

SAFETY DATA SHEET

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



Product name: EP-Härter for 2K-EP Lackfarbe, mixing rate=8:1
Date of printing: 09.10.2023

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

1.1 Product identifier

Product name: EP-Härter for 2K-EP Lackfarbe, mixing rate=8:1
Unique Formula Identifier (UFI-Code): D160-M04D-300T-41YE
Product type: Curing agent

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

1.4 Emergency telephone number

Emergency information: Information Center against Poisons
University Bonn
Telephone number: +49 (0)228 / 19240

Date of issue: 09.10.2023

Date of previous issue: 01.10.2021

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
3.1I	acute toxicity (inhal.)	Acute Tox. 4	H332
3.1O	acute toxicity (oral)	Acute Tox. 4	H302
3.2	skin corrosion/irritation	Skin Corr. 1B	H314
3.3	serious eye damage/eye irritation	Eye Dam. 1	H318
3.4S	skin sensitization	Skin Sens. 1	H317
4.1C	hazardous to the aquatic environment - chronic hazard	Aquatic Chronic 3	H412

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.
H302 - Harmful if swallowed.
H314 - Causes severe skin burns and eye damage.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H332 - Harmful if inhaled.
H412 - Harmful to aquatic life with long lasting effects.

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) can according GHS/CLP Art. 33 (3) substituted to label of ADR.

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
1-methoxy-2-propanol (PM)	REACH: 01-2119457435-35 CAS: 107-98-2 EG: 203-539-1	10-15	Flam. Liq. 3, H226 STOT SE 3, H336	[1] [2]
benzyl alcohol	REACH: 01-2119492630-38 CAS: 100-51-6 EG: 202-859-9	25-35	Acute Tox. 4, H302 Acute Tox. 4, H332	[1]
Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer	REACH: Annex V No. 4 CAS: 68609-08-5 EG: 614-657-1	25-35	Skin Corr. 1B, H314 Eye Dam. 1, H318 Aquatic Chronic 3, H412	[1]
3-Aminomethyl-3,5,5- trimethyl-cyclohexylamine	REACH: 01-2115914687-32 CAS: 2855-13-2 EG: 220-666-8	10-15	Acute Tox. 4, H302 Acute Tox. 4, H312 Skin Corr. 1B, H314 Skin Sens. 1A, H317 Eye Dam. 1, H318 Aquatic Chronic 3, H412	[1]
m-Phenylenbis (methylamin)	REACH: 01-2119480150-50 CAS: 1477-55-0 EG: 16-032-5	10-15	Acute Tox. 4, H302 Acute Tox. 4, H332 Skin Corr. 1A, H314 Skin Sens. 1, H317 Eye Dam. 1, H318 Aquatic Chronic 3, H412	[1]
salicylic acid	REACH: 01-2119486984-17 CAS: 69-72-7 EG: 200-712-3	<3	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335	[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
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance does not meet the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII.
- [5] Substance of equivalent conce.

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/m ³]	STEL [ppm]	STEL [mg/m ³]	Source
1-methoxy-2-propanol (PM)	107-98-2		IOLEV	100	375	150	568	2017/164/EU
benzyl alcohol	100-51-6		MAK	5	22	10	44	DFG/GER
m-Phenylbis (methylamin)	1477-55-0	skin			0,1			ACGIH

Notation

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

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		
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 ³ (Acute - local effects)
	DNEL (population)	369 mg/m ³ (Long-term - systemic effects)
	DNEL (population)	43,9 mg/m ³ (Long-term - systemic effects)

Product/ingredient name		
benzyl alcohol		
Oral	DNEL (population)	4 mg/kg bw/day (Long-term-systemic effects) 20 mg/kg bw/day (Acute - systemic effects)
Dermal	DNEL (worker)	8 mg/kg bw/day (Long-term - systemic effects) 40 mg/kg bw/day (Acute - systemic effects)
Inhalation	DNEL (population)	4 mg/kg bw/day (Long-term - systemic effects) 20 mg/kg bw/day (Acute - systemic effects)
	DNEL (worker)	22 mg/m ³ (Long-term - systemic effects) 110 mg/m ³ ((Acute - systemic effects)
	DNEL (population)	5,4 mg/m ³ (Long-term - systemic effects) 27 mg/m ³ ((Acute - systemic effects)

