applicable. Annual deposition mg/m2/d Not applicable. Not applicable. Not applicable. Local concentration PEC aquatic (local+regional) **Justification**

Section 4: Guidance to check compliance with the exposure scenario

Micro-organism mg/l

EnvironmentNot available.HealthNot available.

0.0032

Section 5. Remarks: Additional good practice advice beyond the REACH CSA

Not applicable.

EnvironmentNot applicable.HealthNot applicable.Additional Good PracticesNot applicable.

Diethylenetriamine, DETA Identified use name: Use as a PU curing agent for rigid foam production

- Professional

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19 Substance supplied to that use in form of: As such Sector of end use: SU02a, SU02b

Not applicable.

Subsequent service life relevant for that use: No. Environmental Release Category: ERC08c, ERC08f

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition Mono-constituent substance **Product name** Diethylenetriamine, DETA

Section 1: Title

Short title of the exposure scenario/List of use descriptors Identified use name: Use as an epoxy curing agent - Industrial

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b,

PROC10, PROC13, PROC15

Substance supplied to that use in form of: As such

Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC06c, ERC06d

Specific Environmental Release Category: FFICA 7

Processes and activities covered

by the exposure scenario

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

Contributing exposure scenario controlling worker exposure for 0: Use in closed process, no likelihood of exposure

Product Characteristics: Volatility: low

Covers concentrations up to 50% Concentration of substance in product:

Physical state: Liquid. Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

General exposures (closed systems): No other specific measures identified.

Bulk product storage (closed systems): No other specific measures identified.

Respiratory protection: None

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 1: Use in closed, continuous process with occasional controlled exposure

Product Characteristics: Volatility: low

Concentration of substance in product: Covers concentrations up to 50%

Physical state: L iquid Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management:

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

General exposures (closed systems) with sample collection: No other specific measures identified.

Injection moulding of articles (closed systems): No other specific measures identified.

Film formation - air drying (closed systems): No other specific measures identified.

Respiratory protection: None

Diethylenetriamine, DETA

Identified use name: Use as an epoxy curing agent - Industrial Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC10, PROC13, PROC15 Substance supplied to that use in form of: As such Sector of end use: SU03 Subsequent service life relevant for that use: No.

Environmental Release Category: ERC06c, ERC06d

Industrial

Section 2.1 Control of worker exposure	
Contributing exposure scenario controlling worker exposur	re for 2: Use in closed batch process (synthesis or formulation)
Product Characteristics:	Volatility: low
Concentration of substance in product:	Covers concentrations up to 50%
Physical state:	Liquid.
Amounts used:	Not applicable.
Frequency and duration of use:	Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management:	None identified.
Other operational conditions affecting worker exposure:	Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently).
Contributing scenarios: Operational conditions and risk ma Preparation of material for application Mixing operations (closed s	- -
operation of material to appropriate or maning approximate (coords)	
Respiratory protection:	None.
Section 2.1 Control of worker exposure	
	re for 3: Use in batch and other process (synthesis) where opportunity for
exposure arises	Valatility law
Product Characteristics:	Volatility: low
Concentration of substance in product:	Covers concentrations up to 50%
Physical state:	Liquid.
Amounts used:	Not applicable.
Frequency and duration of use:	Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management:	None identified.
Other operational conditions affecting worker exposure:	Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently).
Contributing scenarios: Operational conditions and risk ma Preparation of material for application Mixing operations (open sy	inagement measures stems): Provide extract ventilation to points where emissions occur.
Film formation - air drying (open systems): Wear suitable gloves	tested to EN374.
Respiratory protection:	None.
Continue 2.4 Control of worden company	
Section 2.1 Control of worker exposure	and the second s
and articles (multistage and/or significant contact)	re for 4: Mixing or blending in batch processes for formulation of preparations*
Product Characteristics:	Volatility: low
Concentration of substance in product:	Covers concentrations up to 50%
Physical state:	Liquid.
Amounts used:	Not applicable.
Frequency and duration of use:	Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management:	None identified.
Other operational conditions affecting worker exposure:	Assumes a good basic standard of occupational hygiene is implemented.
Contails sting according Constituted conditions and viels made	Assumes activities are at ambient temperature (unless stated differently).
Contributing scenarios: Operational conditions and risk ma Preparation of material for application Mixing operations (open sy	stems): Provide extract ventilation to points where emissions occur.
3 44 444 444 444	,
Respiratory protection:	None.

Section 2.1 Control of worker exposure	
Contributing exposure scenario controlling worker exposur	e for 5: Industrial spraying
Product Characteristics:	Volatility: low
Concentration of substance in product:	Covers concentrations up to 50%
Physical state:	Liquid.
Amounts used:	Not applicable.
Frequency and duration of use:	Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management:	None identified.
Other operational conditions affecting worker exposure:	Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently).
Contributing scenarios: Operational conditions and risk ma	· ·
Spraying (automatic/robotic) Manual: Apply within a vented cab si	upplied with filtered air under positive pressure and with a protection factor of >20.
Respiratory protection:	None.
Section 2.1 Control of worker exposure	
•	e for 6: Transfer of substance or preparation (charging/discharging) from/to
vessels/large containers at non-dedicated facilities	o for or transfer of substance of proparation (onlyinging also harging) from to
Product Characteristics:	Volatility: low
Concentration of substance in product:	Covers concentrations up to 50%
Physical state:	Liquid.
Amounts used:	Not applicable.
Frequency and duration of use:	Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management:	None identified.
Other operational conditions affecting worker exposure:	Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently).
Contributing scenarios: Operational conditions and risk ma	nagement measures
	om containers Non-dedicated facility: Provide a good standard of general ventilation (not lertaken outdoors. Avoid carrying out activities involving exposure for more than 4 hours.
Equipment cleaning and maintenance: Provide a good standard o undertaken outdoors. Avoid carrying out activities involving exposi	f general ventilation (not less than 3 to 5 air changes per hour). or Ensure operation is ure for more than 4 hours. Wear suitable gloves tested to EN374.
Respiratory protection:	None.
Section 2.1 Control of worker exposure	
Contributing exposure scenario controlling worker exposur vessels/large containers at dedicated facilities	e for 7: Transfer of substance or preparation (charging/discharging) from/to
Product Characteristics:	Volatility: low
Concentration of substance in product:	Covers concentrations up to 50%
Physical state:	Liquid.
Amounts used:	Not applicable.
Frequency and duration of use:	Covers daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management:	None identified.
Other operational conditions affecting worker exposure:	Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Material transfers Drum/batch transfers Transfer from/pouring from containers Dedicated facility: Wear suitable gloves tested to EN374.

Respiratory protection: None.

