

# SAFETY DATA SHEET

Conforms to Regulation (EC) No. 1907/2006 (REACH), Annex II



Product name: Zinkstaubfarbe (ethyl silicate)  
Date of printing: 14.11.2025

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

### 1.1 Product identifier

Product name: Zinkstaubfarbe (ethyl silicate)  
Unique Formula Identifier (UFI-Code): M880-S02Q-200N-AX43  
Product type: zinc silicate primer

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

Field of application: metal industry  
Identified uses: Industrial applications, Professional applications, Used by spraying.

### 1.3 Details of the supplier of the safety data sheet:

Producer/Supplier: Bisdorf GmbH  
Industriestraße 49-51  
D-52224 Stolberg  
  
Telephone: +49 (0) 2402 / 71048  
Telefax: +49 (0) 2402 / 75465  
E-Mail address: [bisdorf-lacke@arcor.de](mailto:bisdorf-lacke@arcor.de)

### 1.4 Emergency telephone number

Emergency information: Information Center against Poisons  
University Bonn  
Telephone number: +49 (0)228 / 19240  
  
Date of issue: 14.11.2025  
Date of previous issue: 20.10.2023

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Product definition: Mixture

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

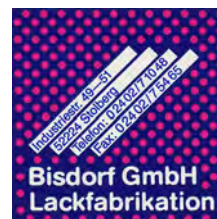
#### Classification acc. to GHS

Section	Hazard class	Hazard class and category	Hazard statement
2.6	flammable liquid	Flam. Liq. 3	H226
3.8D	specific target organ toxicity - single exposure (narcotic effects, drowsiness)	STOT SE 3	H336
4.1A	hazardous to the aquatic environment - acute hazard	Aquatic Acute 1	H400
4.1C	hazardous to the aquatic environment - chronic hazard	Aquatic Chronic 1	H410

See Section 11 for more detailed information on health effects and symptoms.

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## 2.2 Label elements

Hazard pictograms:



Signal word: Danger

Hazard statements:  
H226 - Flammable liquid and vapor.  
H336 - May cause drowsiness or dizziness.  
H400 - Very toxic to aquatic life.  
H410 - Very toxic to aquatic life with long lasting effects.  
EUH066 - Repeated exposure may cause skin dryness or cracking.

Precautionary statements:

Prevention:  
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.  
P260 - Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.  
P271 - Use only outdoors or in a well-ventilated area.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Response:  
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P314 - Get medical advice/attention if you feel unwell.  
P331 - Do NOT induce vomiting.  
Storage:  
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.  
P403 + P235 - Store in a well-ventilated place. Keep cool.  
P405 - Store locked up.  
Disposal:  
P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements: -

Indication at Labelling:

The pictogram GHS 02 (flame) and GHS 09 (environment) can according GHS/CLP Art. 33 (3) substituted to label of ADR. Exempted from the labeling (environment) in accordance with 5.2.1.8.1 (ADR) are single packagings and "combination packagings" where such single packagings or inner packagings of such combination packagings have: a quantity of 5 l or less for liquids.

## 2.3 Other hazards

Endocrine disrupting properties (human health):

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 (environment):

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.

PBT and vPvB assessment:

This substance/mixture contains components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB).

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## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Product/ingredient name	Identifiers	%	Classification 1272/2008/EC (CLP)	Type
solvent naphtha (petroleum), light arom.	REACH: 01-2119455851-35 CAS: *64742-95-6 EG: 265-199-0 M-Faktor: 1	5-10	Flam. Liq. 3, H226 Asp. Tox. 1, H304 STOT SE 3, H335 STOT SE 3, H336 Aquatic Chronic 2, H411	[1] [2]
hydrocarbons, C9-C10, n- alkanes, cycloalkanes, cyclics, < 2% aromatics	REACH: 01-2119471843-32 CAS: 64742-48-9 EG: 927-241-2	1-5	Flam. Liq. 3, H226 Asp. Tox. 1, H304 STOT SE 3, H336 Aquatic Chronic 3, H412	[1] [2]
1-methoxy-2-propanol (PM)	REACH: 01-2119457435-35 CAS: 107-98-2 EG: 203-539-1	1-5	Flam. Liq. 3, H226 STOT SE 3, H336	[1] [2]
tetraethyl silicate	REACH: 01-2119496195-28 CAS: 78-10-4 EG: 201-083-8	1-5	Flam. Liq. 3, H226 Acute Tox. 4, H312 Eye Irrit. 2, H319 STOT SE 3, H336	[1]
2,4,6-tris- ((dimethylamino) methyl)phenole	REACH: 01-2119560597-27 CAS: 90-72-2 EG: 202-013-9	1-5	Acute Tox. 4 oral; H302 Acute Tox. 4 dermal, H312 Skin Corr. 1B; H314 Skin Sens. 1B; H317 Eye Dam. 1; H318 Aquatic Chronic 3; H412	[1]
zinc-powder/zinc-dust (stabilized)	REACH: 01-2119467174-37 CAS: 7440-66-6 EG: 231-175-3 M-Faktor: 1	>75	Aquatic Acute 1, H400 Aquatic Chronic 1, H410	[1]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

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

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## SECTION 4: First aid measures

### 4.1. Description of first aid measures

**General information:** In all cases of doubt, or when symptoms persist, seek medical attention. If unconscious, place in recovery position and get medical attention immediately. Never give anything by mouth to an unconscious person. In any case show the physician the Safety Data Sheet.