Product/ingredient name		
3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine		
Oral	DNEL (population)	0,526 mg/kg bw/day (Long-term-systemic effects)
Inhalation	DNEL (worker)	20,1 mg/m ³ (Long-term - systemic effects)
	DNEL (worker)	20,1 mg/m ³ ((Acute - local effects)

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Product/ingredient name		
m-Phenylenbis (methylamin)		
Dermal	DNEL (worker)	0,33 mg/kg bw/day (Long-term - systemic effects)
Inhalation	DNEL (worker)	1,2 mg/m ³ (Long-term - systemic effects)
		0,2 mg/m ³ (Long-term - local effects)

Product/ingredient name		
salicylic acid		
Dermal	DNEL (worker)	2,3 mg/kg bw/day (Long-term - systemic effects)
Inhalativ	DNEL (worker)	5 mg/m ³ (Long-term - systemic and local 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)

Product/ingredient name	
benzyl alcohol	
PNEC aqua	1 mg/l (fresh water) 0,1 mg/l (marine water)
PNEC	39 mg/l (STP (sewage treatment plant)) 0,456 mg/kg dw (soil)
PNEC sediment	5,27 mg/kg dw (fresh water) 0,527 mg/kg dw (marine water)

Product/ingredient name	
3-Aminomethyl-3,5,5-trimethyl-cyclohexylamin	
PNEC aqua	0,06 mg/l (fresh water) 0,006 mg/l (marine water)
PNEC	- mg/l (STP (sewage treatment plant)) 1,121 mg/kg dw (soil)
PNEC sediment	5,784 mg/kg dw (fresh water) 0,578 mg/kg dw (marine water)

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Product/ingredient name	
m-Phenylenbis (methylamin)	
PNEC aqua	0,094 mg/l (fresh water) 0,0094 mg/l (marine water)
PNEC	10 mg/l (STP (sewage treatment plant)) 0,045 mg/kg dw (soil)
PNEC sediment	0,43 mg/kg dw (fresh water) 0,043 mg/kg dw (marine water)

Product/ingredient name	
salicylic acid	
PNEC aqua	0,2 mg/l (fresh water) 0,02 mg/l (marine water)
PNEC	162 mg/l (STP (sewage treatment plant)) 0,166 mg/kg dw (soil)
PNEC sediment	1,42 mg/kg dw (fresh water) 0,142 mg/kg dw (marine water)

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.

	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.

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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: Slightly yellowish

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	-97 °C
Boiling point/Boiling range	120 °C
Flash point	~31 °C (IP 170 (ABEL))
Flammability (solid / gas)	Not applicable.
Ignition temperature	~270 ° 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	1,5 %(Vol)
Upper	13,7 %(Vol)
Oxidizing properties	Not determined
Vapour pressure	17,1 hPa (20 °C)
Density	~1,03 g/cm ³ (20 °C)
Vapor density	Not determined
Evaporation rate	No data available.
Solubility in Miscibility with water	Organic solvents (see point 3) Partially miscible.
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:	~38 s DIN 4mm (20°C)
Solvent separation test	< 3% (20°C)

9.2. Other information

No additional information.