Diethylenetriamine, DETA

Concentration of substance in product: Physical state: Amounts used: Frequency and duration of use: Cove Human factors not influenced by risk management: None Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk managem Roller, spreader, flow application: Provide a good standard of general ver involving exposure for more than 4 hours. Wear chemical-resistant gloves Respiratory protection: Respiratory protection: Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 9: Product Characteristics: Concentration of substance in product: Physical state: Amounts used: Frequency and duration of use: Cove Human factors not influenced by risk management: None Other operational conditions affecting worker exposure: Assu	pplicable. rs daily exposures up to 8 hours (unless stated differently). identified. mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures itilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities is (tested to EN374) in combination with 'basic' employee training. Treatment of articles by dipping and pouring ility: low rs concentrations up to 50% d. pplicable. rs daily exposures up to 8 hours (unless stated differently). identified. mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures
Physical state: Amounts used: Frequency and duration of use: Cove Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk managem Roller, spreader, flow application: Provide a good standard of general ver involving exposure for more than 4 hours. Wear chemical-resistant gloves Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 9: Product Characteristics: Concentration of substance in product: Physical state: Amounts used: Frequency and duration of use: Cove Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk managem Dipping, immersion and pouring: Provide a good standard of general vent	pplicable. rs daily exposures up to 8 hours (unless stated differently). ridentified. mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures tilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities is (tested to EN374) in combination with 'basic' employee training. Treatment of articles by dipping and pouring lility: low rs concentrations up to 50% d. pplicable. rs daily exposures up to 8 hours (unless stated differently). ridentified. mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures
Amounts used: Frequency and duration of use: Cove Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk managem. Roller, spreader, flow application: Provide a good standard of general ver involving exposure for more than 4 hours. Wear chemical-resistant gloves involving exposure scenario controlling worker exposure for 9: Product Characteristics: Concentration of substance in product: Physical state: Amounts used: Frequency and duration of use: Cove Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk managem. Dipping, immersion and pouring: Provide a good standard of general ventices.	pplicable. rs daily exposures up to 8 hours (unless stated differently). identified. mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures tiliation (not less than 3 to 5 air changes per hour). Avoid carrying out activities is (tested to EN374) in combination with 'basic' employee training. Treatment of articles by dipping and pouring ility: low rs concentrations up to 50% d. pplicable. rs daily exposures up to 8 hours (unless stated differently). identified. mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures
Frequency and duration of use: Cover Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk management Roller, spreader, flow application: Provide a good standard of general ver involving exposure for more than 4 hours. Wear chemical-resistant gloves involving exposure for more than 4 hours. Wear chemical-resistant gloves a good standard of general ver involving exposure for more than 4 hours. Wear chemical-resistant gloves are contributing exposure scenario controlling worker exposure for 9: Product Characteristics: Concentration of substance in product: Cover Physical state: Amounts used: Frequency and duration of use: Cover Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk management pipping, immersion and pouring: Provide a good standard of general ventices.	Treatment of articles by dipping and pouring sility: low res concentrations up to 50% d. pplicable. rs daily exposures up to 8 hours (unless stated differently).
Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk management: Roller, spreader, flow application: Provide a good standard of general verinvolving exposure for more than 4 hours. Wear chemical-resistant glove: Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 9: Product Characteristics: Concentration of substance in product: Cover Physical state: Amounts used: Frequency and duration of use: Cover Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk management pipping, immersion and pouring: Provide a good standard of general ventices.	identified. mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures tilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities is (tested to EN374) in combination with 'basic' employee training. Treatment of articles by dipping and pouring ility: low rs concentrations up to 50% d. pplicable. rs daily exposures up to 8 hours (unless stated differently). identified. mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures
Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk managem Roller, spreader, flow application: Provide a good standard of general ver involving exposure for more than 4 hours. Wear chemical-resistant gloves involving exposure for more than 4 hours. Wear chemical-resistant gloves are contributing exposure scenario controlling worker exposure for 9: Product Characteristics: Concentration of substance in product: Cover Physical state: Amounts used: Frequency and duration of use: Frequency and duration of use: Cover Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk managem Dipping, immersion and pouring: Provide a good standard of general ventices.	mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures tilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities is (tested to EN374) in combination with 'basic' employee training. Treatment of articles by dipping and pouring ility: low rs concentrations up to 50% d. pplicable. rs daily exposures up to 8 hours (unless stated differently). identified. mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures
Contributing scenarios: Operational conditions and risk managem. Roller, spreader, flow application: Provide a good standard of general ver involving exposure for more than 4 hours. Wear chemical-resistant gloves involving exposure for more than 4 hours. Wear chemical-resistant gloves are chemical-resistant gloves. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 9: Product Characteristics: Concentration of substance in product: Cove Physical state: Amounts used: Frequency and duration of use: Frequency and duration of use: Cove Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk managem. Dipping, immersion and pouring: Provide a good standard of general vent	mes activities are at ambient temperature (unless stated differently). Bent measures Itilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities is (tested to EN374) in combination with 'basic' employee training. Treatment of articles by dipping and pouring ility: low irs concentrations up to 50% d. Implicable. It dentified. It identified. It identified. It is a good basic standard of occupational hygiene is implemented. It is measures It is a measure in the measures in the measures. It is a measure in the measure in th
Roller, spreader, flow application: Provide a good standard of general verinvolving exposure for more than 4 hours. Wear chemical-resistant gloves involving exposure for more than 4 hours. Wear chemical-resistant gloves are chemical-resistant gloves. Respiratory protection: Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 9: Product Characteristics: Concentration of substance in product: Cove Physical state: Amounts used: Frequency and duration of use: Frequency and duration of use: Cove Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk management Dipping, immersion and pouring: Provide a good standard of general vent	tilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities is (tested to EN374) in combination with 'basic' employee training. Treatment of articles by dipping and pouring ility: low res concentrations up to 50% d. pplicable. res daily exposures up to 8 hours (unless stated differently). reidentified. mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures
Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 9: Product Characteristics: Concentration of substance in product: Cove Physical state: Liquic Amounts used: Not a Frequency and duration of use: Cove Human factors not influenced by risk management: None Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk management Dipping, immersion and pouring: Provide a good standard of general vent	Treatment of articles by dipping and pouring fility: low rs concentrations up to 50% d. pplicable. rs daily exposures up to 8 hours (unless stated differently). identified. mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures
Contributing exposure scenario controlling worker exposure for 9: Product Characteristics: Concentration of substance in product: Cove Physical state: Liquic Amounts used: Not a Frequency and duration of use: Cove Human factors not influenced by risk management: None Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk management Dipping, immersion and pouring: Provide a good standard of general vent	ility: low rs concentrations up to 50% d. pplicable. rs daily exposures up to 8 hours (unless stated differently). identified. mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures
Product Characteristics: Concentration of substance in product: Cove Physical state: Amounts used: Frequency and duration of use: Cove Human factors not influenced by risk management: None Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk managem Dipping, immersion and pouring: Provide a good standard of general vent	ility: low rs concentrations up to 50% d. pplicable. rs daily exposures up to 8 hours (unless stated differently). identified. mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures
Concentration of substance in product: Physical state: Liquic Amounts used: Frequency and duration of use: Cove Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk management Dipping, immersion and pouring: Provide a good standard of general vent	rs concentrations up to 50% d. pplicable. rs daily exposures up to 8 hours (unless stated differently). identified. mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures
Physical state: Amounts used: Frequency and duration of use: Cove Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk managem Dipping, immersion and pouring: Provide a good standard of general vent	d. pplicable. rs daily exposures up to 8 hours (unless stated differently). identified. mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures
Amounts used: Frequency and duration of use: Cove Human factors not influenced by risk management: None Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk managem Dipping, immersion and pouring: Provide a good standard of general vent	pplicable. rs daily exposures up to 8 hours (unless stated differently). identified. mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures
Frequency and duration of use: Cove Human factors not influenced by risk management: None Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk managem Dipping, immersion and pouring: Provide a good standard of general vent	rs daily exposures up to 8 hours (unless stated differently). identified. mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures
Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assu Assu Contributing scenarios: Operational conditions and risk managem Dipping, immersion and pouring: Provide a good standard of general vent	identified. mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures
Other operational conditions affecting worker exposure: Assu Contributing scenarios: Operational conditions and risk managem Dipping, immersion and pouring: Provide a good standard of general vent	mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently). ent measures
Assu Contributing scenarios: Operational conditions and risk managem. Dipping, immersion and pouring: Provide a good standard of general venions.	mes activities are at ambient temperature (unless stated differently). ent measures
Contributing scenarios: Operational conditions and risk managem. Dipping, immersion and pouring: Provide a good standard of general vent	ent measures
Respiratory protection: None	
Section 2.1 Control of worker exposure	
Contributing exposure scenario controlling worker exposure for 10	
	ility: low
•	rs concentrations up to 50%
Physical state: Liquic	
	pplicable.
• •	rs daily exposures up to 8 hours (unless stated differently).
	identified.
	mes a good basic standard of occupational hygiene is implemented. mes activities are at ambient temperature (unless stated differently).
Contributing scenarios: Operational conditions and risk managem. Laboratory activities: Provide a good standard of general ventilation (not le	
Respiratory protection: None	

Section 2.2: Control of environmental exposure

Section 2.1 Control of worker exposure

Diethylenetriamine, DETA

Identified use name: Use as an epoxy curing agent - Industrial Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC10, PROC13, PROC15 Substance supplied to that use in form of: As such Sector of end use: SU03 Subsequent service life relevant for that use: No.