**Inhalation:** Remove affected persons from dangerous area by observing suitable respiratory Protection measures. Remove the casualty into fresh air and keep at rest. After intensive inhalation consult a doctor in every case, even if no symptoms occur.

**Skin contact:** Take off immediately all contaminated clothing. Wash contaminated clothing before reusing. Do not allow the product to dry on the skin. Wash skin thoroughly with soap and water or use recognised skin cleanser. Consult a doctor in case of persisting skin irritation.

**Eye contact:** Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Begin with medical treatment.

**Ingestion:** If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting unless directed to do so by medical personnel. Seek medical attention.

### 4.2 Most important symptoms and effects, both acute and delayed

**General information:** When inhaled or swallowed depending on the time and amount, it can give rise to the following symptoms: headaches, giddiness, tiredness, nausea, vomiting, irregular heart beat, intoxication, unconsciousness, asphyxiation and fatality.

### 4.3 Indication of any immediate medical attention and special treatment needed

**Notes to physician:** Symptomatic treatment.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media



**Suitable:** Extinguishing measures to suit surroundings. In case of fire, use water spray jet, dry extinguishing powder, foam or carbon dioxide.

**Not suitable:** water jet.

### 5.2 Special hazards arising from the substance or mixture

**Hazardous combustion**

**Products:** Fire will produce dense black smoke containing hazardous combustion products. In a fire, the following may be released: carbon dioxide, carbon monoxide, not combusted hydrocarbons.

### 5.3 Advice for firefighters

**Special protective equipment for fire-fighters:** During fire-fighting wear self-contained breathing apparatus and protective clothing.

**Additional information:** The product is flammable. Use water spray to keep fire-exposed containers cool. Use extinguishing media suitable for surrounding materials. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

General information: To avoid fire, eliminate ignition sources. Provide adequate ventilation. Use personal protective equipment. Avoid contact with eyes, skin and clothing. Avoid breathing vapours, spray or mists.

### 6.2 Environmental precautions

General information: Do not discharge into the drains / surface waters / groundwater. Prevent spread over a wide area e.g. by containment or oil barriers.

### 6.3 Methods and material for containment and cleaning up

General information: Absorb with liquid-binding material (sand, diatomite, universal binders etc.) or use a spill kit. Containers in which spilt substance has been collected must be adequately labelled. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

### 6.4 Reference to other sections

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

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

Protective measures: Keep away from sources of ignition - No smoking. Vapours may form explosive mixtures with air.  
Take precautionary measures against electrostatic discharges. Provide good ventilation of working area. The working procedure should be planned as far as allowed by state-of-the-art technology so as to avoid release of hazardous substances or prevent skin contact. The level of risk involved in product handling must be reduced to a minimum by means of protective and preventive measures.

### 7.2 Conditions for safe storage, including any incompatibilities

General information: Store in a dry, cool and well-ventilated area. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. Store in accordance with local regulations.

German storage class: 10 - Combustible liquids neither in Storage Class 3

### 7.3 Specific end use(s)

See separate Product Data Sheet for recommendations or industrial sector specific solutions.

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Occupational exposure limit values (Workplace Exposure Limits)

Product/ingredient name	CAS-Nr.	Notation	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Source
solvent naphtha (petroleum), light arom.	64742-95-6		IOLEV	25	120			2017/164/EU
hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics	64742-48-9			25	125			AGCIH
1-methoxy-2-propanol (PM)	107-98-2		IOLEV	100	375	150	568	2017/164/EU
tetraethyl silicate	78-10-4		IOLEV	5	44			2017/164/EU
zinc-powder/zinc-dust (stabilized)	7440-66-6	i	IOLEV		10			EU OEL
zinc-powder/zinc-dust (stabilized)	7440-66-6	r	IOLEV		4			EU OEL

#### Notation

i Inhalable fraction

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period unless otherwise specified

r Respirable fraction

TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average

#### DNELs/DMELs

Product/ingredient name		
solvent naphtha (petroleum), light arom.		
Oral	DNEL (population)	11 mg/kg bw/day (Long-term - systemic effects)
Dermal	DNEL (worker)	25 mg/kg bw/day (Long-term - systemic effects)
Inhalation	DNEL (population)	11 mg/kg bw/day (Long-term - systemic effects)
	DNEL (worker)	150 mg/m³ (Long-term - systemic effects)
	DNEL (population)	32 mg/m³ (Long-term - systemic effects)

Product/ingredient name		
hydrocarbons, C9-C10, n-alkanes, cycloalkanes, cyclics, < 2% aromatics		
Oral	DNEL (population)	699 mg/kg bw/day (Long-term - systemic effects)
Dermal	DNEL (worker)	773 mg/kg bw/day (Long-term - systemic effects)
Inhalation	DNEL (population)	699 mg/kg bw/day (Long-term - systemic effects)
	DNEL (worker)	2035 mg/m³ (Long-term - systemic effects)
	DNEL (population)	608 mg/m³ (Long-term - systemic effects)



