SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II, as amended by Regulation(EU) No. 2020/878

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

1.1 Product identifier

Product name: RTV577

Chemical name	Dibutyltin dilaurate
INDEX No.	Not applicable
CAS-No.	77-58-7
EC No.	201-039-8
REACH Registration No.	01-2119496068-27-XXXX

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

Identified uses: Catalyst Industrial
Uses advised against: Not known.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Importer/Distributor Information	:	Momentive Performance Materials GmbH Chempark Leverkusen Gebaeude V7 DE - 51368 Leverkusen Germany
Contact person	:	commercial.services@momentive.com
Telephone	:	General information +390510924300 (Customer Service Centre)
1.4 Emergency telephone number	:	Europe, Israel & All other: +44 (0) 1235239670; Middle East:+44 (0) 1235239671

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

The product has been classified according to the legislation in force.

Classification according to Regulation (EC) No 1272/2008 as amended.

Health Hazards

Skin corrosion	Category 1C	H314: Causes severe skin burns and eye damage.
Serious eye damage	Category 1	H318: Causes serious eye damage.
Skin sensitizer	Category 1	H317: May cause an allergic skin reaction.
Germ Cell Mutagenicity	Category 2	H341: Suspected of causing genetic defects.
Toxic to reproduction	Category 1B	H360FD: May damage fertility. May damage the unborn child.

Specific Target Organ Toxicity - Single Exposure	Category 1[1.]	H370: Causes damage to organs.

Target Organs

1. thymus

Environmental Hazards

Acute hazards to the aquatic environment	Category 1	H400: Very toxic to aquatic life.
Chronic hazards to the aquatic environment	Category 4	H413: May cause long lasting harmful effects to aquatic life.

2.2 Label Elements

Contains: Dibutyltin Dilaurate

Signal Words: Danger

Hazard Statement(s):

H314: Causes severe skin burns and eye damage.
H317: May cause an allergic skin reaction.
H341: Suspected of causing genetic defects.
H360FD: May damage fertility. May damage the unborn child.
H370: Causes damage to organs.
H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention:

P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P260: Do not breathe dust/fume/gas/mist/vapors/spray.
P264: Wash face, hands and any exposed skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P310: Immediately call a POISON CENTER or doctor/ physician.
P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P391: Collect spillage.

Unknown toxicity - Health

Acute toxicity, oral	0 %
Acute toxicity, dermal	0 %
Acute toxicity, inhalation, vapor	0 %

Acute toxicity, inhalation, dust or mist	0 %

Unknown toxicity - Environment

Acute hazards to the aquatic environment	0 %
Chronic hazards to the aquatic environment	0 %
Acute hazards to the aquatic environment	0 %
Chronic hazards to the aquatic environment	0 %

Additional Information: No data available.

2.3 Other hazards

PBT/vPvB data
Not fulfilling PBT (persistent/bioaccumulative/toxic) criteria, Not fulfilling vPvB (very persistent/very bioaccummulative) criteria

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

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

SECTION 3: Composition/information on ingredients

3.1 Substances

General information: No data available.
Chemical name Dibutyltin dilaurate
INDEX No.: Not applicable
CAS-No.: 77-58-7
EC No.: 201-039-8
REACH Registration No.: 01-2119496068-27-XXXX
M-Factor: Not applicable

Chemical name	Concentration	CAS-No.	EC No.	REACH Registration No.	M-Factor:	Notes
Dibutyltin Dilaurate	50 - <100%	77-58-7	201-039-8	01-2119496068-27-XXXX	Aquatic Toxicity (Acute): 1	#

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.
# This substance has workplace exposure limit(s).
PBT: persistent, bioaccumulative and toxic substance.
vPvB: very persistent and very bioaccumulative substance.

SECTION 4: First aid measures

General: Move into fresh air and keep at rest. Call a physician or poison control center immediately. Seek medical attention for all burns, regardless how minor they may seem. Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory tract irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If b CAUTION! First aid personnel must be aware of own risk during rescue!

4.1 Description of first aid measures

Inhalation: Move to fresh air. If respiratory problems, artificial respiration/oxygen. Get medical attention.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Promptly wash eyes with plenty of water while lifting the eye lids. Obtain medical attention without delay, preferably from an ophthalmologist.

Skin Contact: Wash off promptly and flush contaminated skin with water. Promptly remove clothing if soaked through and flush skin with water. Wash contaminated clothing before reuse. Call a physician or poison control center immediately.

Ingestion: If swallowed, do NOT induce vomiting. Give a glass of water. Call a physician or poison control center immediately.

4.2 Most important symptoms and effects, both acute and delayed: Gastrointestinal symptoms, including upset stomach. May cause burns of the gastrointestinal tract if swallowed. May cause chemical eye burns.

4.3 Indication of any immediate medical attention and special treatment needed

Hazards: Corrosive to skin and eyes. May cause burns of the gastrointestinal tract if swallowed.

Treatment: Flush thoroughly with water for at least 15 minutes. Get immediate medical assistance. If medical assistance is not immediately available, flush an additional 15 minutes. Do not give victim anything to drink if he is unconscious. If swallowed, do NOT induce vomiting. Give a glass of water. Wash off promptly and flush contaminated skin with water. Promptly remove clothing if soaked through and flush skin with water.

SECTION 5: Firefighting measures

General Fire Hazards: Do not use water jet as an extinguisher, as this will spread the fire. Use water spray to keep fire-exposed containers cool.

5.1 Extinguishing media

Suitable extinguishing media: Alcohol resistant foam. Carbon dioxide Dry chemical.

Unsuitable extinguishing media: Avoid water in straight hose stream; will scatter and spread fire.

5.2 Special hazards arising from the substance or mixture: In case of fire, carbon monoxide and carbon dioxide may be formed.

5.3 Advice for firefighters

Special fire-fighting procedures: Take precautionary measures against static discharges. To prevent and minimize fire or explosion risk from static accumulation and discharge, effectively bond and/or ground product transfer system.

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus and protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures: Avoid contact with eyes, skin, and clothing. Avoid contact with liquid and vapors. Use personal protective equipment. Use only in well-ventilated areas.

6.2 Environmental Precautions: Do not allow runoff to sewer, waterway or ground.

6.3 Methods and material for containment and cleaning up: Absorb spillage with suitable absorbent material. Shovel up and place in a container for salvage or disposal.

6.4 Reference to other sections: Remove sources of ignition. In case of spills, beware of slippery floors and surfaces. See Section 8 of the SDS for Personal Protective Equipment. Collect and dispose of spillage as indicated in section 13 of the SDS.

SECTION 7: Handling and storage:

7.1 Precautions for safe handling: Do not taste or swallow. Avoid contact with eyes, skin, and clothing. Wash hands after handling. Provide adequate ventilation. Avoid inhalation of dust and vapors.

Storage conditions: Keep container tightly closed. Keep away from sources of ignition - No smoking.

7.2 Conditions for safe storage, including any incompatibilities: Keep container tightly closed. Keep away from sources of ignition - No smoking.

Storage Stability: Material is stable under normal conditions.

7.3 Specific end use(s): No data available.

SECTION 8: Exposure controls/personal protection

8.1 Control Parameters

Occupational Exposure Limits

Chemical name	Type	Exposure Limit Values	Source
Dibutyltin Dilaurate - as Sn	TWA	0,1 mg/m3	UK. EH40 Workplace Exposure Limits (WELs), as amended (12 2011)
	STEL	0,2 mg/m3	UK. EH40 Workplace Exposure Limits (WELs), as amended (01 2020)

Biological Limit Values

None.

DNEL-Values

Critical component	Type	Route of Exposure		Remarks
Dibutyltin Dilaurate	Workers	Dermal	1 mg/kg bw/day	

RTV577

		Inhalation	0,07 mg/m3	
		Dermal	0,2 mg/kg bw/day	
		Inhalation	0,01 mg/m3	
	Consumers	Dermal	0,5 mg/kg bw/day	
		Inhalation	0,02 mg/m3	
		Ingestion	0,01 mg/kg bw/day	
		Dermal	0,08 mg/kg bw/day	
		Inhalation	0,003 mg/m3	
		Ingestion	0,002 mg/kg bw/day	

PNEC-Values

Critical component	Environmental compartment		Remarks
Dibutyltin Dilaurate	Water	0,463 µg/l	
	Seawater	0,0463 µg/l	
	Intermittent release	4,63 µg/l	
	freshwater sediment	0,05 mg/kg	Derived from PNEC(freshwater) using the equilibrium partitioning method.
	Saltwater Sediment	0,005 mg/kg	Derived from PNEC(freshwater) using the equilibrium partitioning method.
	soil	0,0407 mg/kg	
	Sewage treatment plant	100 mg/l	
	Oral	0,2 mg/kg	

8.2 Exposure controls

Appropriate Engineering Controls: Provide eyewash station and safety shower. Use only with adequate ventilation.

Individual protection measures, such as personal protective equipment

General information: Use only in well-ventilated areas. Do not eat, drink or smoke when using the product. Wash hands after handling. Practice good housekeeping.

Eye/face protection: Face shield Safety glasses with side-shields conforming to EN166

Skin protection

Hand Protection: Advice: Butyl rubber. Nitrile rubber. Polyvinyl chloride (PVC). Neoprene. This recommendation is valid only for our Product as delivered. If this product will be mixed with other substances you need to contact a supplier of CE approved protective gloves (e.g. KCL GmbH, D-36124 Eichenzell, Tel. 0049 (0) 6659 87300, Fax. 0049 (0) 6659 87155, email: vertrieb@kcl.de).