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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
1-methoxy-2-propanol (PM)	LC50 Inhalation Vapour	Rat	10000 ppm	5 hours
	LD50 Dermal	Rabbit	13 g/kg	-
	LD50 Oral	Rat	6600 mg/kg	-
benzyl alcohol	LC50 Inhalation Vapour	Rat	~ 8,8 mg/l	4 hours
	LD50 Dermal	Rabbit	2000 mg/kg	-
	LD50 Oral	Rat	1230 mg/kg	-
Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer	LC50 Inhalation Vapour	Rat	10-100 mg/l	4 hours
	LD50 Dermal	Rabbit	10-100 mg/kg	-
	LD50 Oral	Rat	10-100 mg/kg	-
m-Phenylenbis (methylamin)	LC50 Inhalation Vapour	Rat	1,34 mg/l	4 hours
	LD50 Dermal	Rabbit	>3100 mg/kg	-
	LD50 Oral	Rat	930 mg/kg	-
salicylic acid	LC50 Inhalation Vapour	Rat	-	4 hours
	LD50 Dermal	Rabbit	>10000 mg/kg	-
	LD50 Oral	Rat	891 mg/kg	-

Acute toxicity estimates

Route	ATE-Value
Oral	not rated
Dermal	not rated
Inhalation (vapors)	25,937 mg/l/4h

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Corrosion/Irritation

Product/ingredient name	Result	Species	Score	Exposure
1-methoxy-2-propanol (PM)	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams
3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine	Eyes - Severe irritant	Rabbit	-	-
	Skin - Severe irritant	Rabbit	-	-
m-Phenylenbis (methylamin)	Eyes - Severe irritant	Rabbit	-	24 hours 50 Micrograms
	Skin - Severe irritant	Rabbit	-	24 hours 750 Micrograms
	Respiratory - Severe irritant	Rabbit	-	-

Sensitiser

Product/ingredient name	Route of exposure	Species	Result
3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine	Skin	Guinea pig	Sensitising

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
1-methoxy-2-propanol (PM)	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
-	-	-	-

Aspiration hazard

Product/ingredient name	Result
-	-

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential chronic health effects

Sensitization: Contains 3-aminomethyl-3,5,5-trimethylcyclohexylamine.

11.2 Endocrine disrupting properties

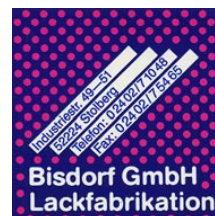
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

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.

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SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
1-methoxy-2-propanol (PM)	Acute EC50 23300 mg/l Acute EC50 1000 mg/l	Daphnie - Daphnia magna Algae - Pseudokirchneriella subcapitata	49 hours 168 hours
benzyl alcohol	Acute LC50 350 mg/l Acute LC50 850 mg/l Acute EC50 640 mg/l	Fish - Leuciscus idus Daphnie - Daphnia magna Algae - Scenedesmus quadricauda	96 hours 48 hours 96 hours
3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine	Acute LC50 10 mg/l Acute EC50 37 mg/l Acute EC50 >50 mg/l Acute EC50 23 mg/l Acute LC50 110 mg/l	Fish - Lepomis macrochirus Algae Aquatic plants Daphnie - Daphnia magna Fish	96 hours 72 hours 72 hours 48 hours 96 hours
m-Phenylenbis (methylamin)	Chronic NOEC 3 mg/l Acute EC50 16 mg/l Acute LC50 20,3 mg/l	Daphnie - Daphnia magna Daphnie - Daphnia magna Algae- Pseudokirchneriella subcapitata	21 days 48 hours 72 hours
salicylic acid	Acute LC50 87,6mg/l Acute EC50 230 mg/l Acute LC50 870 mg/l Acute LC50 90 mg/l NOEC 10 mg/l	Fish - Oncorhynchus mykiss Daphnie - Daphnia magna aquatic invertebrates Fish - Leuciscus idus aquatic invertebrates	96 hours 24 hours 48 hours 48 hours 21 days

12.2 Persistence and degradability

Product/ingredient name	Result
1-methoxy-2-propanol (PM)	96 % - 28 days
benzyl alcohol	96 % - 28 days
3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine	8% - 28 days
m-Phenylenbis (methylamin)	48% - 28 days
salicylic acid	88% - 15 days

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine	-	-	Not readily

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

12.3 Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
1-methoxy-2-propanol (PM)	<1	-	low
benzyl alcohol	0,87	<100	low
Cyclohexanemethanamine, 5-amino-1,3,3-trimethyl-, reaction products with bisphenol A diglycidyl ether homopolymer	-	5,13	low
3-Aminomethyl-3,5,5-trimethyl-cyclohexylamine	0,99	-	low
m-Phenylenbis (methylamin)	0,18	2,69	low
salicylic acid	2,26	-	low

12.4 Mobility in soil

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

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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12.6 Endocrine disrupting properties

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.