Environmental Release Category: ERC06c, ERC06d

Contributing exposure scenario controlling environmental exposure for 0: Industrial use of monomers for manufacture of thermoplastics 10700 Tonnes/year Amounts used: Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): Not available. Not available. Fraction of Regional tonnage used locally: Annual site tonnage (tonnes/year): Not available. Not available. Average Local Daily Tonnage (kg/day): Maximum daily site tonnage (kg/day): 800 Frequency and duration of use: Continuous release. Emission Days (days/year): 220 Environmental factors not influenced by risk management: Local freshwater dilution factor: 10 Default Local marine water dilution factor: 100 Default Other operational conditions of use affecting environmental exposure: Release fraction to air from process (initial release prior to 1.70E-02 Release fraction to soil from process (initial release prior to 0.00E+00 RMM): Release fraction to wastewater from process (initial release 0.00F+00 prior to RMM): Not available Release fraction to air from wide dispersive use (regional Release fraction to wastewater from wide dispersive use: Not available. Release fraction to soil from wide dispersive use (regional Not available. only): Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil: Treat air emission to provide a typical removal efficiency of Not available. Treat on-site wastewater (prior to receiving water discharge) Not applicable. to provide the required removal efficiency of 3 (%): If discharging to domestic sewage treatment plant, provide Not available. the required onsite wastewater removal efficiency of 3 (%): Conditions and measures related to municipal sewage treatment Estimated substance removal from wastewater via domestic 92.6% sewage treatment (%): Total efficiency of removal from wastewater after on-site and off-92.6% site (domestic treatment plant) RMMs (%): Maximum allowable site tonnage (Msafe) based on release following 214560 kg/day total wastewater treatment removal (kg/d): Conditions and measures related to external recovery of waste: Dispose of waste product or used containers according to local regulations. Local release to soil, kg/day: 14 Local release to air, kg/day: Local release to sewage, kg/day: O Fraction of main source to local environment: 0.016 Contributing exposure scenario controlling environmental exposure for 1: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers 10700 Tonnes/year Amounts used: Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): Not available. Fraction of Regional tonnage used locally: Not available. Annual site tonnage (tonnes/year): Not available. Not available. Average Local Daily Tonnage (kg/day): Maximum daily site tonnage (kg/day): 800 Frequency and duration of use: Continuous release. 220 Emission Days (days/year): Environmental factors not influenced by risk management: 10 Default Local freshwater dilution factor: Local marine water dilution factor: 100 Default

Diethylenetriamine, DETA

Identified use name: Use as an epoxy curing agent - Industrial Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC07, PROC08a, PROC08b, PROC10, PROC13, PROC15 Substance supplied to that use in form of: As such Sector of end use: SU03 Subsequent service life relevant for that use: No. Environmental Release Category: ERC06c, ERC06d

Other operational conditions of use affecting environmental exposure: Release fraction to air from process (initial release prior to 1.70E-02 RMM): Release fraction to soil from process (initial release prior to 0.00E+00 RMM): Release fraction to wastewater from process (initial release 0.00E+00 prior to RMM): Not available. Release fraction to air from wide dispersive use (regional only): Release fraction to wastewater from wide dispersive use: Not available. Not available. Release fraction to soil from wide dispersive use (regional Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil: Treat air emission to provide a typical removal efficiency of Not available Not applicable. Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of 3 (%): If discharging to domestic sewage treatment plant, provide Not available. the required onsite wastewater removal efficiency of 3 (%): Conditions and measures related to municipal sewage treatment Estimated substance removal from wastewater via domestic 92.6% sewage treatment (%): Total efficiency of removal from wastewater after on-site and off-92 6% site (domestic treatment plant) RMMs (%): Maximum allowable site tonnage (Msafe) based on release following 214560 kg/day total wastewater treatment removal (kg/d): Conditions and measures related to external recovery of waste: Dispose of waste product or used containers according to local regulations. Local release to soil, kg/day: 14 Local release to air, kg/day: Local release to sewage, kg/day: 0 Fraction of main source to local environment: 0.016

Section 3: Exposure estimation

Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	General exposures (closed systems); Bulk product storage (closed systems)	0.34	Not applicable.
Long term exposure, Systemic, Inhalable	General exposures (closed systems); Bulk product storage (closed systems)	0.02	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	General exposures (closed systems); Bulk product storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	General exposures (closed systems); Bulk product storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	General exposures (closed systems); Bulk product storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.

Contributing exposure scenario con	doming worker exposure for 1. Us	se in closed, continuous proc	and with occasional controlled exposure
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	General exposures (closed systems) with sample collection; Injection moulding of articles (closed systems); Film formation - air drying (closed systems)	Not applicable; 1.37; 1.37	Not applicable.
Long term exposure, Systemic, Inhalable	General exposures (closed systems) with sample collection; Injection moulding of articles (closed systems); Film formation - air drying (closed systems)	2.15	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	General exposures (closed systems) with sample collection; Injection moulding of articles (closed systems); Film formation - air drying (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	General exposures (closed systems) with sample collection; Injection moulding of articles (closed systems); Film formation - air drying (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	General exposures (closed systems) with sample collection; Injection moulding of articles (closed systems); Film formation - air drying (closed systems)	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estima	ation		
Contributing exposure scenario con	trolling worker exposure for 2: Us	se in closed batch process (s	ynthesis or formulation)
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems)	0.34	Not applicable.
Long term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (open systems)	6.45	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (open systems)	Not applicable	Not applicable.
01	NI - A C I-I -		Madama Ragari

Not applicable.

Not applicable

Not applicable.

Short term exposure, Systemic,

Short term exposure, Local,

Inhalable

Not applicable.

(open systems)

Not applicable.

application Mixing operations

Short term exposure, Local, Dermal Preparation of material for

Not applicable.

Not applicable.

Not applicable.

Section 2 4Workers Exposure estima	ation		
Section 3.1Workers Exposure estima Contributing exposure scenario con exposure arises		Jse in batch and other process	s (synthesis) where opportunity for
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols; Film formation - air drying (open systems)	0.69; Not applicable; 1.37	Not applicable.
Long term exposure, Systemic, Inhalable	General exposures (closed systems); Bulk product storage (closed systems)	1.07; 0.25; 10.75	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	General exposures (closed systems); Bulk product storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	General exposures (closed systems); Bulk product storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	General exposures (closed systems); Bulk product storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
and articles (multistage and/or significant Route of exposure		Dose/Concentration	ocesses for formulation of preparations* Justification
Route of exposure Long term exposure, Systemic, Dermal	Contributing scenarios Preparation of material for application Mixing operations	Dose/Concentration 0.07; Not applicable	Justification Not applicable.
Long term exposure, Systemic,	(open systems); Aerosols Preparation of material for	1.07; 0.25	Not applicable.
Inhalable	application Mixing operations (open systems); Aerosols		
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	• •	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (open systems); Aerosols	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estimated Contributing exposure scenario contributing exposure estimated exposure exposure estimated exposure e		ndustrial spraying	
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Spraying (automatic/robotic) Manual; Aerosols	2.14; Not applicable	Not applicable.
Long term exposure, Systemic, Inhalable	Spraying (automatic/robotic) Manual; Aerosols	10.75; 0.50	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure Systemic	Spraying (automatic/robotic)	Not applicable	Not applicable

Not applicable

Dermal

Short term exposure, Systemic,

Spraying (automatic/robotic) Manual; Aerosols Not applicable.

Short term exposure, Systemic, Inhalable	Spraying (automatic/robotic) Manual; Aerosols	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Spraying (automatic/robotic) Manual: Aerosols	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estima			
Contributing exposure scenario con vessels/large containers at non-dedi		ransfer of substance or prepar	ation (charging/discharging) from/to
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Material transfers Drum/batch transfers Transfer from/pouring from containers Non-dedicated facility; Equipment cleaning and maintenance	2.74	Not applicable.
Long term exposure, Systemic, Inhalable	Material transfers Drum/batch transfers Transfer from/pouring from containers Non-dedicated facility; Equipment cleaning and maintenance	9.03	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Material transfers Drum/batch transfers Transfer from/pouring from containers Non-dedicated facility; Equipment cleaning and maintenance	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Material transfers Drum/batch transfers Transfer from/pouring from containers Non-dedicated facility; Equipment cleaning and maintenance	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Material transfers Drum/batch transfers Transfer from/pouring from containers Non-dedicated facility; Equipment cleaning and maintenance	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
	trolling worker exposure for 7: T	ransfer of substance or prepar	ation (charging/discharging) from/to
vessels/large containers at dedicate Route of exposure	a facilities Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Material transfers Drum/batch transfers Transfer from/pouring from containers Dedicated facility	1.37	Not applicable.
Long term exposure, Systemic, Inhalable	General exposures (closed systems); Bulk product storage (closed systems)	10.75	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	General exposures (closed systems); Bulk product storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	General exposures (closed systems); Bulk product storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	General exposures (closed systems); Bulk product storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Diethylenetriamine, DETA		Identified use name	: Use as an epoxy curing agent - Industrial

Section 3.1Workers Exposure estimated Contributing exposure scenario contributing exposure estimates and exposure exposure estimates and exposure exposure estimates and exposure		oller application or brushing	
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Roller, spreader, flow application	2.74	Not applicable.
Long term exposure, Systemic, Inhalable	Roller, spreader, flow application	9.03	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Roller, spreader, flow application	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Roller, spreader, flow application	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal Short term exposure, Local, Inhalable	Roller, spreader, flow application Not applicable.	Not applicable Not applicable.	Not applicable.
Section 3.1Workers Exposure estimated Contributing exposure scenario contributing exposure estimates and exposure exposure estimates and exposure expos		reatment of articles by dipping an	d pouring
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic,	Dipping, immersion and pouring	2.74	Not applicable.
Dermal Long term exposure, Systemic,	Dipping, immersion and pouring	9.03	Not applicable.
Inhalable Long term exposure, Systemic,	Not applicable.	Not applicable.	Not applicable.
Combined Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local,	Not applicable.	Not applicable.	Not applicable.
Inhalable Short term exposure, Systemic,			
Dermal	Dipping, immersion and pouring	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Dipping, immersion and pouring	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal		Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estimate Contributing exposure scenario contributing exposure estimates and exposure exposure estimates and exposure exposure estimates and exposure estimates and exposure expos		lleg as laboratory reagent	
• •	•		Luctification
Route of exposure Long term exposure, Systemic,	Contributing scenarios Laboratory activities	Dose/Concentration 0.34	Justification Not applicable.
Dermal Long term exposure, Systemic, Inhalable	Laboratory activities	7.52	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Laboratory activities	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Laboratory activities	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal		Not applicable	Not applicable.
Short term exposure I ocal	Not applicable	Not applicable	Not applicable

Not applicable.