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Product/ingredient name		
1-methoxy-2-propanol (PM)		
Oral	DNEL (population)	3,3 mg/kg bw/day (Long-term - systemic effects)
Dermal	DNEL (worker)	183 mg/kg bw/day (Long-term - systemic effects)
Inhalation	DNEL (population)	78 mg/kg bw/day (Long-term - systemic effects)
	DNEL (worker)	553,5 mg/m <sup>3</sup> (Acute - local effects)
		369 mg/m <sup>3</sup> (Long-term - systemic effects)
	DNEL (population)	43,9 mg/m <sup>3</sup> (Long-term - systemic effects)

Product/ingredient name		
tetraethyl silikate		
Dermal	DNEL (worker)	56 mg/kg bw/day (Long-term - systemic effects)
Inhalation		56 mg/kg bw/day (Acute - systemic effects)
	DNEL (population)	3 mg/kg bw/day (Long-term - local effects)
		3 mg/kg bw/day (Acute - local effects)
	DNEL (worker)	85 mg/m <sup>3</sup> (Long-term - systemic effects)
		85 mg/m <sup>3</sup> (Acute - systemic effects)
		85 mg/m <sup>3</sup> (Long-term - local effects)
		85 mg/m <sup>3</sup> (Acute - local effects)
	DNEL (population)	14 mg/m <sup>3</sup> (Long-term - systemic effects)
		14 mg/m <sup>3</sup> (Long-term - local effects)
		14 mg/m <sup>3</sup> (Acute - systemic effects)

Product/ingredient name		
2,4,6-tris-((dimethylamino)methyl)phenole		
Dermal	DNEL (worker)	0,2 mg/kg bw/day (Long-term - systemic effects)
Inhalativ	DNEL (worker)	0,31 mg/m <sup>3</sup> (Long-term - systemic effects)

Product/ingredient name		
zinc-powder/zinc-dust (stabilized)		
Oral	DNEL (population)	0,83 mg/kg bw/day (Long-term - systemic effects)
Dermal	DNEL (worker)	83 mg/kg bw/day (Long-term - systemic effects)
Inhalation	DNEL (population)	83 mg/kg bw/day (Long-term - systemic effects)
	DNEL (worker)	5 mg/m <sup>3</sup> (Long-term - systemic effects)
	DNEL (population)	2,5 mg/m <sup>3</sup> (Long-term - systemic effects)

## PNECs

Product/ingredient name	
1-methoxy-2-propanol (PM)	
PNEC aqua	10 mg/l (fresh water) 1 mg/l (marine water)
PNEC	100 mg/l (STP (sewage treatment plant)) 4,59 mg/kg dw (soil)
PNEC sediment	52,3 mg/kg dw (fresh water) 5,2 mg/kg dw (marine water)

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Product/ingredient name	
tetraethyl silicate	
PNEC aqua	0,19 mg/l (fresh water) 0,019 mg/l (marine water)
PNEC	4000 mg/l (STP (sewage treatment plant)) 0,05 mg/kg dw (soil)
PNEC sediment	0,83 mg/kg dw (fresh water) 0,083 mg/kg dw (marine water)

Product/ingredient name	
2,4,6-tris-((dimethylamino)methyl)phenole	
PNEC aqua	0,084 mg/l (fresh water) 0,0084 mg/l (marine water)
PNEC	0,2 mg/l (STP (sewage treatment plant)) - mg/kg dw (soil)
PNEC sediment	- mg/kg dw (fresh water) - mg/kg dw (marine water)

Product/ingredient name	
zinc-powder/zinc-dust (stabilized)	
PNEC aqua	20,6 µg/l (fresh water) 6,1 µg/l (marine water)
PNEC	100 µg/l (STP (sewage treatment plant)) 35,6 mg/kg dw (soil)
PNEC sediment	117,8 mg/kg dw (fresh water) 56,5 mg/kg dw (marine water)

(CAS 64742-95-6) - Substance is a hydrocarbon with a complex, unknown or variable composition. Conventional methods of deriving. PNECs are not appropriate and it is not possible to identify a single representative PNEC for such substances.

## 8.2 Exposure controls / personal protection

### Engineering measures

Refer to protective measures listed in sections 7.

### Personal protective equipment:

#### Respiratory protection

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If working areas have insufficient ventilation: When the product is applied by means that will not generate an aerosol such as, brush or roller wear half or totally covering mask equipped with gas filter of type A, when grinding use particle filter of type P. Be sure to use approved/ certified respirator or equivalent.

#### Hand protection

If there is a potential for product skin contact, use of gloves tested to e.g. EN 374 will provide sufficient protection. Protective gloves should in any case be tested for workplace-specific suitability (e.g. mechanical resistance, product compatibility, antistatic properties). Comply with instructions and information provided by the glove manufacturer concerning use, care and replacement of the gloves. Replace protective gloves immediately upon damage or at the first signs of wear. As far as possible, plan work procedures so that wearing gloves will not be necessary.