Other: Safety shoes Wear suitable protective clothing, gloves and eye/face protection.

Respiratory Protection: Respiratory protection mask with Filtertype ABEK Respirator with a vapour filter (EN 141)

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

Environmental exposure controls: No release to wastewater from process as such, wastewater emissions limited to release generated from final equipment cleaning step using water

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	Colorless
Odor:	Faint
Odor Threshold:	No data available.
pH:	Not applicable
Freezing point:	28,5 °C (other methods)
Boiling Point:	205 °C (1,013 hPa) (other methods)
Flash Point:	191 °C (other methods)
Evaporation Rate:	No data available.
Flammability (solid, gas):	No data available.
Flammability Limit - Upper (%):	No data available.
Flammability Limit - Lower (%):	No data available.
Vapor pressure:	0,0000077 hPa (25 °C)
Relative vapor density:	No data available.
Density:	1,043 g/cm3 (28,5 °C)
Relative density:	No data available.
Solubility(ies)	
Solubility in Water:	<= 1,43 mg/l (20 °C)
Solubility (other):	No data available.
Partition coefficient (n-octanol/water) Log Pow:	4,44 ; pH 6,1 (OECD Test Guideline 107)
Autoignition Temperature:	> 400 °C
Decomposition Temperature:	No data available.
SADT:	No data available.
Viscosity, dynamic:	No data available.
Viscosity, kinematic:	No data available.
Explosive properties:	Not classified
Oxidizing properties:	No data available.

9.2 Other information

No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity:	No data available.
10.2 Chemical Stability:	Material is stable under normal conditions.
10.3 Possibility of hazardous reactions:	Hazardous polymerization does not occur.
10.4 Conditions to avoid:	None known.
10.5 Incompatible Materials:	Strong oxides. Strong bases.
10.6 Hazardous Decomposition Products:	Carbon oxides Tin fumes.

SECTION 11: Toxicological information

Information on likely routes of exposure

Inhalation: No data available.

Ingestion: No data available.

Skin Contact: No data available.

Eye contact: No data available.

11.1 Information on toxicological effects

Acute toxicity

Oral

Product: Not classified for acute toxicity based on available data.

Specified substance(s)

Dibutyltin Dilaurate — LD 50 (Rat): 2.071 mg/kg

Dermal

Product: Not classified for acute toxicity based on available data.

Specified substance(s)

Dibutyltin Dilaurate — LD 50 (Rat): > 2.000 mg/kg

Inhalation

Product: Not classified for acute toxicity based on available data.

Specified substance(s)

Dibutyltin Dilaurate — No data available.

Repeated dose toxicity

Product: No data available.

Specified substance(s)

Dibutyltin Dilaurate — NOAEL (Rat(male and female), Oral, 28 d): 0,3 - 0,4 mg/l
NOAEL (Rat(males), Oral, 28 d): 1,9 - 2,3 mg/l
NOAEL (Rat(female), Oral, 28 d): 1,7 - 2,3 mg/l

Skin Corrosion/Irritation:

Product: OECD-Guideline 404 (Acute Dermal Irritation/Corrosion) (Rabbit): Corrosive

Specified substance(s)

Dibutyltin Dilaurate — (Rabbit): Severe skin irritation.

Serious Eye Damage/Eye Irritation:

Product: No data available.

Specified substance(s)

Dibutyltin Dilaurate — OECD Test Guideline 405 (Rabbit, 21 d): Strongly irritating. Irritating to eyes.

Respiratory or Skin Sensitization:

Product: No data available.

Specified substance(s)

Dibutyltin Dilaurate — Maximisation Test, OECD Test Guideline 406 (Guinea Pig): Sensitizer

Germ Cell Mutagenicity

In vitro

Product: No data available.

Specified substance(s)

Dibutyltin Dilaurate — Ames-Test (OECD-Guideline 471 (Genetic Toxicology: Salmonella typhimurium, Reverse Mutation Assay)): negative (not mutagenic) Mammalian cytogenicity test (OECD 476): negative

In vivo

Product: No data available.

Specified substance(s)

Dibutyltin Dilaurate — (OECD-Guideline 474 (Genetic Toxicology: Micronucleus Test)) Oral (Mouse)positive The health hazard evaluation is based on the toxicological properties of a similar material.

Carcinogenicity

Product: No data available.

Specified substance(s)

Dibutyltin Dilaurate — No data available.

Reproductive toxicity

Product: No data available.

Specified substance(s)

Dibutyltin Dilaurate — No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specified substance(s)

Dibutyltin Dilaurate — No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Specified substance(s)

Dibutyltin Dilaurate — No data available.

Aspiration Hazard

Product: No data available.

Specified substance(s)

Dibutyltin Dilaurate — No data available.

11.2 Information on other hazards

Endocrine disrupting properties

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

Components:

Dibutyltin Dilaurate — No data available.

Other effects: No data available.

SECTION 12: Ecological information

12.1 Toxicity

Acute toxicity

Fish
Product: No data available.

Specified substance(s)
Dibutyltin Dilaurate No data available.

Aquatic Invertebrates
Product: No data available.

Specified substance(s)
Dibutyltin Dilaurate Fresh water ; EC50 (Daphnia magna, 48 h): < 0,463 mg/l (OECD Test Guideline 202)

Chronic Toxicity

Fish
Product: No data available.

Specified substance(s)
Dibutyltin Dilaurate No data available.

Aquatic Invertebrates
Product: No data available.

Specified substance(s)
Dibutyltin Dilaurate No data available.

Toxicity to Aquatic Plants
Product: No data available.

Specified substance(s)
Dibutyltin Dilaurate Fresh water ; EC50 (Desmodesmus subspicatus (green algae), 72 h): > 1 mg/l (OECD Test Guideline 201)

12.2 Persistence and Degradability

Biodegradation
Product: No data available.

Specified substance(s)
Dibutyltin Dilaurate Biological degradability (39 d): 23 % The product is not readily biodegradable.

BOD/COD Ratio
Product No data available.

Specified substance(s)
Dibutyltin Dilaurate No data available.

12.3 Bioaccumulative potential
Product: No data available.

Specified substance(s)
Dibutyltin Dilaurate The product is not bioaccumulating.

12.4 Mobility in soil: No data available.
Known or predicted distribution to environmental compartments
Dibutyltin Dilaurate No data available.

12.5 Results of PBT and vPvB assessment:	Not fulfilling PBT (persistent/bioaccumulative/toxic) criteria Not fulfilling vPvB (very persistent/very bioaccummulative) criteria
Dibutyltin Dilaurate	No data available.

12.6 Endocrine disrupting properties:

Product:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
Components:	
Dibutyltin Dilaurate	No data available.

12.7 Other adverse effects:

Other hazards

Product:	No data available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

General information:	See Section 8 for information on appropriate personal protective equipment. The generation of waste should be avoided or minimized wherever possible. Do not discharge into drains, water courses or onto the ground.
Disposal methods:	Can be incinerated when in compliance with local regulations.

SECTION 14: Transport information

ADR

14.1 UN number or ID number:	UN 1760
14.2 UN Proper Shipping Name:	CORROSIVE LIQUID, N.O.S.(Dibutyltin Dilaurate)
14.3 Transport Hazard Class(es)	
Class:	8
Label(s):	8
Hazard No. (ADR):	80
Tunnel restriction code:	(E)
14.4 Packing Group:	III
14.5 Environmental Hazards:	Yes
Marine Pollutant	Yes

ADN

14.1 UN number or ID number:	UN 1760
14.2 UN Proper Shipping Name:	CORROSIVE LIQUID, N.O.S.(Dibutyltin Dilaurate)
14.3 Transport Hazard Class(es)	
Class:	8
Label(s):	8
14.4 Packing Group:	III
14.5 Environmental Hazards:	Yes
Marine Pollutant	Yes

RID

14.1 UN number or ID number:	UN 1760
14.2 UN Proper Shipping Name	CORROSIVE LIQUID, N.O.S.(Dibutyltin Dilaurate)

14.3 Transport Hazard Class(es)
Class: 8
Label(s): 8

14.4 Packing Group: III

14.5 Environmental Hazards: Yes
Marine Pollutant Yes

IMDG

14.1 UN number or ID number: UN 1760
14.2 UN Proper Shipping Name: CORROSIVE LIQUID, N.O.S.(Dibutyltin Dilaurate)
14.3 Transport Hazard Class(es)
Class: 8
Label(s): 8
EmS No.: F-A, S-B

14.4 Packing Group: III
14.5 Environmental Hazards: Yes
Marine Pollutant: Yes

IATA

14.1 UN number or ID number: UN 1760
14.2 Proper Shipping Name: Corrosive liquid, n.o.s.(Dibutyltin Dilaurate)
14.3 Transport Hazard Class(es):
Class: 8
Label(s): 8

14.4 Packing Group: III
14.5 Environmental Hazards: Yes
Marine Pollutant: Yes

14.6 Special precautions for user: This product is considered hazardous for transportation. Momentive Performance Materials ships this material under Limited Quantity or Consumer Commodity provisions of the transport regulations. Dangerous for the environment Keep away from food, foodstuff, acids and bases.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code:

Not applicable

SECTION 15: Regulatory information

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

EU Regulations

Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex I, Controlled Substances: none

Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex II, New Substances: none

EU. Regulation 2019/1021/EU on persistent organic pollutants (POPs) (recast), as amended: none

Regulation (EC) No. 649/2012 Import and export of dangerous chemicals:

Chemical name	CAS-No.	Concentration
Dibutyltin Dilaurate	77-58-7	100%

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended:
none

EU. REACH Candidate List of Substances of Very High Concern for Authorization (SVHC):
none

Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use:

The packaging shall be visibly, legibly and indelibly marked as follows:
Restricted to professional users.