Short term exposure, Local,

Inhalable

Not applicable.

Not applicable.

Section 3.2 Environment Exposure 6	estimation			
Contributing exposure scenario controlling environmental exposure for 0: Industrial use of monomers for manufacture of thermoplastics				
	Release from point source (local exposure estimation) kg/day	Total release for regional exposure estimation kg/day	Justification	
Waste water	Not applicable.	Not applicable.	Not applicable.	
Surface water	Not applicable.	Not applicable.	Not applicable.	
air (direct + STP)	Not applicable.	Not applicable.	Not applicable.	
Soil (direct releases only)	Not applicable.	Not applicable.	Not applicable.	
	Value	Justification		
Concentration in sewage (PECstp) mg/l	Not applicable.	Not applicable.		
Concentration in sewage sludge mg/kg dwt	Not applicable.	Not applicable.		
	Local concentration	PEC aquatic (local+regional)	Justification	
Fresh water mg/l	Not applicable.	Surface water, Dissolved During emission Resulting PEC local,	Not applicable.	

water (mg/l): 0.0017; Surface water, Dissolved Annual average:

During emission Resulting PEC

local, water (mg/l): 0.0002; Annual average, Dissolved, Resulting PEC local, water (mg/l): 0.0002

PEC sediment (local+regional)

Not applicable.

Not applicable.

Justification

During emission

Not applicable.

Justification

0.0017

3.19

Not applicable.

Not applicable.

Total release for regional

Marine water sediment mg/kg dwt	Not applicable.	0.31	During emission
	Local concentration	PEC soil (local+regional)	Justification
Agricultural soil averaged mg/kg dwt	Not applicable.	0.798, 30 days; 0.264, 180 days	Not applicable.
Grassland averaged mg/kg dwt	Not applicable.	0.107, 180 days	Not applicable.
Groundwater mg/l	Not applicable.	Not applicable.	Not applicable.
	Local concentration	PEC air (local+regional)	Justification

Not applicable.

Not applicable.

Not applicable.

Not applicable.

Local concentration

Annual average mg/m³ Not applicable. 0.0023 Not applicable. Annual deposition mg/m2/d Not applicable. Not applicable. Not applicable. **Local concentration** PEC aquatic (local+regional) **Justification** Micro-organism mg/l Not applicable. Not applicable.

Release from point source

Section 3.2 Environment Exposure estimation

Marine water mg/l

Intermittent release. mg/l

During emission mg/m³

Fresh water sediment mg/kg dwt

Contributing exposure scenario controlling environmental exposure for 1: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

Diethylenetriamine DFTA		Identified use name: Us	se as an enoxy cu
	Local concentration	PEC sediment (local+regional)	Justification
Intermittent release. mg/l	Not applicable.	Not applicable.	Not applicable.
Marine water mg/l	Not applicable.	During emission Resulting PEC local, water (mg/l): 0.0002; Annual average, Dissolved, Resulting PEC local, water (mg/l): 0.0002	Not applicable.
Fresh water mg/l	Not applicable.	Surface water, Dissolved During emission Resulting PEC local, water (mg/l): 0.0017; Surface water, Dissolved Annual average: 0.0017	Not applicable.
	Local concentration	PEC aquatic (local+regional)	Justification
Concentration in sewage sludge mg/kg dwt	Not applicable.	Not applicable.	
Concentration in sewage (PECstp) mg/l	Not applicable.	Not applicable.	
	Value	Justification	
Soil (direct releases only)	Not applicable.	Not applicable.	Not applicable.
air (direct + STP)	Not applicable.	Not applicable.	Not applicable.
Surface water	Not applicable.	Not applicable.	Not applicable.
Waste water	Not applicable.	Not applicable.	Not applicable.
	(local exposure estimation) kg/day	exposure estimation kg/day	

Diethylenetriamine, DETA

Fresh water sediment mg/kg dwt Not applicable. 3.19 During emission Marine water sediment mg/kg dwt Not applicable. 0.31 During emission **Justification**

Local concentration PEC soil (local+regional)

Agricultural soil averaged mg/kg

dwt

Grassland averaged mg/kg dwt

During emission mg/m³

Annual average mg/m³

Annual deposition mg/m2/d

Not applicable. Groundwater mg/l Not applicable.

Not applicable.

Not applicable. Not applicable. PEC air (local+regional) **Justification Local concentration** Not applicable. Not applicable. Not applicable. Not applicable. 0.0023 Not applicable. Not applicable. Not applicable. Not applicable.

0.107, 180 days

0.798, 30 days; 0.264, 180 days

Not applicable.

Not applicable.

Local concentration PEC aquatic (local+regional) **Justification** Micro-organism mg/l Not applicable. Not applicable.

Section 4: Guidance to check compliance with the exposure scenario

Environment Not available Health Not available

Section 5. Remarks: Additional good practice advice beyond the REACH CSA

Environment Not applicable. Health Not applicable. Not applicable. **Additional Good Practices**

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definitionMono-constituent substanceProduct nameDiethylenetriamine, DETA

Section 1: Title

Short title of the exposure scenario/List of use descriptors

Identified use name: Use as an epoxy curing agent - Professional

Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10,

PROC11, PROC13, PROC15, PROC19

Substance supplied to that use in form of: As such

Sector of end use: SU02a, SU02b

Sector of end use. 5002a, 5002b

Subsequent service life relevant for that use: No. Environmental Release Category: ERC08c, ERC08f

Specific Environmental Release Category: FEICA 10

Processes and activities covered by the exposure scenario

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, brush, spreader by hand or similar methods, 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

Contributing exposure scenario controlling worker exposure for 0: Use in closed process, no likelihood of exposure

Product Characteristics: Volatility: low

Concentration of substance in product: Covers concentrations up to 50%

Physical state: Liquid.

Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

General exposures (closed systems): No other specific measures identified.

Storage (closed systems): No other specific measures identified.

Respiratory protection: None.

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 1: Use in closed, continuous process with occasional controlled exposure

Product Characteristics: Volatility: low

Concentration of substance in product: Covers concentrations up to 50%

Physical state: Liquid.

Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

General exposures (closed systems) with sample collection: No other specific measures identified.

Respiratory protection: None

Diethylenetriamine, DETA

Identified use name: Use as an epoxy curing agent - Professional Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19
Substance supplied to that use in form of: As such Sector of end use: SU02a, SU02b

Subsequent service life relevant for that use: No. Environmental Release Category: ERC08c, ERC08f

Professional

Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 2: Use in closed batch process (synthesis or formulation) **Product Characteristics:** Volatility: low Concentration of substance in product: Covers concentrations up to 50% **Physical state:** Liquid. Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). Human factors not influenced by risk management: None identified. Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures Preparation of material for application Mixing operations (closed systems): Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). or Ensure operation is undertaken outdoors. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 3: Use in batch and other process (synthesis) where opportunity for exposure arises Volatility: low Product Characteristics: Concentration of substance in product: Covers concentrations up to 50% **Physical state:** Liquid. Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures Preparation of material for application Mixing operations (open systems): Avoid carrying out activities involving exposure for more than 1 hour. Film formation - air drying: Avoid carrying out activities involving exposure for more than 4 hours. Wear suitable gloves tested to EN374. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 4: Mixing or blending in batch processes for formulation of preparations* and articles (multistage and/or significant contact) **Product Characteristics:** Volatility: low Concentration of substance in product: Covers concentrations up to 50% **Physical state:** Liquid. Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Preparation of material for application Mixing operations (open systems): Avoid carrying out activities involving exposure for more than 1 hour. Wear suitable gloves tested to EN374.