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	Long term exposure	Short term exposure
Recommended gloves should be made of	Viton®	Nitril.
Material thickness	>0,7 mm	>0,4 mm
Permeation time	>480 min	>480 min

## Eye protection

Safety goggles with lateral shielding (DIN EN 166)

## Body protection

Usual working clothes for the chemical industry, suitable for the job.

## Environmental exposure controls:

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

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

Physical state: Fluid

Colour: Grey

Odor: Characteristic

Odor threshold: Not relevant for the hazard classification of the product.

#### Security-relevant basic data

Parameter	
pH-value	Not applicable.
Melting point/Melting range	<-50 °C
Boiling point/Boiling range	160 - 180 °C
Flash point	>35 °C (IP 170 (ABEL))
Flammability (solid / gas)	Not applicable.
Ignition temperature	~460 ° C (lowest value of the individual components)
Decomposition temperature	Not determined.
Auto-ignition temperature	The product is not self-igniting.
Explosive properties	Product is not explosive. However, formation of explosive air/steam mixtures as possible.
Explosion limits Lower Upper Oxidizing properties	1 %(Vol) 6 %(Vol) Not determined
Vapour pressure	2 - 13 hPa (20 °C)
Density	~3,17 g/cm <sup>3</sup> (20 °C)
Vapor density	Not determined
Evaporation rate	No data available.

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Parameter	
Solubility in Miscibility with water	Organic solvents (see point 3) 0.175 g/l
Partition coefficient: (n-octanol/water)	Testing not relevant or not possible due to nature of the product.
Viscosity (expiry time after DIN 53211) Dynamic: Kinematic:	Slightly thixotropic
Solvent separation test	< 3% (20°C)

## 9.2. Other information

No additional information.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

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

### 10.2 Chemical stability

General information: The product is stable.

### 10.3 Possibility of hazardous reactions

General information: Rubber and other synthetic material can be affected.

### 10.4 Conditions to avoid

General information: The product is flammable. Keep away from excessive heat, sparks or open fire.

### 10.5 Incompatible materials

General information: oxidising agents, acids

### 10.6 Hazardous decomposition products

General information: Thermal disintegration depends to a great extent on the external conditions. A complex mixture of solids, liquids and gases forms in the air, including among other substances carbon dioxide, carbon monoxide and other organic compounds, when this material is burnt or is thermally or oxidatively degraded.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

Product/ingredient name	Result	Species	Dose	Exposure
solvent naphtha (petroleum), light arom.	LC50 Inhalation Vapour	Rat	>6153 mg/m <sup>3</sup>	4 hours
	LD50 Dermal	Rabbit	>3160 mg/kg	-
	LD50 Oral	Rat	8400 mg/kg	-
hydrocarbons, C9-C10, n-alkanes, cycloalkanes, cyclics, < 2% aromatics	LC50 Inhalation Gas	Rat	> 5600 mg/m <sup>3</sup>	4 hours
	LC50 Inhalation Vapour	Rat	> 23 mg/l	4 hours
	LD50 Dermal	Rabbit	> 2000 mg/kg	-
	LD50 Oral	Rat	> 5000 mg/kg	-
	LD50 Inhalation Vapour	Rat	10000 ppm	5 hours
1-methoxy-2-propanol (PM)	LD50 Dermal	Rabbit	13 g/kg	-
	LD50 Oral	Rat	6600 mg/kg	-
	LC50 Inhalation Vapour	Rat	11 mg/l	4 hours
tetraethyl silicate	LD50 Dermal	Rabbit	5880 mg/kg	-
	LD50 Oral	Rat	6270 mg/kg	-
	LD50 Dermal	Rabbit	1242 mg/kg	-
2,4,6-tris-((dimethylamino)methyl)phenol	LD50 Oral	Rat	1670 mg/kg	-
	LD50 Oral	Rat	1670 mg/kg	-

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Product/ingredient name	Result	Species	Dose	Exposure
zinc-powder/zinc-dust (stabilized)	LC50 Inhalation Vapour	(not mammalian species)	> 23 g/m <sup>3</sup>	-
	LD50 Dermal	Rat	> 2000 mg/kg	-
	LD50 Oral	Rat	> 2000 mg/kg	-

## Acute toxicity estimates

Route	ATE-Value
Inhalation (Gas)	22500 ppm
Inhalation (Vapour)	27,5 mg/l
Inhalation (dust and mist)	7,5 mg/l

## Corrosion/Irritation

Product/ingredient name	Result	Species	Score	Exposure
solvent naphtha (petroleum), light arom.	Eyes - Mild irritant	Rabbit	-	24 hours 100 milligrams
1-methoxy-2-propanol (PM)	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams
zinc-powder/zinc-dust (stabilized)	Skin - Mild irritant	Human	-	72 hours 300 micrograms Intermittent

## Sensitiser

Remarks

Skin: No evidence of sensitizing effects.

Respiratory: May cause respiratory irritation.

## Mutagenicity

Remarks: No evidence of mutagenic effects.

## Carcinogenicity

Remarks: No evidence of carcinogenic effects.