Chemical name	CAS-No.	Concentration
Dibutyltin Dilaurate	77-58-7	100%

Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens and mutagens at work.:

Chemical name	CAS-No.	Concentration
Dibutyltin Dilaurate	77-58-7	100%

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breast feeding.:

Chemical name	CAS-No.	Concentration
Dibutyltin Dilaurate	77-58-7	100%

EU. Directive 2012/18/EU (SEVESO III) on major accident hazards involving dangerous substances, Annex I:

Classification	Lower-tier Requirements	Upper-tier Requirements
E1. Hazardous to the aquatic environment	100 t	200 t
H3. STOT SE	50 t	200 t
E1. Hazardous to the aquatic environment	100 t	200 t
H3. STOT SE	50 t	200 t

EU. Regulation No. 166/2006 PRTR (Pollutant Release and Transfer Registry), Annex II: Pollutants:

Chemical name	CAS-No.	Concentration
Dibutyltin Dilaurate	77-58-7	100%

Directive 98/24/EC on the protection of workers from the risks related to chemical agents at work:

Chemical name	CAS-No.	Concentration
Dibutyltin Dilaurate	77-58-7	100%

15.2 Chemical safety assessment: A Chemical Safety Assessment has been performed on this substance.

Inventory Status

Australia Industrial Chem. Act (AIIC):	On or in compliance with the inventory	Remarks: None.
Canada DSL Inventory List:	On or in compliance with the inventory	Remarks: None.
Canada NDSL Inventory:	Not in compliance with the inventory.	Remarks: None.
China Inv. Existing Chemical Substances:	On or in compliance with the inventory	Remarks: None.

Japan (ENCS) List:	On or in compliance with the inventory	Remarks: None.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory	Remarks: None.
New Zealand Inventory of Chemicals:	On or in compliance with the inventory	Remarks: None.
Philippines PICCS:	On or in compliance with the inventory	Remarks: None.
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory	Remarks: None.
US TSCA Inventory:	On or in compliance with the inventory	Remarks: None.
REACH:	If purchased from Momentive Performance Materials GmbH in Leverkusen, Germany, all substances in this product have been registered by Momentive Performance Materials GmbH or upstream in our supply chain or are exempt from registration under Regulation (EC) No 1907/2006 (REACH). For polymers, this includes the constituent monomers and other reactants.	Remarks: None.

SECTION 16: Other information

Revision Information: Not relevant.

Key literature references and sources for data: No data available.

Wording of the H-statements in section 2 and 3

H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H341	Suspected of causing genetic defects.
H360FD	May damage fertility. May damage the unborn child.
H370	Causes damage to organs.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

Training information: No data available.

Issue Date: 27.10.2022

Disclaimer:

Notice to reader

Unless otherwise specified in section 1.2, Momentive Products are intended for industrial application only.
They are not intended for specific medical applications, neither for long-lasting (> 30 days) implantation into the human body, injected or directly ingested, nor for the manufacture of multiple usable contraceptives.

Further Information

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

Annex to the extended Safety Data Sheet (eSDS)

Content

Exposure Scenario 1.

Exposure scenario worker

1.Manufacture of substance

List of use descriptors	
Sector(s) of use	SU3: Industrial uses: Uses of substances as such or in

	preparations at industrial sites SU8: Manufacture of bulk, large scale chemicals (including petroleum products) SU9: Manufacture of fine chemicals
Product categories [PC]:	

Name of contributing environmental scenario and corresponding ERC	Manufacture of substance: ERC1: Manufacture of the substance

List of names of contributing worker scenarios and corresponding PROCs	Manufacture of substance: PROC1: Use in closed process, no likelihood of exposure PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

2.1.Contributing exposure scenario controlling environmental exposure for: Manufacture of substance

Product characteristics

Physical state	liquid

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Annual amount per site	33 tonnes/year Manufacture of the substance
Fraction of EU tonnage used in region:	1 Manufacture of the substance

Frequency and duration of use

Batch process:	3 Emission days Manufacture of the substance
Continuous process:	330 Emission days, Hazardous waste incineration.

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	172.000,000 m3/d
Local freshwater dilution factor	1.000
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
Intermittent release	3	5 %	0,01 %	6 %	Manufacture of the substance
Continuous release	330	0,01 %	-	0,01 %	Hazardous waste incineration.

Other relevant operational conditions	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release

See chapter 8 of the safety data sheet (Environmental exposure controls).

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Air	Exhaust air scrubber.
Soil	not relevant
Water	Ensure all waste water is collected and treated via a WWTP.
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m^3/d):	
type:	industrial, municipal
Discharge rate:	1.000 m3/d
Treatment effectiveness:	99 %
Sludge treatment technique:	Incineration
Measures to limit air emissions:	not relevant
Remarks:	not relevant

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Hazardous waste incineration.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Manufacture of substance

Process Categories:	PROC1: Use in closed process, no likelihood of exposure PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Product characteristics

Concentration of the substance in a mixture:	Covers percentage substance in the product up to 100 % (unless stated differently).

Physical form of the product:	liquid
Vapour pressure:	not relevant
Process temperature:	25 °C

Remarks	not relevant

Amounts used

Maximum daily site tonnage (kg/day):	11.000 kg On-site

Frequency and duration of use

	Use duration:	**Frequency of use:**	**Remarks**
Exposure time	30 - 120 min	4 - 5 days per week	PROC1
Exposure time	15 min		PROC4
Exposure time	240 - 480 min	4 - 5 days per week	PROC8b
Exposure time	480 min		PROC9

Human factors not influenced by risk management

Exposed skin areas:

Palm of one hand	240 cm² PROC1

Palm of both hands	480 cm² PROC4

Both hands	960 cm² PROC8b PROC9

Other given operational conditions affecting workers exposure

Area of use	**Room size:**	**Temperature:**	**Ventilation rate**	**Remarks**
Indoor use			10	All relevant Process Categories

Other relevant operational conditions:	Respiration: 30 m³/day Body weight:: 70 kg Room volume: 100 - 1000 m3 . Use in closed process, no likelihood of exposure Transfer of substance or mixture (charging and discharging) at dedicated facilities Room volume: 1000 m3 . Use in batch and other process (synthesis) where opportunity for exposure arises Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Process temperature: 50 - 150 °C . Use in batch and other process (synthesis) where opportunity for exposure arises Process temperature: 60 °C . Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source towards the worker

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Industrial:	Inhalation, Dermal	Containment measures required		All relevant Process Categories
	Inhalation	with local exhaust ventilation	90 %	PROC4, PROC9

Organisational measures to prevent/limit releases, dispersion and exposure

Application	Route of Exposure	Protective Measures	Remarks
Industrial:	Inhalation, Dermal	Specific workers training in use of personal protective equipment	All relevant Process Categories

Conditions and measures related to personal protection, hygiene and health evaluation

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Industrial:	Inhalation, Dermal	See chapter 8 of the safety data sheet (Personal protection equipment)		All relevant Process Categories
	Inhalation	Wear respirator if there is dust formation.		All relevant Process Categories
	Dermal	Wear suitable gloves.	90 %	All relevant Process Categories
	Dermal	Wear suitable protective clothing., Wear eye protection/face protection.		All relevant Process Categories

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Manufacture of substance:

ERC1:

Compartment	PEC	RCR	Method	Remarks
Fresh water	0,345 ng/L	< 0,01	EUSES	
freshwater sediment	0,0375 µg/kg wwt	< 0,01	EUSES	
Saltwater	0,0 mg/l	< 0,01	EUSES	
Saltwater Sediment	0,0 mg/kg wwt	< 0,01	EUSES	
Soil	0,903 µg/kg wwt	0,02	EUSES	
Sewage treatment plant	0,03 mg/l	< 0,01	EUSES	

Waste:

Compartment	PEC	RCR	Method	Remarks
Fresh water	15,6 ng/L	0,03	EUSES	Hazardous waste incineration.none
freshwater sediment	1,7 µg/kg wwt	0,03	EUSES	Hazardous waste incineration.none
Saltwater	1,56 ng/L	0,03	EUSES	Hazardous waste incineration.none
Saltwater Sediment	0,17 µg/kg wwt	0,03	EUSES	Hazardous waste incineration.none
Soil	3,4 µg/kg wwt	0,08	EUSES	Hazardous waste incineration.none
Sewage treatment plant	0,157 µg/l	< 0,01	EUSES	Hazardous waste incineration.none

Health:

Manufacture of substance:

PROC1:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	Indoor, With local exhaust ventilation, including modification factor for exposure duration	0,00 µg/m³	0,00	StoffenManager (inhalation exposure), Handling of product in tightly closed containers	none
Worker - dermal, long-term - systemic	Indoor, including modification factor for use of appropriate dermal protection, including modification factor for exposure duration	0,0343 mg/kg bw/day	0,172	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,172		none

PROC4:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	Indoor, With local exhaust ventilation	0,81 µg/m³	0,081	Used ART model., Activities with open liquid surfaces or open reservoirs - activity with agitated surfaces	none
Worker - dermal, long-term - systemic	Indoor, including modification factor for	0,0686 mg/kg bw/day	0,343	ECETOC TRA worker v3	none

	use of appropriate dermal protection, including modification factor for exposure duration, With local exhaust ventilation				
Worker - combined, long-term - systemic			0,424		none

PROC8b:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	Indoor, With local exhaust ventilation	0,00 mg/m³	0,00	StoffenManager (inhalation exposure), Handling of product in tightly closed containers	none
Worker - dermal, long-term - systemic	Indoor, including modification factor for use of appropriate dermal protection, With local exhaust ventilation	0,0686 mg/kg bw/day	0,343	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,343		none

PROC9:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	Indoor, With local exhaust ventilation	0,0039 mg/m³	0,39	Used ART model., Transfer of liquid products -	none

				falling liquids	
Worker - dermal, long-term - systemic	Indoor, including modification factor for use of appropriate dermal protection, With local exhaust ventilation	0,0686 mg/kg bw/day	0,343	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,733		none

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Exposure Scenario 2.