Respiratory protection: None

Diethylenetriamine, DETA

Identified use name: Use as an epoxy curing agent - Professional Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19 Substance supplied to that use in form of: As such Sector of end use: SU02a, SU02b

Subsequent service life relevant for that use: No. Environmental Release Category: ERC08c, ERC08f Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 5: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities Volatility: low **Product Characteristics:** Concentration of substance in product: Covers concentrations up to 50% **Physical state:** L iquid Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). Human factors not influenced by risk management: None identified. Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures Material transfers Drum/batch transfers Transfer from/pouring from containers Non-dedicated facility: Wear suitable gloves tested to EN374. Wear a respirator conforming to EN140 with Type A filter or better. Equipment cleaning and maintenance: Wear suitable gloves tested to EN374. Wear a respirator conforming to EN140 with Type A filter or better. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 6: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities **Product Characteristics:** Volatility: low Concentration of substance in product: Covers concentrations up to 50% **Physical state:** L iquid Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures Material transfers Drum/batch transfers Transfer from/pouring from containers Dedicated facility: Avoid carrying out activities involving exposure for more than 4 hours. Wear suitable gloves tested to EN374. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 7: Roller application or brushing **Product Characteristics:** Volatility: low Concentration of substance in product: Covers concentrations up to 50%

Physical state: Liquid. Not applicable. Amounts used:

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Roller, spreader, flow application: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours. Wear chemical-resistant gloves (tested to EN374) in combination with 'basic' employee training.

Respiratory protection: None

Diethylenetriamine, DETA

Subsequent service life relevant for that use: No. Environmental Release Category: ERC08c, ERC08f Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 8: Non industrial spraying

Product Characteristics: Volatility: low

Concentration of substance in product: Covers concentrations up to 50%

Physical state: Liquid.

Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Spraying Manual: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). or Ensure operation is undertaken outdoors. Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training. Wear a respirator conforming to EN140 with Type A filter or better.

Respiratory protection:

None

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 9: Treatment of articles by dipping and pouring

Product Characteristics: Volatility: low

Concentration of substance in product: Covers concentrations up to 50%

Physical state: Liquid.

Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Dipping, immersion and pouring: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities

involving exposure for more than 4 hours. Wear suitable gloves tested to EN374.

Respiratory protection:

None

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 10: Use as laboratory reagent

Product Characteristics: Volatility: low

Concentration of substance in product: Covers concentrations up to 50%

Physical state: Liquid.

Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure:

Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Laboratory activities: No other specific measures identified.

Respiratory protection:

None.

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 11: Hand-mixing with intimate contact and only PPE available

Product Characteristics: Volatility: low

Concentration of substance in product: Covers concentrations up to 50%

Physical state: Liquid.

Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Diethylenetriamine, DETA

Identified use name: Use as an epoxy curing agent - Professional Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19
Substance supplied to that use in form of: As such Sector of end use: SU02a, SU02b

Subsequent service life relevant for that use: No. Environmental Release Category: ERC08c, ERC08f

73/80

Preparation of material for application Mixing operations (open systems): Wear a respirator conforming to EN140 with Type A filter or better. Wear chemical-resistant gloves (tested to EN374) in combination with specific activity training.

Respiratory protection: None

Section 2.2: Control of environmental exposure

Contributing exposure scenario controlling environmental exposure for 0: Wide dispersive indoor use resulting in inclusion into or onto a matrix

Amounts used: 10700 Tonnes/year

Fraction of EU tonnage used in region:

Regional use tonnage (tonnes/year): Fraction of Regional tonnage used locally: Not available. Not available. Annual site tonnage (tonnes/year): Average Local Daily Tonnage (kg/day): Not available.

Maximum daily site tonnage (kg/day): 5.8

Frequency and duration of use:

365 Emission Days (days/year):

Environmental factors not influenced by risk management:

Local freshwater dilution factor: 10 Default Local marine water dilution factor: 100 Default

Other operational conditions of use affecting environmental exposure:

Release fraction to air from process (initial release prior to

Release fraction to soil from process (initial release prior to

RMM):

Release fraction to wastewater from process (initial release

prior to RMM):

Release fraction to air from wide dispersive use (regional

Release fraction to wastewater from wide dispersive use: Release fraction to soil from wide dispersive use (regional only):

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil:

Treat air emission to provide a typical removal efficiency of

(%):

Treat on-site wastewater (prior to receiving water discharge) Not applicable.

to provide the required removal efficiency of 3 (%):

If discharging to domestic sewage treatment plant, provide

the required onsite wastewater removal efficiency of ³ (%):

Conditions and measures related to municipal sewage treatment plant:

Estimated substance removal from wastewater via domestic

sewage treatment (%):

Total efficiency of removal from wastewater after on-site and off-

site (domestic treatment plant) RMMs (%):

total wastewater treatment removal (kg/d):

Local release to sewage, kg/day:

Conditions and measures related to external recovery of waste:

Local release to soil, kg/day: Local release to air, kg/day:

Fraction of main source to local environment:

Not available.

Continuous release.

0.00E+00

0.00F+00

1.50E-02

Not available

Not available.

Not available.

Not available.

Not available.

92 6%

92.6%

Maximum allowable site tonnage (Msafe) based on release following 1730 kg/day

Dispose of waste product or used containers according to local regulations.

0 8.80E-02

0.002

Diethylenetriamine, DETA

Contributing exposure scenario controlling environmental exposure for 1: Wide dispersive outdoor use resulting in inclusion into or onto a Amounts used: 10700 Tonnes/year 0.1 Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): Not available. Fraction of Regional tonnage used locally: Not available Annual site tonnage (tonnes/year): Not available. Average Local Daily Tonnage (kg/day): Not available Maximum daily site tonnage (kg/day): 5.8 Continuous release. Frequency and duration of use: Emission Days (days/year): 365 Environmental factors not influenced by risk management: 10 Default Local freshwater dilution factor: Local marine water dilution factor: 100 Default Other operational conditions of use affecting environmental Release fraction to air from process (initial release prior to 0.00E+00 RMM): Release fraction to soil from process (initial release prior to 0.00E+00 RMM): Release fraction to wastewater from process (initial release 1.50E-02 prior to RMM): Release fraction to air from wide dispersive use (regional Not available. only): Not available Release fraction to wastewater from wide dispersive use: Not available. Release fraction to soil from wide dispersive use (regional only): Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil: Treat air emission to provide a typical removal efficiency of Not available Treat on-site wastewater (prior to receiving water discharge) Not applicable. to provide the required removal efficiency of 3 (%): If discharging to domestic sewage treatment plant, provide Not available. the required onsite wastewater removal efficiency of 3 (%): Conditions and measures related to municipal sewage treatment Estimated substance removal from wastewater via domestic 92.6% sewage treatment (%): 92 6% Total efficiency of removal from wastewater after on-site and offsite (domestic treatment plant) RMMs (%): Maximum allowable site tonnage (Msafe) based on release following 1730 kg/day total wastewater treatment removal (kg/d): Conditions and measures related to external recovery of waste: Dispose of waste product or used containers according to local regulations. Local release to soil, kg/day:

8.80E-02

0.002

0 Local release to air, kg/day:

Local release to sewage, kg/day: Fraction of main source to local environment:

Section 3: Exposure estimation

Section 3.1Workers Exposure estim Contributing exposure scenario con		: Use in closed process, no like	elihood of exposure
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	General exposures (closed systems); Storage (closed systems)	0.34	Not applicable.
Long term exposure, Systemic, Inhalable	General exposures (closed systems); Storage (closed systems)	0.02	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
		11 /20 1	

Diethylenetriamine, DETA

Identified use name: Use as an epoxy curing agent - Professional Process Category: PROC01, PROC02, PROC03, PROC04, PROC05, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC15, PROC19 Substance supplied to that use in form of: As such Sector of end use: SU02a, SU02b Subsequent service life relevant for that use: No. Environmental Release Category: ERC08c, ERC08f

Short term exposure, Systemic, Dermal	General exposures (closed systems); Storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	General exposures (closed systems); Storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	General exposures (closed systems); Storage (closed systems)	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estima		loo in closed, continuous pr	rocess with occasional controlled exposure
Route of exposure Long term exposure, Systemic,	Contributing scenarios	Dose/Concentration	Justification Not applicable.
Dermal	General exposures (closed systems) with sample collection	1.37	
Long term exposure, Systemic, Inhalable	General exposures (closed systems) with sample collection	10.75	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	General exposures (closed systems) with sample collection	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	General exposures (closed systems) with sample collection	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	General exposures (closed systems) with sample collection	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estima		les in alread batch was seen	(aunthoris or formulation)
Contributing exposure scenario con	•	•	
Route of exposure	Contributing scenarios	Dose/Concentration	Justification Not explicable
Long term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (closed systems)	0.34	Not applicable.
Long term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (closed systems)	4.51	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Preparation of material for application Mixing operations (closed systems)	Not applicable	Not applicable.
Chart tarm avecause I and	Not applicable	Not applicable	Not applicable

Not applicable.