## Reproductive toxicity

Remarks: No evidence that the substance is toxic for reproduction.

## Teratogenicity

Remarks: No evidence that the substance may cause birth defects.

## Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
solvent naphtha (petroleum), light arom.	Category 3	Not applicable.	Narcotic effects
hydrocarbons, C9-C10, n-alkanes, cycloalkanes, cyclics, < 2% aromatics	Category 3	Not applicable.	Narcotic effects
1-methoxy-2-propanol (PM)	Category 3	Not applicable.	Narcotic effects
tetraethyl silicate	Category 3	Not applicable.	Respiratory tract Irritation

## Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
hydrocarbons, C9-C10, n-alkanes, cycloalkanes, cyclics, < 2% aromatics	Category 1	Not determined	Not determined

## Aspiration hazard

Product/ingredient name	Result
solvent naphtha (petroleum), light arom.	ASPIRATION HAZARD - Category 1
hydrocarbons, C9-C10, n-alkanes, cycloalkanes, cyclics, < 2% aromatics	ASPIRATION HAZARD - Category 1

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## Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

## Potential chronic health effects

Remarks: Not available.

## 11.2 Endocrine disrupting properties

See Section 2 for details.

## 11.3 Other hazards

The product is flammable. Keep away from excessive heat, sparks or open fire. In use, may form flammable/explosive vapour/air mixture. Electrostatic charges may be generated during pumping, release of which may cause a fire. The vapour/gas is heavier than air and will spread along the ground. Vapour may travel a considerable distance to source of ignition and flash back. Aspiration hazard if swallowed. Can enter lungs and cause damage.

## SECTION 12: Ecological information

### 12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
solvent naphtha (petroleum), light arom.	Acute EC50 3,2 mg/l Acute EC50 19 mg/l	Daphnie - Daphnia magna Algae - Pseudokirchneriella subcapitata	48 hours 72 hours
hydrocarbons, C9-C10, n-alkanes, cycloalkanes, cyclics, < 2% aromatics	Acute LC50 9.22 mg/l Acute EC50 >22-46 mg/l Acute EC50 > 1000 mg/l	Fish - Oncorhynchus mykiss Daphnie - Daphnia magna Algae - Pseudokirchneriella subcapitata	96 hours 48 hours 72 hours
1-methoxy-2-propanol (PM)	Acute LC50 10-30 mg/l Acute EC50 23300 mg/l Acute EC50 1000 mg/l	Fish - Oncorhynchus mykiss Daphnie - Daphnia magna Algae - Pseudokirchneriella subcapitata	96 hours 48 hours 168 hours
tetraethyl silicate	Acute LC50 350 mg/l Acute EC50 >75 mg/l Acute EC50 >100 mg/l	Fish - Leuciscus idus Daphnie - Daphnia magna Algae - Pseudokirchneriella subcapitata	96 hours 48 hours 72 hours
2,4,6-tris-((dimethylamino)methyl)phenole	Acute LC50 >245 mg/l Acute LC50 >222 mg/l Acute LC50 68 µg/l Acute LC50 68 645 - 1000 µg/l Acute LC50 0,238 mg/l	Fish - Danio rerio Fish - Oncorhynchus mykiss Daphnie - Daphnia magna Krustazeen (Penaeus chinensis) Fish (Pimephales promelas)	96 hours 96 hours 48 hours 72 hours 96 hours

### 12.2 Persistence and degradability

Product/ingredient name	Result
solvent naphtha (petroleum), light arom.	87,8 % - 28 days
hydrocarbons, C9-C10, n-alkanes, cycloalkanes, cyclics, < 2% aromatics	89% - 28 days
1-methoxy-2-propanol (PM)	96 % - 28 days
tetraethyl silicate	98% - 28 days

Remarks: The mixture is, according to the desired resistance, not readily biodegradable.

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## 12.3 Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
solvent naphtha (petroleum), light arom.	3.7 bis 4.5	10 - 2500	high
hydrocarbons, C9-C10, n-alkanes, cycloalkanes, cyclics, < 2% aromatics	5 bis 6.7	-	high
1-methoxy-2-propanol (PM)	<1	-	low
tetraethyl silicate	3,18	-	low
zinc-powder/zinc-dust (stabilized)	2.2	-	high

## 12.4 Mobility in soil

Soil/water partition coefficient (KOC): Not available.

## 12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
This mixture does not contain any substances that are assessed to be a PBT or a vPvB.							

## 12.6 Endocrine disrupting properties

See Section 2 for details.

## 12.7 Other adverse effects

No known significant effects or critical hazards.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods



The generation of waste should be avoided or minimised wherever possible. Residues of the product is listed as hazardous waste. Dispose of according to all state and local applicable regulations. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Spillage, remains, discarded clothes and similar should be discarded in a fireproof container.

European waste catalogue no. (EWC) is given below.



European waste catalogue (EWC): 08 01 11\*

### Packaging

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

## SECTION 14: Transport information




Transport may take place according to national regulation or ADR for transport by road, RID for transport by train, IMDG for transport by sea, IATA for transport by air.