Exposure scenario worker

1.Formulation into mixture

List of use descriptors	
Sector(s) of use	SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites SU10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys)
Product categories [PC]:	PC1: Adhesives, sealants PC9a: Coatings and paints, thinners, paint removers PC26: Paper and board treatment products PC32: Polymer preparations and compounds PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids

Name of contributing environmental	Formulation into mixture:

scenario and corresponding ERC	ERC2: Formulation into mixture (mixtures)

List of names of contributing worker scenarios and corresponding PROCs	Formulation into mixture: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

2.1.Contributing exposure scenario controlling environmental exposure for: Formulation into mixture

Product characteristics

Physical state	liquid

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Annual amount per site	3,65 tonnes/year Formulation into mixture
Daily amount per site	10 kg

Frequency and duration of use

Batch process:	not relevant
Continuous process:	365 Emission days, Formulation into mixture

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	172.000,000 m3/d
Local freshwater dilution factor	1.000
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
Intermittent release	10	0 %	0 %	0,001 %	

Other relevant operational conditions	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release

See chapter 8 of the safety data sheet (Environmental exposure controls).

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Air	Exhaust air scrubber., Incineration Effectiveness: 100 %.
Soil	not relevant
Water	Ensure all waste water is collected and treated via a WWTP.
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Size of municipal sewage system/treatment plant (m^3/d):	
type:	municipal, industrial
Discharge rate:	1.000 m3/d
Treatment effectiveness:	99 %
Sludge treatment technique:	Incineration
Measures to limit air emissions:	not relevant

Remarks:	not relevant

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Hazardous waste incineration.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Formulation into mixture

Process Categories:	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Product characteristics

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

Physical form of the product:	liquid
Vapour pressure:	not relevant
Process temperature:	25 °C
Remarks	not relevant

Amounts used

Amounts used	10 kilograms per day Formulation

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Exposure time	30 - 120 min	4 - 5 days per week	PROC1
Exposure time	15 - 60 min	4 - 5 days per week	PROC2, PROC3, PROC4, PROC5, PROC8b, PROC9

Human factors not influenced by risk management

Exposed skin areas:

Palm of one hand	240 cm² PROC1 PROC3
Palm of both hands	480 cm² PROC2 PROC4 PROC5
Both hands	960 cm² PROC8b PROC9

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use			10	All relevant Process Categories

Other relevant operational conditions:	Respiration: 30 m³/day Body weight:: 70 kg Room volume: 100 - 1000 m3

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source towards the worker

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Industrial:	Inhalation	Provide adequate ventilation.		All relevant Process Categories
	Inhalation	Indoor, with local exhaust ventilation	> 95 %	All relevant Process Categories

Organisational measures to prevent/limit releases, dispersion and exposure

Application	Route of Exposure	Protective Measures	Remarks
Industrial:	Dermal, Inhalation	Specific workers training in use of personal protective equipment	All relevant Process Categories

Conditions and measures related to personal protection, hygiene and health evaluation

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Industrial:	Inhalation, Dermal	See chapter 8 of the safety data sheet (Personal protection equipment)		All relevant Process Categories
	Inhalation	If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.		All relevant Process Categories
	Dermal	Wear suitable gloves.	90 %	All relevant Process Categories
	Dermal	Wear suitable protective clothing.		All relevant Process Categories

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Formulation into mixture:

ERC2:

Compartment	PEC	RCR	Method	Remarks
Fresh water	0,114 µg/l	0,25	EUSES	
freshwater sediment	0,0124 mg/kg wwt	0,25	EUSES	
Saltwater	0,0114 µg/l	0,25	EUSES	
Saltwater Sediment	1,24 µg/kg wwt	0,25	EUSES	

Soil	0,0245 mg/kg wwt	0,6	EUSES	
Sewage treatment plant	1,15 µg/l	< 0,01	EUSES	

Waste:

Compartment	PEC	RCR	Method	Remarks
Fresh water	0,0156 µg/l	0,03	EUSES	
freshwater sediment	1,7 µg/kg wwt	0,03	EUSES	
Saltwater	1,56 ng/L	0,03	EUSES	
Saltwater Sediment	0,17 µg/kg wwt	0,03	EUSES	
Soil	3,4 µg/kg wwt	0,08	EUSES	
Sewage treatment plant	0,157 µg/l	< 0,01	EUSES	

Health:

Formulation into mixture:

PROC1:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	Without local exhaust ventilation, including modification factor for exposure duration	0,00 mg/m³	0,00	StoffenManager (inhalation exposure), Handling of product in tightly closed containers	none
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, including modification factor for exposure duration, Without local exhaust ventilation, Including modification factor for concentration in product	0,0034 mg/kg bw/day	0,017	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,017		none

PROC2:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	With local exhaust ventilation, Indoor, Including modificatio	5,26 µg/m³	0,526	ECETOC TRA worker v3	none

	n factor for concentration in product, including modification factor for exposure duration				
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Indoor, With local exhaust ventilation, Including modification factor for concentration in product	0,0137 mg/kg bw/day	0,0685	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,595		none

PROC3:

	Specific condition	**Exposure level**	**RCR**	**Method**	**Remarks**
Worker - inhalative, long-term - systemic	With local exhaust ventilation, including modification factor for exposure duration, Including modification factor for concentration in product	5,26 µg/m³	0,526	ECETOC TRA worker v3	none
Worker - dermal, long-term - systemic	including modification factor for	0,0034 mg/kg bw/day	0,017	ECETOC TRA worker v3	none

	use of appropriate dermal protection, With local exhaust ventilation, including modification factor for exposure duration, Including modification factor for concentration in product				
Worker - combined, long-term - systemic			0,543		none

PROC4:

	Specific condition	**Exposure level**	**RCR**	**Method**	**Remarks**
Worker - inhalative, long-term - systemic	With local exhaust ventilation, including modification factor for exposure duration, Including modification factor for concentration in product	5,26 µg/m³	0,526	ECETOC TRA worker v3	none
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, With local exhaust ventilation, including modificatio	0,0686 mg/kg bw/day	0,343	ECETOC TRA worker v3	none

	n factor for exposure duration, Including modification factor for concentration in product				
Worker - combined, long-term - systemic			0,869		none

PROC5:

	Specific condition	**Exposure level**	**RCR**	**Method**	**Remarks**
Worker - inhalative, long-term - systemic	With local exhaust ventilation, including modification factor for exposure duration, Including modification factor for concentration in product	5,26 µg/m³	0,526	ECETOC TRA worker v3	none
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, With local exhaust ventilation, including modification factor for exposure duration, Including modification factor for concentration in product	0,0069 mg/kg bw/day	0,0345	ECETOC TRA worker v3	none

Worker - combined, long-term - systemic			0,516		none

PROC8b:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	With local exhaust ventilation, including modification factor for exposure duration	5,26 µg/m³	0,526	ECETOC TRA worker v3	none
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, With local exhaust ventilation, including modification factor for exposure duration, Including modification factor for concentration in product	0,0686 mg/kg bw/day	0,343	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic	Including modification factor for concentration in product		0,869		none

PROC9:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	With local exhaust ventilation, including	5,26 µg/m³	0,526	ECETOC TRA worker v3	none

	modification factor for exposure duration, Including modification factor for concentration in product				
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, With local exhaust ventilation, including modification factor for exposure duration, Including modification factor for concentration in product	0,0686 mg/kg bw/day	0,343	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,869		none

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Exposure Scenario 3.