Short term exposure, Local,

Inhalable

Not applicable.

Not applicable.

Section 3.1Workers Exposure estima	ation		
Contributing exposure scenario contexposure arises		Jse in batch and other process	s (synthesis) where opportunity for
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols; Film formation - air drying (open systems)	6.86; Not applicable; 1.37	Not applicable.
Long term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (open systems); Aerosols; Film formation - air drying (open systems)	4.30; 0.50; 12.90	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols; Film formation - air drying (open systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (open systems); Aerosols; Film formation - air drying (open systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols; Film formation - air drying (open systems)	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estima			
Contributing exposure scenario contand articles (multistage and/or signif		Aixing or blending in batch pro	ocesses for formulation of preparations*
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols	2.74; Not applicable	Not applicable.
Long term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (open systems); Aerosols	4.30; 0.50	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems): Aerosols	Not applicable	Not applicable.
	(

Not applicable

Not applicable.

Not applicable

Not applicable.

Preparation of material for

Preparation of material for

application Mixing operations (open systems); Aerosols

Not applicable.

Not applicable.

application Mixing operations (open systems); Aerosols

Short term exposure, Systemic,

Short term exposure, Systemic,

Short term exposure, Local,

Short term exposure, Local, Dermal

Inhalable

Combined

Inhalable

Not applicable.

Not applicable.

Not applicable.

Not applicable.

Section 3.1Workers Exposure estima	ation		
Contributing exposure scenario convessels/large containers at non-dedi	trolling worker exposure for 5: Tr	ansfer of substance or prepara	tion (charging/discharging) from/to
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Material transfers Drum/batch transfers Transfer from/pouring from containers Non-dedicated facility; Equipment cleaning and maintenance	2.74	Not applicable.
Long term exposure, Systemic, Inhalable	Material transfers Drum/batch transfers Transfer from/pouring from containers Non-dedicated facility; Equipment cleaning and maintenance	5.37	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Material transfers Drum/batch transfers Transfer from/pouring from containers Non-dedicated facility; Equipment cleaning and maintenance	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Material transfers Drum/batch transfers Transfer from/pouring from containers Non-dedicated facility; Equipment cleaning and maintenance	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Material transfers Drum/batch transfers Transfer from/pouring from containers Non-dedicated facility; Equipment cleaning and maintenance	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estima			
Contributing exposure scenario convessels/large containers at dedicated		ansfer of substance or prepara	tion (charging/discharging) from/to
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Material transfers Drum/batch transfers Transfer from/pouring from containers Dedicated facility	1.37	Not applicable.
Long term exposure, Systemic, Inhalable	General exposures (closed systems); Storage (closed systems)	12.90	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	General exposures (closed systems); Storage (closed	Not applicable	Not applicable.

Short term exposure, Local,

Short term exposure, Systemic,

Short term exposure, Systemic,

Inhalable

Combined

Inhalable

systems); Storage (closed systems) General exposures (closed Not applicable Not applicable. systems); Storage (closed systems) Not applicable. Not applicable. Not applicable. Not applicable Short term exposure, Local, Dermal General exposures (closed Not applicable. systems); Storage (closed systems) Not applicable. Not applicable. Not applicable.

Section 3.1Workers Exposure estima	ation		
Contributing exposure scenario con		oller application or brushing	
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Roller, spreader, flow application	5.49	Not applicable.
Long term exposure, Systemic, Inhalable	Roller, spreader, flow application	3.76	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Roller, spreader, flow application	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Roller, spreader, flow application	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal Short term exposure, Local, Inhalable	Roller, spreader, flow application Not applicable.	Not applicable Not applicable.	Not applicable. Not applicable.
Section 3.1Workers Exposure estimated Contributing exposure scenario con		on industrial spraying	
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Spraying Manual; Aerosols	0.11; Not applicable	Not applicable.
Long term exposure, Systemic, Inhalable	Spraying Manual; Aerosols	15.05; 0.70	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Spraying Manual; Aerosols	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Spraying Manual; Aerosols	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal Short term exposure, Local, Inhalable	Spraying Manual; Aerosols Not applicable.	Not applicable Not applicable.	Not applicable. Not applicable.
Section 3.1Workers Exposure estimated Contributing exposure scenario con		reatment of articles by dinning a	nd nouring
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Dipping, immersion and pouring	2.74	Not applicable.
Long term exposure, Systemic, Inhalable	Dipping, immersion and pouring	9.03	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Dipping, immersion and pouring	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Dipping, immersion and pouring	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Dipping, immersion and pouring	Not applicable	Not applicable.

Not applicable.

Short term exposure, Local,

Inhalable

Not applicable.

Not applicable.

Section 3.1Workers Exposure estimate	ation		
Contributing exposure scenario con	trolling worker exposure for '	10: Use as laboratory reagent	
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Laboratory activities	0.34	Not applicable.
Long term exposure, Systemic, Inhalable	Laboratory activities	10.75	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Laboratory activities	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Laboratory activities	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal Short term exposure, Local, Inhalable	Laboratory activities Not applicable.	Not applicable Not applicable.	Not applicable. Not applicable.

Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols	7.07; Not applicable	Not applicable.
Long term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (open systems); Aerosols	5.37; 0.25	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	Preparation of material for application Mixing operations (open systems); Aerosols	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	Preparation of material for application Mixing operations (open systems); Aerosols	Not applicable	Not applicable.
Short term exposure, Local,	Not applicable.	Not applicable.	Not applicable.

Section 3.2 Environment Exposure estimation

Inhalable

Contributing exposure scenario controlling environmental exposure for 0: Wide dispersive indoor use resulting in inclusion into or onto a matrix

	Release from point source (local exposure estimation) kg/day	Total release for regional exposure estimation kg/day	Justification
Waste water	Not applicable.	Not applicable.	Not applicable.
Surface water	Not applicable.	Not applicable.	Not applicable.
air (direct + STP)	Not applicable.	Not applicable.	Not applicable.
Soil (direct releases only)	Not applicable.	Not applicable.	Not applicable.
	Value	Justification	
Concentration in sewage (PECstp) mg/l	Not applicable.	Not applicable.	
Concentration in sewage sludge mg/kg dwt	Not applicable.	Not applicable.	
	Local concentration	PEC aquatic (local+regional)	Justification
Fresh water mg/l	Not applicable.	Surface water, Dissolved During emission Resulting PEC local, water (mg/l): 0.002; Surface water, Dissolved Annual average: 0.002	Not applicable.

Diethylenetriamine, DETA

Marine water mg/l Not applicable. During emission Resulting PEC Not applicable. local, water (mg/l): 0.0002; Annual average, Dissolved, Resulting PEC local, water (mg/l): 0.0002 Intermittent release. mg/l Not applicable. Not applicable. Not applicable. PEC sediment (local+regional) **Local concentration Justification** Fresh water sediment mg/kg dwt Not applicable. 3.678 During emission Marine water sediment mg/kg dwt Not applicable. 0.374 During emission **Local concentration** PEC soil (local+regional) **Justification** Agricultural soil averaged mg/kg Not applicable. 0.071, 30 days; 0.024, 180 days Not applicable. 0.0106, 180 days Grassland averaged mg/kg dwt Not applicable. Not applicable. Groundwater mg/l Not applicable. Not applicable. Not applicable. Local concentration PEC air (local+regional) **Justification** During emission mg/m³ Not applicable. Not applicable. Not applicable. Annual average mg/m³ Not applicable. 2.06E-05 Not applicable. Annual deposition mg/m2/d Not applicable. Not applicable. Not applicable. PEC aquatic (local+regional) **Local concentration Justification** Micro-organism mg/l Not applicable. 0.0032 Not applicable.