14.1 UN no.	14.2 Proper shipping name	14.3 Transport hazard class(es)	14.4 PG*	14.5 Env*	Additional information
ADR/RID Class UN1263	PAINT	3  	III	Yes.	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. <b>Tunnel code</b> (D/E)

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	14.1 UN no.	14.2 Proper shipping name	14.3 Transport hazard class(es)	14.4 PG*	14.5 Env*	Additional information
<b>IMDG Class</b>	UN1263	PAINT	3  	III	Yes.	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. <b><u>Emergency schedules</u></b> F-E, S-E
<b>IATA Class</b>	UN1263	PAINT	3 	III	Yes.	The environmentally hazardous substance mark may appear if required by other transportation regulations.

Env.\* : Environmental hazards

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Not applicable.

## SECTION 15: Regulatory information

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

## EU Regulation

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), with supplements.

Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures (CLP), with supplements.

### Substances of very high concern

Substances mentioned on the so-called "candidate list of substances of very high concern (SVHC) for authorisation" published by the EChA are not intentionally added to this product. Therefore it is not expected, that these substances are present in amounts of  $\geq 0.1\%$  in this product.

### National legislation (Germany)

**VOC:** 412 g/l DIN ISO 11890 (Council Directive 1999/13/EC).

**Information about limitation of use:** Employment restrictions concerning young persons must be observed.

## 15.2 Chemical Safety Assessment

**10.2 Chemical Safety Assessment**  
This product contains substances for which Chemical Safety Assessments are still required.



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## SECTION 16: Other information

### Abbreviations and acronyms:

Abbr.	Descriptions of used abbreviations
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
BCF	bioconcentration factor
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
CMR	Carcinogenic, Mutagenic or toxic for Reproduction
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods Code
IOELV	indicative occupational exposure limit value
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
STEL	short-term exposure limit
TWA	time-weighted average
VOC	Volatile Organic Compounds
vPvB	very Persistent and very Bioaccumulative

### Full text of classifications [CLP/GHS]:

Acute Tox. 4, H312 ACUTE TOXICITY (dermal) - Category 4  
Acute Tox. 4, H332 ACUTE TOXICITY (inhalation) - Category 4  
Aquatic Acute 1, H400 AQUATIC HAZARD (ACUTE) - Category 1  
Aquatic Chronic 1, H410 LONG-TERM AQUATIC HAZARD - Category 1  
Aquatic Chronic 2, H411 LONG-TERM AQUATIC HAZARD - Category 2  
Asp. Tox. 1, H304 ASPIRATION HAZARD - Category 1  
Eye Dam. 1, H318 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1  
Eye Irrit. 2, H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2  
Flam. Liq. 3, H225 FLAMMABLE LIQUIDS - Category 2  
Flam. Liq. 3, H226 FLAMMABLE LIQUIDS - Category 3  
Skin Corr. 1A, H314 SKIN CORROSION/IRRITATION - Category 1A  
Skin Sens. 1, H317 SKIN SENSITIZATION - Category 1  
STOT RE 2, H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2  
STOT RE 2, H373 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (hearing organs) - Category 2  
STOT SE 3, H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3  
STOT SE 3, H336 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

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

Classification	Justification
Flam. Liq. 3, H226 STOT SE 3, H336 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	On basis of test data Calculation method Calculation method Calculation method

## Notice to reader

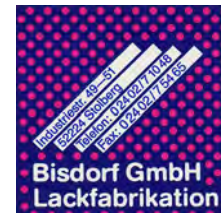
*The information contained in this safety data sheet is based on the present state of knowledge and EU and national legislation. It provides guidance on health, safety and environmental aspects for handling the product in a safe way and should not be construed as any guarantee of the technical performance or suitability for particular applications. It is always the duty of the user/employer to ascertain that the work is planned and carried out in accordance with the national regulations.*

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**solvent naphtha (petroleum), light arom.**

## Annex: Exposure scenario 1

### - SECTION 1: Title section

- **Short title of the exposure scenario** Formulation & (re)packing of substances and mixtures (Industrial)

- **Sector of Use** SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

### - Process category

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC14 Tableting, compression, extrusion, pelletisation, granulation

PROC15 Use as laboratory reagent

- **Environmental release category** ERC2 Formulation into mixture

### - Description of the activities / processes covered in the Exposure Scenario

Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

### - SECTION 2: Conditions of use affecting exposure

The usual precautionary measures should be adhered to in handling the chemicals.

- **Duration and frequency** 8hrs (full working shift).

### - Worker

Frequency of use:

5 workdays/week.

- **Environment** Do not allow contact to soil, surface water and ground water.

### - Physical parameters

### - Physical state

Fluid

Vapour pressure: < 5 hPa (20 °C)

- **Concentration of the substance in the mixture** Covers use of substance / product up to 100%

### - Used amount per time or activity

Regional use tonnage (tonnes/year): 730, SU3

Annual site tonnage (tonnes/year): 730, SU3

Maximum daily site tonnage (kg/day): 7300, SU3

### - Other operational conditions

Continuous release.

Emissiondays /year: 100

Assumes use at not more than 20°C above ambient temperature (unless stated differently).

Assumes a good basic standard of occupational hygiene is implemented.