Exposure scenario worker

1.Industrial use, Process regulators (synthesis regulators) - Catalysts

List of use descriptors

Sector(s) of use	SU5: Manufacture of textiles, leather, fur SU6a: Manufacture of wood and wood products SU6b: Manufacture of pulp, paper and paper products SU9: Manufacture of fine chemicals SU10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys) SU11: Manufacture of rubber products SU12: Manufacture of plastics products, including compounding and conversion SU15: Manufacture of fabricated metal products, except machinery and equipment SU16: Manufacture of computer, electronic and optical products, electrical equipment SU17: General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment SU18: Manufacture of furniture SU19: Building and construction work
Product categories [PC]:	PC1: Adhesives, sealants PC9a: Coatings and paints, thinners, paint removers PC14: Metal surface treatment products PC15: Non-metal surface treatment products PC19: Intermediate (precursor) PC31: Polishes and wax blends PC32: Polymer preparations and compounds PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids PC35: Washing and cleaning products PC0: Other

Name of contributing environmental scenario and corresponding ERC	Industrial use, Process regulators (synthesis regulators) - Catalysts:

	ERC3: Formulation in materials ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) ERC5: Industrial use resulting in inclusion into or onto a matrix ERC6b: Industrial use of reactive processing aids ERC6d: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)

List of names of contributing worker scenarios and corresponding PROCs	Industrial use: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation

2.1.Contributing exposure scenario controlling environmental exposure for: Industrial use, Process regulators (synthesis regulators) - Catalysts

Product characteristics

Physical state	liquid

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Annual amount per site	850 tonnes/year Formulation into solid matrix Use of non-reactive processing aid at industrial site (no inclusion into or onto article) Use at industrial site leading to inclusion into/onto article Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)
Annual amount per site	0,365 tonnes/year Use of reactive processing aid at industrial site (no inclusion into or onto article)
Fraction of EU tonnage used in region:	1

Frequency and duration of use

Batch process:	not relevant
Continuous process:	365 Emission days

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	

Continuous release	365	0 %	0 %	-	Formulation into solid matrix Use of non-reactive processing aid at industrial site (no inclusion into or onto article) Use at industrial site leading to inclusion into/onto article Use of reactive processing aid at industrial site (no inclusion into or onto article) Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)
Continuous release	330	0,01 %	-	0,01 %	Hazardous waste incineration.

Other relevant operational conditions	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release

See chapter 8 of the safety data sheet (Environmental exposure controls).

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Air	Air emission abatement not specifically required for this substance.
Soil	not relevant
Water	Ensure all waste water is collected and treated via a WWTP.
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Hazardous waste incineration.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Industrial use, Process regulators (synthesis regulators) - Catalysts

Process Categories:	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation

Product characteristics

Concentration of the substance in a mixture:	1% solution Use in closed process, no likelihood of exposure Use in closed, continuous process with occasional controlled exposure Use in closed batch process (synthesis or formulation) Use in batch and other process (synthesis) where opportunity for exposure arises Mixing or blending in batch processes Roller application or brushing Treatment of articles by dipping and pouring Production of preparations or articles by tabletting, compression, extrusion, pelletisation Covers percentage substance in the product up to 5 %. Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Physical form of the product:	liquid
Vapour pressure:	not relevant
Process temperature:	25 °C
Remarks	not relevant

Amounts used

Maximum daily site tonnage (kg/day):	1 kg Industrial use of reactive processing aids
Amounts used	850 tonnes/year

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Exposure time	240 - 480 min	1 Exposure time per day	All relevant Process Categories

Human factors not influenced by risk management

Exposed skin areas:

Palm of one hand	240 cm² PROC1 PROC3 PROC13
Palm of both hands	480 cm² PROC2 PROC4 PROC5 PROC10 PROC14
Both hands	960 cm² PROC8b PROC9

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use			10	All relevant Process Categories

Other relevant operational conditions:	Respiration: 30 m³/day Body weight:: 70 kg Room volume: > 1000 m3

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source towards the worker

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Industrial:	Inhalation	Provide adequate ventilation.		All relevant Process Categories
	Inhalation	Indoor, with local exhaust ventilation	> 95 %	All relevant Process Categories

Organisational measures to prevent/limit releases, dispersion and exposure

Application	Route of Exposure	Protective Measures	Remarks
Industrial:	Dermal, Inhalation	Specific workers training in use of personal protective equipment	All relevant Process Categories

Conditions and measures related to personal protection, hygiene and health evaluation

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Industrial:	Inhalation, Dermal	See chapter 8 of the safety data sheet (Personal protection equipment)		All relevant Process Categories
	Inhalation	If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn.	90 %	All relevant Process Categories
	Dermal	Wear suitable gloves.	90 %	All relevant Process Categories
	Dermal	Wear suitable protective clothing.		All relevant Process Categories

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Industrial use, Process regulators (synthesis regulators) - Catalysts:

ERC3, ERC4, ERC5, ERC6d:

Compartment	PEC	RCR	Method	Remarks
Fresh water	0,145 µg/l	0,31	EUSES	
freshwater sediment	0,0158 mg/kg wwt	0,31	EUSES	
Saltwater	0,0145 µg/l	0,32	EUSES	
Saltwater Sediment	1,58 µg/kg wwt	0,32	EUSES	

Soil	0,0313 mg/kg wwt	0,77	EUSES	
Sewage treatment plant	1,46 µg/l	< 0,01	EUSES	

ERC6b:

Compartment	PEC	RCR	Method	Remarks
Fresh water	0,0624 ng/L	< 0,01	EUSES	
freshwater sediment	0,0068 µg/kg wwt	< 0,01	EUSES	
Saltwater	0,0099 ng/L	< 0,01	EUSES	
Saltwater Sediment	0,0011 µg/kg wwt	< 0,01	EUSES	
Soil	0,0134 µg/kg wwt	< 0,01	EUSES	
Sewage treatment plant	0,628 ng/L	< 0,01	EUSES	

Waste:

Compartment	PEC	RCR	Method	Remarks
Fresh water	0,0405 µg/l	0,09	EUSES	Hazardous waste incineration.none
freshwater sediment	4,42 µg/kg wwt	0,09	EUSES	
Saltwater	4,05 ng/L	0,09	EUSES	
Saltwater Sediment	0,442 µg/kg wwt	0,09	EUSES	
Soil	8,85 µg/kg wwt	0,22	EUSES	
Sewage treatment plant	0,408 µg/l	< 0,01	EUSES	

Health:

Industrial use, Process regulators (synthesis regulators) - Catalysts:

PROC1:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	Without local exhaust ventilation, Including modification factor for concentration in product, Respiratory protection	2,63 µg/m³	0,26	ECETOC TRA worker v3	none
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Including modification factor for concentration in product	0,0034 mg/kg bw/day	0,017	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,28	ECETOC TRA worker v3	none

PROC2:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	Indoor, With local exhaust ventilation, Including modification factor for concentration in product, Respiratory	2,63 µg/m³	0,263	ECETOC TRA worker v3	none

	protection				
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Including modification factor for concentration in product	0,0137 mg/kg bw/day	0,069	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,332	ECETOC TRA worker v3	none

PROC3:

	Specific condition	**Exposure level**	**RCR**	**Method**	**Remarks**
Worker - inhalative, long-term - systemic	Indoor, With local exhaust ventilation, Including modification factor for concentration in product, Respiratory protection	2,63 µg/m³	0,26	ECETOC TRA worker v3	none
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Including modification factor for concentration in product	0,0034 mg/kg bw/day	0,017	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,28	ECETOC TRA worker v3	none

PROC4:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	Indoor, With local exhaust ventilation, Including modification factor for concentration in product, Respiratory protection	2,63 µg/m³	0,263	ECETOC TRA worker v3	none
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Including modification factor for concentration in product	0,686 mg/kg bw/day	0,343	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,606	ECETOC TRA worker v3	none

PROC5:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	Indoor, With local exhaust ventilation, Including modification factor for concentration in product, Respiratory protection	2,63 µg/m³	0,263	ECETOC TRA worker v3	none
Worker - dermal, long-term - systemic	including modificatio	0,0069 mg/kg	0,035	ECETOC TRA	none

	n factor for use of appropriate dermal protection, Including modification factor for concentration in product	bw/day		worker v3	
Worker - combined, long-term - systemic			0,298	ECETOC TRA worker v3	none

PROC8a:

	Specific condition	**Exposure level**	**RCR**	**Method**	**Remarks**
Worker - inhalative, long-term - systemic	Indoor, With local exhaust ventilation, Including modification factor for concentration in product, Respiratory protection	5,26 µg/m³	0,526	ECETOC TRA worker v3	none
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Including modification factor for concentration in product	0,0137 mg/kg bw/day	0,069	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,595	ECETOC TRA worker v3	none

PROC10:

	Specific	**Exposur**	**RCR**	**Method**	**Remarks**

	condition	e level			
Worker - inhalative, long-term - systemic	Indoor, With local exhaust ventilation, Including modification factor for concentration in product, Respiratory protection	2,63 µg/m³	0,263	ECETOC TRA worker v3	none
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Including modification factor for concentration in product	0,1371 mg/kg bw/day	0,686	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,949	ECETOC TRA worker v3	none

PROC13:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	Indoor, With local exhaust ventilation, Including modification factor for concentration in product, Respiratory protection	2,63 µg/m³	0,263	ECETOC TRA worker v3	none
Worker - dermal, long-term - systemic	including modification factor for use of	0,0686 mg/kg bw/day	0,343	ECETOC TRA worker v3	none

	appropriate dermal protection, Including modification factor for concentration in product				
Worker - combined, long-term - systemic			0,606	ECETOC TRA worker v3	none

PROC14:

	Specific condition	**Exposure level**	**RCR**	**Method**	**Remarks**
Worker - inhalative, long-term - systemic	Indoor, With local exhaust ventilation, Including modification factor for concentration in product, Respiratory protection	2,63 µg/m³	0,263	ECETOC TRA worker v3	none
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Including modification factor for concentration in product	0,0343 mg/kg bw/day	0,172	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,435	ECETOC TRA worker v3	none

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Exposure Scenario 4.