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 RELATED MATERIAL	3  	III	Yes.	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. Tunnel code (D/E)
IMDG Class	UN1263	PAINT RELATED MATERIAL	3  	III	Yes.	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. Emergency schedules F-E, S-E
IATA Class	UN1263	PAINT RELATED MATERIAL	3 	III	Yes.	The environmentally hazardous substance mark may appear if required by other transportation regulations.

PG*.: Packing group

Env.*: Environmental hazards

14.6 Special precautions for user

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.

14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

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SECTION 15: Regulatory information

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

EU Regulation

Regulation (EG) Nr. 1907/2006 (REACH)

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 (EG) Nr. 1272/2008 (CLP)

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.

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation
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)

Water hazard class: WGK 2 (Assessment by list): hazardous for water.

VOC: 124 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

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

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

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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, H301 ACUTE TOXICITY (oral) - Category 4
Acute Tox. 4, H312 ACUTE TOXICITY (dermal) - Category 4
Acute Tox. 4, H332 ACUTE TOXICITY (inhalation) - Category 4
Aquatic Chronic 3, H412 AQUATIC HAZARD (LONG-TERM) - Category 3
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, H226 FLAMMABLE LIQUIDS - Category 3
Skin Corr. 1A, H314 SKIN CORROSION/IRRITATION - Category 1A
Skin Irrit. 2, H315 SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1, H317 SKIN SENSITIZATION - Category 1
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

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

Classification	Justification
Flam. Liq. 3; H226	On basis of test data
Acute Tox. 4, H302	Calculation method
Skin Corr. 1A, H314	Calculation method
Skin Sens. 1, H317	Calculation method
Eye Dam. 1, H318	Calculation method
Acute Tox. 4, H332	Calculation method
Aquatic Chronic 3, H412	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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1-methoxy-2-propanol (PM)

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 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 for formulation of preparations and articles (multistage and/or significant contact)

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 preparation into small containers (dedicated filling line, including weighing)

PROC14 Production of preparations or articles by tableting, compression, extrusion, pelletisation

PROC15 Use as laboratory reagent

- **Environmental release category** ERC2 Formulation of preparations

- **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.

- **Physical parameters**

- **Physical state**

Fluid

Vapour pressure: 0.5-10 kPa (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): 63000, SU3

Annual site tonnage (tonnes/year): 37000, SU3

Maximum daily site tonnage (kg/day): 130000, SU3

- **Other operational conditions**

Emission days / year : 300

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

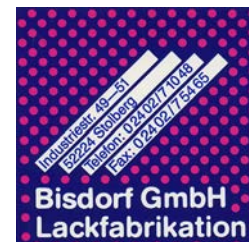
Local marine water dilution factor: 100

Release fraction to air from process (initial release prior to RMM) / wide dispersive use (regional only): 0.5%.

Release fraction to wastewater from process (initial release prior to RMM) / wide dispersive use: 0.3 %.

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

- Other operational conditions affecting worker exposure

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

Keep container tightly closed in a cool place.

Avoid contact with the skin and eyes.

Take precautionary measures against static discharge.

Keep away from sources of ignition - No smoking.

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

Not applicable.

- **Risk management measures** Ensure that personal protective measures are used at all activities.

- Worker protection

General exposures. Continuous process (closed systems) PROC1:

General exposures. Continuous process with sample collection (closed systems) PROC2:

Preparation of material for application. Use in contained batch (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:

Process sampling (PROC3):

Mixing operations (open systems) PROC5:

Bulk transfer (PROC8a / 8b):

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

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

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

Equipment cleaning and maintenance (PROC8a):

Filling of drums and small containers (PROC 9):

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

Laboratory activities (PROC15):

No other specific measures identified.