Section 3.2 Environment Exposure estimation

Contributing exposure scenario controlling environmental exposure for 1: Wide dispersive outdoor use resulting in inclusion into or onto a matrix

	Release from point source (local exposure estimation) kg/day	Total release for regional exposure estimation kg/day	Justification
Waste water	Not applicable.	Not applicable.	Not applicable.
Surface water	Not applicable.	Not applicable.	Not applicable.
air (direct + STP)	Not applicable.	Not applicable.	Not applicable.
Soil (direct releases only)	Not applicable.	Not applicable.	Not applicable.
	Value	Justification	
Concentration in sewage (PECstp) mg/l	Not applicable.	Not applicable.	
Concentration in sewage sludge mg/kg dwt	Not applicable.	Not applicable.	
	Local concentration	PEC aquatic (local+regional)	Justification
Fresh water mg/l	Not applicable.	Surface water, Dissolved During emission Resulting PEC local, water (mg/l): 0.002; Surface water, Dissolved Annual average: 0.002	Not applicable.
Marine water mg/l	Not applicable.	During emission Resulting PEC local, water (mg/l): 0.0002; Annual average, Dissolved, Resulting PEC local, water (mg/l): 0.0002	Not applicable.
Intermittent release. mg/l	Not applicable.	Not applicable.	Not applicable.
	Local concentration	PEC sediment (local+regional)	Justification
Fresh water sediment mg/kg dwt	Not applicable.	3.678	During emission
Marine water sediment mg/kg dwt	Not applicable.	0.374	During emission
	Local concentration	PEC soil (local+regional)	Justification
Agricultural soil averaged mg/kg dwt	Not applicable.	0.071, 30 days; 0.024, 180 days	Not applicable.
Grassland averaged mg/kg dwt	Not applicable.	0.0106, 180 days	Not applicable.
Groundwater mg/l	Not applicable.	Not applicable.	Not applicable.
	Local concentration	PEC air (local+regional)	Justification
During emission mg/m³	Not applicable.	Not applicable.	Not applicable.
Annual average mg/m³	Not applicable.	2.06E-05	Not applicable.
Annual deposition mg/m2/d	Not applicable.	Not applicable.	Not applicable.
	Local concentration	PEC aquatic (local+regional)	Justification
Micro-organism mg/l	Not applicable.	0.0032	Not applicable.

Section 4: Guidance to check compliance with the exposure scenario

Environment	Not available.
Health	Not available.

Section 5. Remarks: Additional good practice advice beyond the REACH CSA

ſ	Environment	Not applicable.
١	Health	Not applicable.
l	Additional Good Practices	Not applicable.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Mono-constituent substance Diethylenetriamine, DETA

Section 1: Title

Product definition

Product name

Short title of the exposure scenario/List of use descriptors

Identified use name: Use as an intermediate - Industrial

Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC15

Substance supplied to that use in form of: As such

Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC06a

Specific Environmental Release Category: ESVOC 2

Processes and activities covered by the exposure scenario

Use of substance as an intermediate (not related to Strictly Controlled Conditions).

Includes recycling/recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).

Section 2: Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 0: Use in closed process, no likelihood of exposure

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 100%

Physical state: Liquid. Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

None identified. Human factors not influenced by risk management:

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

General exposures Continuous process (closed systems): No other specific measures identified.

Bulk product storage (closed systems): No other specific measures identified.

Respiratory protection: None.

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 1: Use in closed, continuous process with occasional controlled exposure

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 100%

Physical state: Liquid. **Amounts used:** Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified

Assumes a good basic standard of occupational hygiene is implemented. Other operational conditions affecting worker exposure:

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

General exposures Continuous process with sample collection (closed systems): No other specific measures identified.

Respiratory protection: None

Diethylenetriamine, DETA

Identified use name: Use as an intermediate - Industrial Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a,

> PROC08b, PROC15 Substance supplied to that use in form of: As such

Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC06a

Industrial

Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 2: Use in closed batch process (synthesis or formulation) **Product Characteristics:** Volatility: low Concentration of substance in product: Covers percentage substance in the product up to 100% **Physical state:** Liquid. Amounts used: Not applicable. Covers daily exposures up to 8 hours (unless stated differently). Frequency and duration of use: None identified. Human factors not influenced by risk management: Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures General exposures Use in contained batch processes with sample collection: No other specific measures identified. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 3: Use in batch and other process (synthesis) where opportunity for exposure arises Volatility: low Product Characteristics: Concentration of substance in product: Covers percentage substance in the product up to 100% **Physical state:** Liquid. Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). Human factors not influenced by risk management: None identified. Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures General exposures Batch process with sample collection (open systems): Provide extract ventilation to points where emissions occur. Respiratory protection: None Section 2.1 Control of worker exposure Contributing exposure scenario controlling worker exposure for 4: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities **Product Characteristics:** Volatility: low Concentration of substance in product: Covers percentage substance in the product up to 100% **Physical state:** Liquid. Amounts used: Not applicable. Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently). Human factors not influenced by risk management: None identified. Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented. Assumes activities are at ambient temperature (unless stated differently). Contributing scenarios: Operational conditions and risk management measures

Equipment cleaning and maintenance: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 1 hour. Wear suitable gloves tested to EN374.

Equipment cleaning and maintenance: Wear suitable gloves tested to EN374. Wear a respirator conforming to EN140 with Type A filter or better.

Respiratory protection: None

Diethylenetriamine, DETA

Identified use name: Use as an intermediate - Industrial Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a,

PROC08b, PROC15 Substance supplied to that use in form of: As such

Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC06a

84/89

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 5: Transfer of substance or preparation (charging/discharging) from/to

vessels/large containers at dedicated facilities

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 100%

Physical state: L iquid Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Bulk transfers Material transfers Dedicated facility: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 4 hours. Wear suitable gloves tested to EN374.

Respiratory protection: None

Section 2.1 Control of worker exposure

Contributing exposure scenario controlling worker exposure for 6: Use as laboratory reagent

Product Characteristics: Volatility: low

Concentration of substance in product: Covers percentage substance in the product up to 100%

Physical state: Liquid. Amounts used: Not applicable.

Frequency and duration of use: Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management: None identified.

Other operational conditions affecting worker exposure: Assumes a good basic standard of occupational hygiene is implemented.

Assumes activities are at ambient temperature (unless stated differently).

Contributing scenarios: Operational conditions and risk management measures

Laboratory activities: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours.

None Respiratory protection:

Section 2.2: Control of environmental exposure

Contributing exposure scenario controlling environmental exposure for 0: Industrial use resulting in manufacture of another substance (use of intermediates)

43000 Tonnes/year Amounts used:

Fraction of EU tonnage used in region:

Regional use tonnage (tonnes/year): Not available. Fraction of Regional tonnage used locally: Not available Annual site tonnage (tonnes/year): Not available. Average Local Daily Tonnage (kg/day): Not available. Maximum daily site tonnage (kg/day): 14333

Frequency and duration of use: Continuous release.

Emission Days (days/year): 300

Environmental factors not influenced by risk management:

Local freshwater dilution factor: 10 Default Local marine water dilution factor: 100 Default

Other operational conditions of use affecting environmental exposure:

2.00E-05 Release fraction to air from process (initial release prior to

RMM):

Release fraction to soil from process (initial release prior to 1.00E-003

Release fraction to wastewater from process (initial release

prior to RMM):

1.00E-02

Release fraction to air from wide dispersive use (regional only):

Not available.

Release fraction to wastewater from wide dispersive use:

Not available

Diethylenetriamine, DETA

Identified use name: Use as an intermediate - Industrial Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a,

PROC08b, PROC15 Substance supplied to that use in form of: As such

Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC06a

85/89

Release fraction to soil from wide dispersive use (regional

Technical on-site conditions and measures to reduce or limit discharges, air emissions and releases to soil:

Treat air emission to provide a typical removal efficiency of

Treat on-site wastewater (prior to receiving water discharge) to provide the required removal efficiency of 3 (%):

If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of ³ (%):

Not available.

Conditions and measures related to municipal sewage treatment plant:

Conditions and measures related to external recovery of waste:

Estimated substance removal from wastewater via domestic sewage treatment (%):

92.6%

Total efficiency of removal from wastewater after on-site and off-92.6%

site (domestic treatment plant) RMMs (%):

Not available.

Not applicable.

Not available.

Maximum allowable site tonnage (Msafe) based on release following 15640 kg/day

total wastewater treatment removal (kg/d):

Dispose of waste product or used containers according to local regulations.