Exposure scenario worker

1.Additive premixing

List of use descriptors	
Sector(s) of use	SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Product categories [PC]:	PC32: Polymer preparations and compounds

Name of contributing environmental scenario and corresponding ERC	Additive premixing: ERC6d: Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article)

List of names of contributing worker scenarios and corresponding PROCs	Additive premixing: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

2.1.Contributing exposure scenario controlling environmental exposure for: Additive premixing

Product characteristics

Physical state	liquid

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Annual amount per site	100 tonnes/year
Fraction of EU tonnage used in region:	1

Frequency and duration of use

Batch process:	not relevant
Continuous process:	100 Emission days

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
Intermittent release	100	0 %	0 %	-	

Other relevant operational conditions	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release

See chapter 8 of the safety data sheet (Environmental exposure controls).

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Air	not relevant
Soil	not relevant
Water	Ensure all waste water is collected and treated via a WWTP.
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Hazardous waste incineration.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Additive premixing

Process Categories:	PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises

Product characteristics

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

Physical form of the product:	liquid
Vapour pressure:	not relevant
Process temperature:	15 - 25 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Exposure time	480 min	Exposure time per day	PROC4

Human factors not influenced by risk management

Exposed skin areas:

Palm of both hands	480 cm² PROC4

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use	1.000 m3		10	

Other relevant operational conditions:	Respiration: 30 m³/day Body weight:: 70 kg Process temperature: 15 - 25 °C

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source towards the worker

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Industrial:	Inhalation	Provide adequate ventilation.		All relevant Process Categories
	Inhalation	Indoor, with local exhaust ventilation	> 90 %	All relevant Process Categories

Organisational measures to prevent/limit releases, dispersion and exposure

Application	Route of Exposure	Protective Measures	Remarks
Industrial:	Dermal, Inhalation	Specific workers training in use of personal protective equipment	All relevant Process Categories

Conditions and measures related to personal protection, hygiene and health evaluation

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Industrial:	Inhalation, Dermal	See chapter 8 of the safety data sheet (Personal protection equipment)		All relevant Process Categories
	Dermal	Wear suitable gloves.	90 %	All relevant Process Categories

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Additive premixing:

ERC6d:

Compartment	PEC	RCR	Method	Remarks
Fresh water	0,156 µg/l	0,34	EUSES	
freshwater sediment	0,017 mg/kg wwt	0,34	EUSES	
Saltwater	0,0156 µg/l	0,34	EUSES	
Saltwater Sediment	1,7 µg/kg wwt	0,34	EUSES	
Soil	0,0336 mg/kg wwt	0,83	EUSES	

Sewage treatment plant	1,57 µg/l	< 0,01	EUSES	

Waste:

Compartment	PEC	RCR	Method	Remarks
Fresh water	0,0405 µg/l	0,09	EUSES	Hazardous waste incineration.none
freshwater sediment	4,42 µg/kg wwt	0,09	EUSES	
Saltwater	4,05 ng/L	0,09	EUSES	
Saltwater Sediment	0,442 µg/kg wwt	0,09	EUSES	
Soil	8,85 µg/kg wwt	0,22	EUSES	
Sewage treatment plant	0,408 µg/l	< 0,01	EUSES	

Health:

Additive premixing:

PROC4:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	Including modification factor for concentration in product, With local exhaust ventilation	0,0026 mg/m³	0,26	Used ART model., Activities with open liquid surfaces or open reservoirs - activity with agitated surfaces	none
Worker - dermal, long-term - systemic	Including modification factor for concentration in product, including modification factor for use of appropriate dermal protection	0,0686 mg/kg bw/day	0,343	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,603		none

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Exposure Scenario 5.

Exposure scenario worker

1.Manufacture of, Enamel

List of use descriptors

Sector(s) of use	SU9: Manufacture of fine chemicals
Product categories [PC]:	

Name of contributing environmental scenario and corresponding ERC	Manufacture of, Enamel: ERC2: Formulation into mixture (mixtures)

List of names of contributing worker scenarios and corresponding PROCs	Manufacture of: PROC1: Use in closed process, no likelihood of exposure PROC3: Use in closed batch process (synthesis or formulation) PROC5: Mixing or blending in batch processes PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

2.1.Contributing exposure scenario controlling environmental exposure for: Manufacture of, Enamel

Product characteristics

Physical state	liquid

Viscosity:	
Kinematic viscosity:	This information is not available.
Dynamic viscosity:	This information is not available.

Amounts used

Annual amount per site	100 tonnes/year

Frequency and duration of use

Batch process:	not relevant
Continuous process:	100 Emission days

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
Intermittent release	10	0 %	0 %	-	

Other relevant operational conditions	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release

See chapter 8 of the safety data sheet (Environmental exposure controls).

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Air	not relevant
Soil	not relevant
Water	Ensure all waste water is collected and treated via a WWTP.
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Hazardous waste incineration.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Manufacture of, Enamel

Process Categories:	PROC1: Use in closed process, no likelihood of exposure PROC3: Use in closed batch process (synthesis or formulation) PROC5: Mixing or blending in batch processes PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC9: Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Product characteristics

Concentration of the substance in a mixture:	1 % dermal exposure 0.1 - 0.5 % inhalation exposure

Physical form of the product:	liquid
Vapour pressure:	not relevant
Process temperature:	15 - 25 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Exposure time	480 min	1 Exposure time per day	PROC8a

Human factors not influenced by risk management

Exposed skin areas:

Palm of one hand	240 cm² PROC1 PROC3
Palm of both hands	480 cm² PROC5
Both hands	960 cm² PROC8a PROC9

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use	300 m3		10	All relevant Process Categories

Other relevant operational conditions:	Respiration: 30 m³/day Body weight:: 70 kg Process temperature: 15 - 25 °C . Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source towards the worker

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Industrial:	Inhalation	Provide adequate ventilation.		All relevant Process Categories
	Inhalation	Indoor, with local exhaust ventilation	> 90 %	PROC8a

Organisational measures to prevent/limit releases, dispersion and exposure

Application	Route of Exposure	Protective Measures	Remarks
Industrial:	Dermal, Inhalation	Specific workers training in use of personal protective equipment	All relevant Process Categories

Conditions and measures related to personal protection, hygiene and health evaluation

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Industrial:	Inhalation, Dermal	See chapter 8 of the safety data sheet (Personal protection equipment)		All relevant Process Categories
	Dermal	Wear suitable gloves.	90 %	All relevant Process Categories

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Manufacture of, Enamel:

ERC2:

Compartment	PEC	RCR	Method	Remarks
Fresh water	0,156 µg/l	0,34	EUSES	
freshwater sediment	0,017 mg/kg wwt	0,34	EUSES	
Saltwater	0,0156 µg/l	0,34	EUSES	
Saltwater Sediment	1,7 µg/kg wwt	0,34	EUSES	
Soil	0,0336 mg/kg wwt	0,83	EUSES	

Sewage treatment plant	1,57 µg/l	< 0,01	EUSES	

Waste:

Compartment	PEC	RCR	Method	Remarks
Fresh water	0,0405 µg/l	0,09	EUSES	
freshwater sediment	4,42 µg/kg wwt	0,09	EUSES	
Saltwater	4,05 ng/L	0,09	EUSES	
Saltwater Sediment	0,442 µg/kg wwt	0,09	EUSES	
Soil	8,85 µg/kg wwt	0,22	EUSES	
Sewage treatment plant	0,408 µg/l	< 0,01	EUSES	

Health:

Manufacture of, Enamel:

PROC8a:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	Including modification factor for concentration in product, With local exhaust ventilation	0,29 µg/m³	0,029	Used ART model., Transfer of liquid products - falling liquids	All relevant Process Categories covered with this PROC
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Including modification factor for concentration in product, With local exhaust ventilation	0,0137 mg/kg bw/day	0,069	ECETOC TRA worker v3	All relevant Process Categories covered with this PROC
Worker - combined, long-term - systemic			0,098		All relevant Process Categories covered with this PROC
Worker - inhalative, long-term - systemic	Including modification factor for concentration in product, With local exhaust ventilation, Manufacturing equipment cleaning, Manufacturing	0,033 µg/m³	0,0033	Used ART model., Manufacturing equipment maintenance	All relevant Process Categories covered with this PROC

	equipment maintenance				
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Including modification factor for concentration in product, With local exhaust ventilation	0,0137 mg/kg bw/day	0,069	ECETOC TRA worker v3	All relevant Process Categories covered with this PROC
Worker - combined, long-term - systemic			0,072		All relevant Process Categories covered with this PROC

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Exposure Scenario 6.

Exposure scenario worker

1.Enameling and coating of electrical wire

List of use descriptors	
Sector(s) of use	SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Product categories [PC]:	

Name of contributing environmental scenario and corresponding ERC	Enameling and coating of electrical wire: ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) ERC5: Industrial use resulting in inclusion into or onto a matrix

List of names of contributing worker scenarios and corresponding PROCs	Enameling and coating of electrical wire: PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC5: Mixing or blending in batch processes PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring

2.1.Contributing exposure scenario controlling environmental exposure for: Enameling and coating of electrical wire

Product characteristics

Physical state	liquid

Viscosity:	
Kinematic viscosity:	Not applicable
Dynamic viscosity:	Not applicable

Amounts used

Annual amount per site	100 tonnes/year
Fraction of EU tonnage used in region:	1

Frequency and duration of use

Batch process:	not relevant
Continuous process:	not relevant

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
Continuous release	100	0 %	0 %	-	

Other relevant operational conditions	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release

See chapter 8 of the safety data sheet (Environmental exposure controls).