### - Other operational conditions affecting environmental exposure

Use only on hard ground.

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

Release fraction to air from process (initial release prior to RMM) / wide dispersive use (regional only): 1 %.

Release fraction to wastewater from process (initial release prior to RMM) / wide dispersive use: 0.02 / - %.

Release fraction to soil from process (initial release prior to RMM) / wide dispersive use (regional only): 0.01 / - %.

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## - Other operational conditions affecting worker exposure

Clean working place and equipment every day. Avoid splashing. Remove spilled product immediately.

## - Other operational conditions affecting consumer exposure during the use of the product

Not applicable.

## - Risk management measures

### - Worker protection

General exposures / Use (closed systems) PROC1 / PROC2 / PROC3:

General exposures / Use (open systems) PROC4:

Batch processes at elevated temperatures. Operation is carried out at elevated temperature (> 20°C above ambient temperature) PROC3:

Laboratory activities (PROC15):

Bulk transfer (PROC8a / 8b):

Mixing operations (open systems) PROC4/PROC5/PROC19:

Transfer from/pouring from containers (PROC8a,8b,9):

Equipment cleaning and maintenance (PROC 8a, 8b):

Material transfers Drum/batch transfers (Non-dedicated facility) PROC8b:

Material transfers Drum/batch transfers (dedicated facility) PROC8b:

No other specific measures identified.

Storage (PROC1 / PROC2):

Store substance within a closed system.

### - Organisational protective measures

Ensure good ventilation. This can be achieved by using a local exhaust or general exhaust system. If these measures are insufficient to keep the solvent vapour concentration below the workplace limit, wear an adequate respiratory protective device.

### - Technical protective measures

Use product only in enclosed systems.

Ensure that suitable extractors are available on processing machines

Provide explosion-proof electrical equipment.

### - Personal protective measures

Do not inhale gases / fumes / aerosols.

Protective gloves.

Only use chemical-protective gloves with CE-labelling of category III.

Standard protective working clothes, chemical resistant safety-shoes or wellingtons. If skin contact is possible, wear impenetrable protective clothing.

- Measures for consumer protection Not relevant for this Exposure Scenario.

### - Environmental protection measures

- Air Treat air emission to provide a typical removal efficiency of (%): 0

### - Water

Sludge treatment: Incineration or in a landfill

Do not allow to reach sewage system.

Risk from environmental exposure is driven by freshwater sediment.

Prevent discharge of undissolved substance to or recover from onsite wastewater.

Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 93.6

Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/day): 310.000

Assumed domestic sewage treatment plant flow (m3/d): 2000

- Soil Prevent contamination of soil.

### - Disposal measures

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

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

### - Disposal procedures

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

- Waste type Partially emptied and uncleaned packaging

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## - SECTION 3: Exposure estimation

- **Worker (oral)** No significant oral exposure.
- **Worker (dermal)** The calculated value is smaller than the DNEL.
- **Worker (inhalation)** The calculated value is smaller than the DNEL.
- **Consumer** Not relevant for this Exposure Scenario.

## - SECTION 4: Guidance for downstream users

The exposure estimation was carried out in accordance with ECETOC TRA.

Version 3. <http://www.ecetoc.org/tra>

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/ Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/ Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

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

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

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

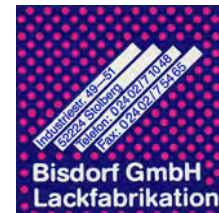


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## Annex: Exposure scenario 2

### - SECTION 1: Title section

#### - Short title of the exposure scenario

Uses in Coatings - Industrial

Uses in Coatings - Professional

#### - Sector of Use

SU3 Industrial uses: Uses of substances as such or in preparations at industrial sites

SU22 Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

#### - Process category

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions.

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

PROC4 Chemical production where opportunity for exposure arises

PROC5 Mixing or blending in batch processes

PROC7 Industrial spraying

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

PROC10 Roller application or brushing

PROC11 Non industrial spraying

PROC13 Treatment of articles by dipping and pouring

PROC14 Tableting, compression, extrusion, pelletisation, granulation

PROC15 Use as laboratory reagent

PROC19 Manual activities involving hand contact

#### - Environmental release category

ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)

ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)

ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)

#### - Description of the activities / processes covered in the Exposure Scenario

Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.

### - SECTION 2: Conditions of use affecting exposure

The usual precautionary measures should be adhered to in handling the chemicals.

- Duration and frequency 8hrs (full working shift).

#### - Worker

Frequency of use:

5 workdays/week.