- Organisational protective measures

Ensure good ventilation. This can be achieved by using a local exhaustion 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.

The employer must ensure that the necessary personal protective devices are available and applied accordingly to the instructions.

- Technical protective measures

Provide explosion-proof electrical equipment.

Ensure that suitable extractors are available on processing machines

- Personal protective measures

Detailed measures on hand protection according to Safety Data Sheet, section 8.

Do not inhale gases / fumes / aerosols.

Safety glasses

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

- Environmental protection measures

- Air

Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental legislation.

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

- Water

Sludge treatment: Incineration or in a landfill

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 (%): 87.3

Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/day): 530000

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

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- **Soil** No special measures required.
- **Notes** In case of unintended release of the product: See section 6 of the Safety Data Sheet.

- **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.

- **Waste type** Partially emptied and uncleaned packaging
- **Notes** Disposal must be made according to official regulations.

- **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.

Annex to the extended Safety Data Sheet (eSDS)

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

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Annex: Exposure scenario 2

- SECTION 1: Title section

- Short title of the exposure scenario

Uses in Coatings - Industrial

Solvent-based process

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

- Process category

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 for formulation of preparations and articles (multistage and/or significant contact)

PROC7 Industrial spraying

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

PROC13 Treatment of articles by dipping and pouring

PROC15 Use as laboratory reagent

- Environmental release category

ERC4 Industrial use of processing aids in processes and products, not becoming part of articles

- 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.

- Physical parameters

- Physical state

Fluid

Vapour pressure: 0.5-10 kPa (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): 63000, SU3

Annual site tonnage (tonnes/year): 3200, SU3

Maximum daily site tonnage (kg/day): 11000, SU3

- Other operational conditions

Continuous release.

Emissiondays /year: 300

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): 90%.

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Release fraction to wastewater from process (initial release prior to RMM) / wide dispersive use: 2 %.
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.

Keep container tightly closed in a cool place.

Avoid contact with the skin and eyes.

Take precautionary measures against static discharge.

Keep away from sources of ignition - No smoking.

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

Not applicable.

- **Risk management measures** Ensure that personal protective measures are used at all activities.

- 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:

Mixing operations (closed systems) PROC:

Film formation - air drying Indoor (PROC4):

Preparation of material for application (PROC5):

Material transfers Drum/Batch transfer (Non-dedicated facility) PROC8a:

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

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

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

Apply by Rolling or Brushing (PROC10):

Treatment by dipping and pouring (PROC13):

Laboratory activities (PROC15):

No other specific measures identified.

Spraying (automatic/robotic) PROC7:

Carry out in a vented booth or extracted enclosure.

Spraying (PROC 7 (manuell)):

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

- 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.

The employer must ensure that the necessary personal protective devices are available and applied accordingly to the instructions.

- Technical protective measures

Provide explosion-proof electrical equipment.

Ensure that suitable extractors are available on processing machines

- Personal protective measures

Detailed measures on hand protection according to Safety Data Sheet, section 8.

Do not inhale gases / fumes / aerosols.

Safety glasses

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

- Environmental protection measures

- Air

Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental legislation.

Treat air emission to provide a typical removal efficiency of (%): 70

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- Water

Sludge treatment: Incineration or in a landfill

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 (%): 87.3

Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/day): 79000

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

- **Soil** No special measures required.

- **Notes** In case of unintended release of the product: See section 6 of the Safety Data Sheet.

- 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.

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

- **Notes** Disposal must be made according to official regulations.

- 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.

Annex to the extended Safety Data Sheet (eSDS)

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Annex: Exposure scenario 3

- SECTION 1: Title section

- Short title of the exposure scenario

Uses in Coatings - Industrial

Water-based process

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

- Process category

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 for formulation of preparations and articles (multistage and/or significant contact)

PROC7 Industrial spraying

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

PROC13 Treatment of articles by dipping and pouring

PROC15 Use as laboratory reagent

- Environmental release category

ERC4 Industrial use of processing aids in processes and products, not becoming part of articles

- 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.