Local release to soil, kg/day: 14.3 Local release to air, kg/day: 2.86E-01 Local release to sewage, kg/day: 143.3 Fraction of main source to local environment: 0.1

Section 3: Exposure estimation

Section 3.1Workers Exposure estimation Contributing exposure scenario controlling worker exposure for 0: Use in closed process, no likelihood of exposure					
Route of exposure	Contributing scenarios	Dose/Concentration	Justification		
Long term exposure, Systemic, Dermal	General exposures Continuous process (closed systems); Bulk product storage (closed systems)	0.34	Not applicable.		
Long term exposure, Systemic, Inhalable	General exposures Continuous process (closed systems); Bulk product storage (closed systems)	0.04	Not applicable.		
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.		
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.		
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.		
Short term exposure, Systemic, Dermal	General exposures Continuous process (closed systems); Bulk product storage (closed systems)	Not applicable	Not applicable.		
Short term exposure, Systemic, Inhalable	General exposures Continuous process (closed systems); Bulk product storage (closed systems)	Not applicable	Not applicable.		
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.		
Short term exposure, Local, Dermal	General exposures Continuous process (closed systems); Bulk product storage (closed systems)	Not applicable	Not applicable.		
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.		

Section 3.1Workers Exposure estimation

Contributing exposure scenario controlling worker exposure for 1: Use in closed, continuous process with occasional controlled exposure

Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	General exposures Continuous process with sample collection (closed systems)	1.37	Not applicable.
Long term exposure, Systemic, Inhalable	General exposures Continuous process with sample collection (closed systems)	4.30	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local,	Not applicable.	Not applicable.	Not applicable.

Diethylenetriamine, DETA

Identified use name: Use as an intermediate - Industrial Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC15

Substance supplied to that use in form of: As such

Sector of end use: SU03

Subsequent service life relevant for that use: No. Environmental Release Category: ERC06a

Short term exposure, Systemic, Dermal	General exposures Continuous process with sample collection (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	General exposures Continuous process with sample collection (closed systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	General exposures Continuous process with sample collection (closed systems)	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estimate	ation		
Contributing exposure scenario con	trolling worker exposure for 2: Us	se in closed batch process (syr	nthesis or formulation)
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	General exposures Use in contained batch processes with sample collection	0.34	Not applicable.
Long term exposure, Systemic, Inhalable	General exposures Use in contained batch processes with sample collection	12.90	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	General exposures Use in contained batch processes with sample collection	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	General exposures Use in contained batch processes with sample collection	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	General exposures Use in contained batch processes with sample collection	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Section 3.1Workers Exposure estimated Contributing exposure scenario con exposure arises		se in batch and other process (synthesis) where opportunity for
Route of exposure	Contributing scenarios	Dose/Concentration	Justification
Long term exposure, Systemic, Dermal	General exposures Batch process with sample collection (open systems)	0.34	Not applicable.
Long term exposure, Systemic, Inhalable	General exposures Batch process with sample collection (open systems)	0.04	Not applicable.
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Systemic, Dermal	General exposures Batch process with sample collection (open systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Inhalable	General exposures Batch process with sample collection (open systems)	Not applicable	Not applicable.
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.
Short term exposure, Local, Dermal	General exposures Batch process with sample collection (open systems)	Not applicable	Not applicable.
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.

Outline AdMinistration Francisco and motion					
Section 3.1Workers Exposure estimated Contributing exposure scenario con		ransfer of substance or preparation	on (charging/discharging) from/to		
vessels/large containers at non-dedi		Tantoror or Canodanico or propanal	on (changing, alcohanging) nomice		
Route of exposure	Contributing scenarios	Dose/Concentration	Justification		
Long term exposure, Systemic, Dermal	Equipment cleaning and maintenance	2.74	Not applicable.		
Long term exposure, Systemic, Inhalable	Equipment cleaning and maintenance	6.02; 4.30	Not applicable.		
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.		
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.		
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.		
Short term exposure, Systemic, Dermal	Equipment cleaning and maintenance	Not applicable	Not applicable.		
Short term exposure, Systemic, Inhalable	Equipment cleaning and maintenance	Not applicable	Not applicable.		
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.		
Short term exposure, Local, Dermal	Equipment cleaning and maintenance	Not applicable	Not applicable.		
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.		
Section 3.1Workers Exposure estima	ation				
Contributing exposure scenario con vessels/large containers at dedicate	trolling worker exposure for 5: T	ransfer of substance or preparati	on (charging/discharging) from/to		
Route of exposure	Contributing scenarios	Dose/Concentration	Justification		
Long term exposure, Systemic, Dermal	Bulk transfers Material transfers Dedicated facility	1.37	Not applicable.		
Long term exposure, Systemic, Inhalable	Bulk transfers Material transfers Dedicated facility	9.03	Not applicable.		
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.		
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.		
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.		
Short term exposure, Systemic, Dermal	Bulk transfers Material transfers Dedicated facility	Not applicable	Not applicable.		
Short term exposure, Systemic, Inhalable	Bulk transfers Material transfers Dedicated facility	Not applicable	Not applicable.		
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.		
Short term exposure, Local, Dermal	Bulk transfers Material transfers Dedicated facility	Not applicable	Not applicable.		
Short term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.		
Section 3.1Workers Exposure estima	ation				
Contributing exposure scenario con		se as laboratory reagent			
Route of exposure	Contributing scenarios	Dose/Concentration	Justification		
Long term exposure, Systemic, Dermal	Laboratory activities	0.34	Not applicable.		
Long term exposure, Systemic, Inhalable	Laboratory activities	9.03	Not applicable.		
Long term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.		
Long term exposure, Local, Dermal	Not applicable.	Not applicable.	Not applicable.		
Long term exposure, Local, Inhalable	Not applicable.	Not applicable.	Not applicable.		
Short term exposure, Systemic, Dermal	Laboratory activities	Not applicable	Not applicable.		
Short term exposure, Systemic, Inhalable	Laboratory activities	Not applicable	Not applicable.		
Short term exposure, Systemic, Combined	Not applicable.	Not applicable.	Not applicable.		
Short term exposure, Local, Dermal Short term exposure, Local, Inhalable	Laboratory activities Not applicable.	Not applicable Not applicable.	Not applicable. Not applicable.		

Inhalable

Section 3.2 Environment Exposure estimation

Contributing exposure scenario controlling environmental exposure for 0: Industrial use resulting in manufacture of another substance (use of intermediates)

> Release from point source (local exposure estimation)

kg/day

Total release for regional exposure estimation kg/day **Justification**

Waste water **Surface water** air (direct + STP) Soil (direct releases only) Not applicable. Not applicable. Not applicable. Not applicable.

Value

Not applicable. Not applicable. Not applicable. Not applicable. **Justification**

Not applicable. Not applicable. Not applicable.

Not applicable.

Concentration in sewage (PECstp)

Concentration in sewage sludge mg/kg dwt

Not applicable.

Not applicable.

Not applicable.

Not applicable.

Local concentration

PEC aquatic (local+regional)

Justification Not applicable.

Fresh water mg/l

Not applicable.

Surface water, Dissolved During emission Resulting PEC local, water (mg/l): 0.513; Surface water,

Dissolved Annual average: 0.442

Marine water mg/l

Not applicable.

During emission Resulting PEC local, water (mg/l): 0.051; Annual

Not applicable. average, Dissolved, Resulting

Intermittent release. mg/l

Not applicable. **Local concentration** Not applicable. PEC sediment (local+regional)

PEC soil (local+regional)

PEC air (local+regional)

114.1, 30 days; 37.5, 180 days

PEC local, water (mg/l): 0.042

Not applicable. **Justification** During emission

Fresh water sediment mg/kg dwt Marine water sediment mg/kg dwt Not applicable. Not applicable.

Local concentration

982.6 98.23

During emission **Justification** Not applicable.

Agricultural soil averaged mg/kg

Grassland averaged mg/kg dwt

Groundwater mg/l

Not applicable. Not applicable.

Not applicable.

15.0, 180 days Not applicable. Not applicable. Not applicable.

Justification

Not applicable.

During emission mg/m³ Annual average mg/m³ Annual deposition mg/m2/d **Local concentration** Not applicable. Not applicable. Not applicable.

Not applicable. 8.6E-05 Not applicable. PEC aquatic (local+regional)

Not applicable. Not applicable. **Justification**

Micro-organism mg/l

Local concentration Not applicable.

5.262

Not applicable.

Section 4: Guidance to check compliance with the exposure scenario

Environment

Health

Not available Not available

Section 5. Remarks: Additional good practice advice beyond the REACH CSA

Environment Health

Additional Good Practices

Not applicable. Not applicable. Not applicable.

Diethylenetriamine, DETA

Identified use name: Use as an intermediate - Industrial Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC15

Substance supplied to that use in form of: As such

Sector of end use: SU03 Subsequent service life relevant for that use: No.

Environmental Release Category: ERC06a