- Environment Avoid contact to soil and / or ground water during application

#### - Physical parameters

- Physical state Fluid

- Concentration of the substance in the mixture Covers use of substance / product up to 100%

#### - Used amount per time or activity

Regional use tonnage (tonnes/year): 7600, SU3

Annual site tonnage (tonnes/year): 7600, SU3

Maximum daily site tonnage (kg/day): 25000, SU3



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*Regional use tonnage (tonnes/year): 2200, SU22*

*Annual site tonnage (tonnes/year): 1.1, SU22*

*Maximum daily site tonnage (kg/day): 3.0, SU22*

## **- Other operational conditions**

*Continuous release.*

*Emissiondays /year: 300 (SU3) / 365 (SU22)*

*Assumes use at not more than 20°C above ambient temperature (unless stated differently).*

*Assumes a good basic standard of occupational hygiene is implemented.*

## **- Other operational conditions affecting environmental exposure**

*Local freshwater dilution factor: 10*

*Local marine water dilution factor: 100*

*Release fraction to air from process (initial release prior to RMM) / wide dispersive use (regional only): 98 / 98 %.*

*Release fraction to wastewater from process (initial release prior to RMM) / wide dispersive use: 0.07 / 1 %.*

*Release fraction to soil from process (initial release prior to RMM) / wide dispersive use (regional only): 0 / 1 %.*

## **- Other operational conditions affecting worker exposure**

*Clean working place and equipment every day. Avoid splashing. Remove spilled product immediately.*

## **- Other operational conditions affecting consumer exposure during the use of the product**

*Not applicable.*

## **- Risk management measures**

### **- Worker protection**

*General exposures / Use (closed systems) PROC1 / PROC2 / PROC3:*

*Film formation - force drying, stoving and other technologies (closed systems).*

*Operation is carried out at elevated temperature (> 20°C above ambient temperature) PROC2:*

*Production or preparation of articles by tableting, compression, extrusion or pelletisation (PROC14):*

*Equipment cleaning and maintenance (Non-dedicated facility) PROC 8a:*

*Laboratory activities (PROC15):*

*No other specific measures identified.*

*Preparation of material for application Outdoor (PROC 5):*

*Roller, spreader, flow application Outdoor (PROC 10):*

*Film formation - air drying Outdoors (PROC 4):*

*Dipping, immersion and pouring Outdoor (PROC 13):*

*Ensure operation is undertaken outdoors.*

*Avoid carrying out activities involving exposure for more than 1 hour(s).*

*Preparation of material for application (PROC5):*

*Roller, spreader, flow application Indoor (PROC 10):*

*Film formation - air drying Indoor (PROC4):*

*Dipping, immersion and pouring Indoor (PROC 13):*

*Provide a good standard of general ventilation (10 to 15 air changes per hour).*

*Controlled ventilation means air is supplied or removed by a powered fan.*

*Avoid carrying out activities involving exposure for more than 1 hour(s).*

*Spraying PROC7:*

*Wear a respirator conforming to EN140 with Type A filter or better.*

*Spraying (automatic/robotic) PROC7:*

*Carry out in a vented booth or extracted enclosure.*

*Manual Spraying Indoor (PROC11) bis 100%:*

*Carry out in a vented booth or extracted enclosure.*

*Or: wear a full face respirator conforming to EN136 with Type A/P2 filter or better.*

*Manual Spraying Outdoor (PROC11) bis 50%:*

*Ensure operation is undertaken outdoors.*

*Avoid carrying out activities involving exposure for more than 4 hour(s).*

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*Limit the substance content in the product to 50%.*

*Storage (PROC1 / PROC2):*

*Store substance within a closed system.*

## **- Organisational protective measures**

*Ensure good ventilation. This can be achieved by using a local exhaust or general exhaust system. If these measures are insufficient to keep the solvent vapour concentration below the workplace limit, wear an adequate respiratory protective device.*

## **- Technical protective measures**

*Provide explosion-proof electrical equipment.*

*Ensure that suitable extractors are available on processing machines*

## **- Personal protective measures**

*Do not inhale gases / fumes / aerosols.*

*Solvent resistant gloves*

*Standard protective working clothes, chemical resistant safety-shoes or wellingtons. If skin contact is possible, wear impenetrable protective clothing.*

**- Measures for consumer protection** *Not relevant for this Exposure Scenario.*

## **- Environmental protection measures**

**- Air** *Treat air emission to provide a typical removal efficiency of (%): 90 / 0*

## **- Water**

*Sludge treatment: Incineration or in a landfill*

*Risk from environmental exposure is driven by freshwater sediment.*

*Prevent discharge of undissolved substance to or recover from onsite wastewater.*

*Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%): 93.6*

*Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/day): 88000 (SU3) / 4700 (SU22)*

*Assumed domestic sewage treatment plant flow (m3/d): 2000*

**- Soil** *Use bunds or dykes around storage facilities to prevent soil and water pollution in the event of a spill.*

## **- Disposal measures**

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

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

## **- Disposal procedures**

*Must not be disposed of together with household garbage. Do not allow product to reach sewage system.*

**- Waste type** *Partially emptied and uncleaned packaging*

## **- SECTION 3: Exposure estimation**

**- Worker (oral)** *No significant oral exposure.*

**- Worker (dermal)** *The calculated value is smaller than the DNEL.*

**- Worker (inhalation)** *The calculated value is smaller than the DNEL.*

**- Environment** *The calculated value is smaller than the PNEC.*

**- Consumer** *Not relevant for this Exposure Scenario.*

## **- SECTION 4: Guidance for downstream users**

*The exposure estimation was carried out in accordance with ECETOC TRA.*

*Version 3. <http://www.ecetoc.org/tra>*

*Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/ Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/ Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.*

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

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

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