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Air	not relevant
Soil	not relevant
Water	Ensure all waste water is collected and treated via a WWTP.
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Hazardous waste incineration.		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Enameling and coating of electrical wire

Process Categories:	PROC1: Use in closed process, no likelihood of exposure PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Use in closed batch process (synthesis or formulation) PROC5: Mixing or blending in batch processes PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring

Product characteristics

Concentration of the substance in a mixture:	1 % dermal exposure 0.1 - 0.5 % inhalation exposure

Physical form of the product:	liquid
Vapour pressure:	not relevant
Process temperature:	> 100 °C
Remarks	not relevant

Amounts used

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Exposure time	480 min	1 Exposure time per day	PROC1, PROC2, PROC3, PROC5, PROC7, PROC8a, PROC10, PROC13

Human factors not influenced by risk management

Exposed skin areas:

Palm of one hand	240 cm² PROC1 PROC3 PROC13
Palm of both hands	480 cm² PROC2 PROC5 PROC10
Both hands	960 cm² PROC8a
Both hands and main part of the arms	1500 cm² PROC7

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use	300 m3		10	Industrial spraying, Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, Roller application or brushing, Treatment of articles by dipping and pouring

Other relevant operational conditions:	Respiration: 30 m³/day Body weight:: 70 kg Process temperature: 15 - 25 °C . Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities Roller application or brushing Treatment of articles by dipping and pouring

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source towards the worker

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Industrial:	Inhalation	Provide adequate ventilation.		All relevant Process Categories
	Inhalation	with local exhaust ventilation	90 %	PROC7, PROC10, PROC13, PROC8a,
Industrial, Manufacturing equipment cleaning:	Inhalation	without local exhaust ventilation		PROC8a

Organisational measures to prevent/limit releases, dispersion and exposure

Application	Route of Exposure	Protective Measures	Remarks
Industrial:	Dermal, Inhalation	Specific workers training in use of personal protective equipment	All relevant Process Categories

Conditions and measures related to personal protection, hygiene and health evaluation

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Industrial:	Inhalation, Dermal	See chapter 8 of the safety data sheet (Personal protection equipment)		All relevant Process Categories
	Dermal	Wear suitable gloves.	90 %	All relevant Process Categories

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Enameling and coating of electrical wire:

ERC4, ERC5:

Compartment	PEC	RCR	Method	Remarks
Fresh water	0,156 µg/l	0,34	EUSES	
freshwater sediment	0,017 mg/kg wwt	0,34	EUSES	

Saltwater	0,0156 µg/l	0,34	EUSES	
Saltwater Sediment	0,17 µg/kg wwt	0,34	EUSES	
Soil	0,0336 mg/kg wwt	0,83	EUSES	
Sewage treatment plant	1,57 µg/l	< 0,01	EUSES	

Health:

Enameling and coating of electrical wire:

PROC7:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	With local exhaust ventilation, Including modification factor for concentration in product	0,9900 µg/m³	0,099	Used ART model., spray application	none
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Including modification factor for concentration in product, With local exhaust ventilation	1,070 µg/kg bw/day	0,00535	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,10		none

PROC8a:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	With local exhaust ventilation, Including modification factor for concentration in product	0,29 µg/m³	0,029	Used ART model., Transfer of liquid products - falling liquids	none
Worker - dermal, long-term - systemic	including modification factor for	0,069 µg/kg bw/day	0,00035	ECETOC TRA worker v3	none

	use of appropriate dermal protection, Including modification factor for concentration in product, With local exhaust ventilation				
Worker - combined, long-term - systemic			0,029		none
Worker - inhalative, long-term - systemic	With local exhaust ventilation, Including modification factor for concentration in product	0,033 µg/m³	0,0033	Used ART model., Manufacturing equipment maintenance	none
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Including modification factor for concentration in product, With local exhaust ventilation	0,069 µg/kg bw/day	0,00035	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,0036		none

PROC10:

	Specific condition	**Exposure level**	**RCR**	**Method**	**Remarks**
Worker - inhalative, long-term - systemic	With local exhaust ventilation,	0,3300 µg/m³	0,069	Used ART model., Spread,	none

	Including modification factor for concentration in product			spreading, liquid products	
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Including modification factor for concentration in product, With local exhaust ventilation	0,6900 mg/kg bw/day	0,0017	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,071		none

PROC13:

	Specific condition	**Exposure level**	**RCR**	**Method**	**Remarks**
Worker - inhalative, long-term - systemic	With local exhaust ventilation, Including modification factor for concentration in product	0,0033 µg/m³	0,00033	Used ART model., Activities with open liquid surfaces or open reservoirs - activity with undisturbed surfaces (no aerosol formation)	none
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Including	0,34 µg/kg bw/day	0,0017	ECETOC TRA worker v3	none

	modification factor for concentration in product, With local exhaust ventilation				
Worker - combined, long-term - systemic			0,002		none

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Exposure Scenario 7.

Exposure scenario worker

1.Professional use, Process regulators (synthesis regulators) - Catalysts

List of use descriptors	
Sector(s) of use	SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen) SU19: Building and construction work
Product categories [PC]:	PC1: Adhesives, sealants PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modelling clay PC0: Other

Name of contributing environmental scenario and corresponding ERC	Professional use, Process regulators (synthesis regulators) - Catalysts: ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: Wide dispersive outdoor use of processing aids in open systems

	ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix

List of names of contributing worker scenarios and corresponding PROCs	Professional use: PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC10: Roller application or brushing PROC11: Non industrial spraying

2.1.Contributing exposure scenario controlling environmental exposure for: Professional use, Process regulators (synthesis regulators) - Catalysts

Product characteristics

Physical state	liquid

Viscosity:	
Kinematic viscosity:	Not applicable
Dynamic viscosity:	Not applicable

Amounts used

Annual amount per site	850 tonnes/year Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
Annual amount per site	0,365 Widespread use leading to inclusion into/onto article (indoor) Widespread use leading to inclusion into/onto article (outdoor)
Fraction of EU tonnage used in region:	0,1

Frequency and duration of use

Batch process:	not relevant
Continuous process:	365 Emission days

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	Emission days	Emission factors			Remarks
		Air	Soil	Water	
Continuous release	365	0 %	0 %	0,2 %	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
Continuous release	365	15 %	-	1 %	Widespread use leading to inclusion into/onto article (indoor)
Continuous release	365	15 %	0,5 %	1 %	Widespread use leading to inclusion into/onto article (outdoor)
Continuous release	365	0,05 %	0,16 %	3,2 %	Waste treatment

Other relevant operational conditions	not relevant

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release

See chapter 8 of the safety data sheet (Environmental exposure controls).

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Air	not relevant
Soil	not relevant
Water	Ensure all waste water is collected and treated via a

	WWTP.
Sediment:	not relevant
Remarks:	not relevant

Organisational measures to prevent/limit release from site:

none

Conditions and measures related to sewage treatment plant

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Landfill		

Conditions and measures related to external recovery of waste

This information is not available.

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling worker exposure for: Professional use, Process regulators (synthesis regulators) - Catalysts

Process Categories:	PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes PROC8a: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities PROC10: Roller application or brushing PROC11: Non industrial spraying

Product characteristics

Concentration of the substance in a mixture:	1 % dermal exposure 0.1 - 0.5 % inhalation exposure

Physical form of the product:	liquid
Vapour pressure:	not relevant
Process temperature:	25 °C
Remarks	not relevant

Amounts used

Amounts used	850 tonnes/year
Maximum daily site tonnage (kg/day):	1 kg

Frequency and duration of use

	Use duration:	Frequency of use:	Remarks
Exposure time	240 - 480 min	1 Exposure time per day	All relevant Process Categories

Human factors not influenced by risk management

Exposed skin areas:

Palm of one hand	240 cm² PROC1 PROC3 PROC13
Palm of both hands	480 cm² PROC2 PROC4 PROC5 PROC10 PROC14
Both hands	960 cm² PROC8b PROC9

Other given operational conditions affecting workers exposure

Area of use	Room size:	Temperature:	Ventilation rate	Remarks
Indoor use	300 m3		10	Use in batch and other process (synthesis) where opportunity for exposure arises, Mixing or blending in batch processes, Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities, Roller application or brushing, Non industrial spraying

Other relevant operational conditions:	Respiration: 30 m³/day Body weight:: 70 kg

Risk management measures (RMM)

Technical conditions and measures at process level (source) to prevent release

See chapter 7 of the safety data sheet

Technical conditions and measures to control dispersion from source towards the worker

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Professional:	Inhalation	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level., without local exhaust ventilation		All relevant Process Categories

Organisational measures to prevent/limit releases, dispersion and exposure

This information is not available.

Conditions and measures related to personal protection, hygiene and health evaluation

Application	Route of Exposure	Protective Measures	Effectiveness	Remarks
Industrial:	Inhalation, Dermal	See chapter 8 of the safety data sheet (Personal protection equipment)		All relevant Process Categories
Professional:	Dermal	Wear suitable gloves.	90 %	All relevant Process Categories
	Dermal	Wear suitable protective clothing.		All relevant Process Categories

Additional good practice advice beyond the REACH CSA

This information is not available.

3. Exposure estimation

Environment:

Professional use, Process regulators (synthesis regulators) - Catalysts:

ERC8c:

Compartment	PEC	RCR	Method	Remarks
Fresh water	0,285 ng/L	< 0,01	EUSES	
freshwater sediment	0,031 µg/kg wwt	< 0,01	EUSES	
Saltwater	0,0432 ng/L	< 0,01	EUSES	
Saltwater Sediment	0,0047 µg/kg wwt	< 0,01	EUSES	
Soil	0,075 µg/kg wwt	< 0,01	EUSES	
Sewage treatment plant	2,51 ng/L	< 0,01	EUSES	

ERC8f:

Compartment	PEC	RCR	Method	Remarks
Fresh water	0,288 ng/L	< 0,01	EUSES	
freshwater sediment	0,0313 µg/kg wwt	< 0,01	EUSES	
Saltwater	0,0435 ng/L	< 0,01	EUSES	
Saltwater Sediment	0,0047 µg/kg wwt	< 0,01	EUSES	
Soil	0,0752 µg/kg wwt	< 0,01	EUSES	
Sewage treatment plant	2,51 ng/L	< 0,01	EUSES	

ERC8a, ERC8d:

Compartment	PEC	RCR	Method	Remarks
Fresh water	0,12 µg/l	0,26	EUSES	

freshwater sediment	0,0131 mg/kg wwt	0,26	EUSES	
Saltwater	0,012 µg/l	0,26	EUSES	
Saltwater Sediment	1,31 µg/kg wwt	0,26	EUSES	
Soil	0,0248 mg/kg wwt	0,61	EUSES	
Sewage treatment plant	1,16 µg/l	< 0,01	EUSES	

Waste:

Compartment	PEC	RCR	Method	Remarks
Fresh water	0,041 µg/l	0,09	EUSES	
freshwater sediment	4,46 µg/kg wwt	0,09	EUSES	
Saltwater	4,09 ng/L	0,09	EUSES	
Saltwater Sediment	0,445 µg/kg wwt	0,09	EUSES	
Soil	0,0092 µg/kg wwt	< 0,01	EUSES	
Sewage treatment plant	0,375 µg/l	< 0,01	EUSES	

Health:

Professional use, Process regulators (synthesis regulators) - Catalysts:

PROC4:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	Including modification factor for concentration in product	0,032 µg/m³	0,0032	Used ART model., Activities with open liquid surfaces or open reservoirs - activity with undisturbed surfaces (no aerosol formation)	none
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Including modification factor for concentration in product	3,450 µg/kg bw/day	0,017	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,2		none

PROC5:

	Specific condition	Exposure level	RCR	Method	Remarks
Worker - inhalative, long-term - systemic	Including modification factor for concentration in product	0,032 µg/m³	0,0032	Used ART model., Activities with open liquid surfaces or open reservoirs - activity with undisturbed surfaces (no	none

				aerosol formation)	
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Including modification factor for concentration in product	6,88 µg/kg bw/day	0,0344	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,038		none

PROC8a:

	Specific condition	**Exposure level**	**RCR**	**Method**	**Remarks**
Worker - inhalative, long-term - systemic	Including modification factor for concentration in product	0,3200 µg/m³	0,03	Used ART model., Transfer of liquid products - falling liquids	none
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Including modification factor for concentration in product	6,880 µg/kg bw/day	0,0344	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,064		none

PROC10:

	Specific condition	**Exposure level**	**RCR**	**Method**	**Remarks**
Worker - inhalative,	Including	0,0033	0,33	Used ART	none

long-term - systemic	modification factor for concentration in product	µg/m³		model., Spread, spreading, liquid products	
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Including modification factor for concentration in product	0,0137 mg/kg bw/day	0,0685	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,4		none

PROC11:

	Specific condition	**Exposure level**	**RCR**	**Method**	**Remarks**
Worker - inhalative, long-term - systemic	Including modification factor for concentration in product	0,0033 mg/m³	0,33	Used ART model., spray application	none
Worker - dermal, long-term - systemic	including modification factor for use of appropriate dermal protection, Including modification factor for concentration in product	0,0536 mg/kg bw/day	0,268	ECETOC TRA worker v3	none
Worker - combined, long-term - systemic			0,6		none

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Exposure Scenario 8.

Exposure scenario consumer

1.Consumer use, Process regulators (synthesis regulators) - Catalysts:

List of use descriptors	
Sector(s) of use	SU21: Consumer uses: Private households (= general public = consumers)
Product categories [PC]:	PC1: Adhesives, sealants

Name of contributing environmental scenario and corresponding ERC	Consumer use, Process regulators (synthesis regulators) - Catalysts: ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix ERC10a: Wide dispersive outdoor use of long-life articles and materials with low release ERC11a: Widespread use of articles with low release (indoor)

List of names of contributing worker scenarios and corresponding PROCs	Consumer use: :

2.1.Contributing exposure scenario controlling environmental exposure for: Consumer use, Process regulators (synthesis regulators) - Catalysts

Product characteristics

Physical state	liquid

Viscosity	
Kinematic viscosity	This information is not available.
Dynamic viscosity	This information is not available.

Amounts used

Annual amount per site	850 tonnes/year
Fraction of EU tonnage used in region:	0,1

Frequency and duration of use

Batch process	not relevant
Continuous process	365 Emission days

Environment factors not influenced by risk management

Flow rate of receiving surface water (m^3/d):	not relevant
Local freshwater dilution factor	not relevant
Local marine water dilution factor	not relevant

Other given operational conditions affecting environmental exposure

type	**Emission days**	**Emission factors**			**Remarks**
		Air	**Soil**	**Water**	
Continuous release	365	0,05 %	-	0,05 %	Widespread use of articles with low release (indoor)

Continuous release	365	0 %	0 %	0,2 %	Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) Widespread use leading to inclusion into/onto article (indoor) Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) Widespread use leading to inclusion into/onto article (outdoor) Widespread use of articles with low release (outdoor)

Other relevant operational conditions	not relevant

Risk management measures (RMM)

Conditions and measures related to municipal sewage treatment plant

Conditions and measures related to external treatment of waste for disposal

Fraction of used amount transferred to external waste treatment:

Suitable waste treatment	Treatment effectiveness	Remarks
Landfill		

Conditions and measures related to external recovery of waste

none

Additional good practice advice beyond the REACH CSA

This information is not available.

2.2. Contributing exposure scenario controlling consumer exposure for: Consumer use, Process regulators (synthesis regulators) - Catalysts

Product Categories:	PC1: Adhesives, sealants

Product characteristics

Concentration of the substance in a mixture:	0.1 %

Physical form of the product:	liquid
Vapour pressure:	not relevant
Process temperature:	25 °C
Remarks	not relevant
Application:	not relevant

Amounts used

per task:	0,075 kg

Frequency and duration of use

	Use duration (h/d):	**Frequency of use:**	**Remarks**
Exposure time	45 min	3Exposure time per year	

Human factors not influenced by risk management

Exposed skin areas:

ConsExpo default	2 cm²

Other given operational conditions affecting consumers exposure

Area of use	**Room size:**	**Temperature:**	**Ventilation rate**	**Remarks**
Indoor use	10 m3		2	Covers use at ambient temperatures.

Other relevant operational conditions	Release area: 250 cm² Release duration: 1800 seconds Body weight:: 60 kg Application duration: 30 min

Risk management measures (RMM)

Conditions and measures related to information and behavioural advice to consumers

Consumer	without local exhaust ventilation

Conditions and measures related to personal protection, hygiene and health evaluation

See chapter 8 of the safety data sheet (Personal protection equipment)

Additional good practice advice beyond the REACH CSA

not relevant

3. Exposure estimation and reference to its source

Environment:

Consumer use, Process regulators (synthesis regulators) - Catalysts:

ERC8a, ERC8c, ERC8d, ERC8f, ERC10a:

Compartment	PEC	RCR	Method	Remarks
Fresh water	0,12 µg/l	0,26	EUSES	none
freshwater sediment	0,0131 mg/kg wwt	0,26	EUSES	none
Saltwater	0,012 µg/l	0,26	EUSES	none
Saltwater Sediment	1,31 µg/kg wwt	0,26	EUSES	none
Soil	0,0248 mg/kg wwt	0,61	EUSES	none
Sewage treatment plant	1,16 µg/l	< 0,01	EUSES	none

ERC11a:

Compartment	PEC	RCR	Method	Remarks
Fresh water	0,0294 µg/l	0,06	EUSES	none
freshwater sediment	3,2 µg/kg wwt	0,06	EUSES	none
Saltwater	4,6 ng/L	0,10	EUSES	none
Saltwater Sediment	0,501 µg/kg wwt	0,10	EUSES	none
Soil	6,21 µg/kg wwt	0,15	EUSES	none
Sewage treatment plant	0,283 µg/l	< 0,01	EUSES	none

Waste:

Compartment	PEC	RCR	Method	Remarks
Fresh water	0,041 µg/l	0,09	EUSES	none

freshwater sediment	4,46 µg/kg wwt	0,09	EUSES	none
Saltwater	4,09 ng/L	0,09	EUSES	none
Saltwater Sediment	0,445 µg/kg wwt	0,09	EUSES	none
Soil	0,0093 µg/kg wwt	< 0,01	EUSES	none
Sewage treatment plant	0,375 µg/l	< 0,01	EUSES	none

Health:

Consumer use, Process regulators (synthesis regulators) - Catalysts:

PC1:

	Specific condition	**Exposure level**	**RCR**	**Method**	**Remarks**
Consumer - dermal, short-term - local and systemic	Joint sealants	0,025 mg/kg bw/day	0,05	ConsExpo v4.1	none
Consumer - inhalative, short-term - systemic	Joint sealants	< 0,0003 µg/m³	< 0,000014	ConsExpo 4.1 (Consumer inhalation exposure)	none
Consumer - combined, short-term - systemic			0,05	ConsExpo v4.1	none

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html). If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.