- Physical parameters

- Physical state

Fluid

Vapour pressure: 0.5-10 kPa (20 °C)

- **Concentration of the substance in the mixture** Covers use of substance / product up to 5 %.

- Used amount per time or activity

Regional use tonnage (tonnes/year): 2600, SU3

Annual site tonnage (tonnes/year): 130, SU3

Maximum daily site tonnage (kg/day): 433, SU3

- Other operational conditions

Continuous release.

Emissiondays /year: 300

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

Assumes a good basic standard of occupational hygiene is implemented.

Annex to the extended Safety Data Sheet (eSDS)

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

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- 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): 80 %.

Release fraction to wastewater from process (initial release prior to RMM) / wide dispersive use: 10 %.

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.

Keep container tightly closed in a cool place.

Avoid contact with the skin and eyes.

Take precautionary measures against static discharge.

Keep away from sources of ignition - No smoking.

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

Not applicable.

- **Risk management measures** Ensure that personal protective measures are used at all activities.

- 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:

Mixing operations (closed systems) PROC:

Film formation - air drying Indoor (PROC4):

Preparation of material for application (PROC5):

Material transfers Drum/Batch transfer (Non-dedicated facility) PROC8a:

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

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

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

Apply by Rolling or Brushing (PROC10):

Treatment by dipping and pouring (PROC13):

Laboratory activities (PROC15):

No other specific measures identified.

Spraying (automatic/robotic) PROC7:

Spraying (PROC 7 (manuell)):

Wear suitable gloves tested to EN374.

- 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.

The employer must ensure that the necessary personal protective devices are available and applied accordingly to the instructions.

- Technical protective measures

Provide explosion-proof electrical equipment.

Ensure that suitable extractors are available on processing machines

- Personal protective measures

Detailed measures on hand protection according to Safety Data Sheet, section 8.

Do not inhale gases / fumes / aerosols.

Safety glasses

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

- Environmental protection measures

- Air

Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental legislation.

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

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- Water

Sludge treatment: Incineration or in a landfill

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 (%): 87.3

Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/day): 140000

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

- **Soil** No special measures required.

- **Notes** In case of unintended release of the product: See section 6 of the Safety Data Sheet.

- 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.

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

- **Notes** Disposal must be made according to official regulations.

- 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.

Annex to the extended Safety Data Sheet (eSDS)

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

Product name: EP-Härter for 2K-EP Lackfarbe, mixing rate=8:1
Date of printing: 09.10.2023



Annex: Exposure scenario 4

- SECTION 1: Title section

- Short title of the exposure scenario

Uses in Coatings - Professional

Solvent-based process

- Sector of Use

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

- Process category

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 for formulation of preparations and articles (multistage and/or significant contact)

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

PROC13 Treatment of articles by dipping and pouring

PROC15 Use as laboratory reagent

PROC19 Hand-mixing with intimate contact and only PPE available

- Environmental release category

ERC8a Wide dispersive indoor use of processing aids in open systems

ERC8d Wide dispersive outdoor use of processing aids in open systems

- 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.

- Physical parameters

- Physical state

Fluid

Vapour pressure: 0.5-10 kPa (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): 63000, SU3

Annual site tonnage (tonnes/year): 3150, SU3

Maximum daily site tonnage (kg/day): 11000, SU3

- Other operational conditions

Continuous release.

Emissiondays /year: 300

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

Assumes a good basic standard of occupational hygiene is implemented.

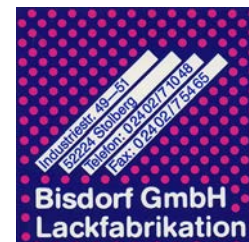
- Other operational conditions affecting environmental exposure

Local freshwater dilution factor: 10

Local marine water dilution factor: 100

Annex to the extended Safety Data Sheet (eSDS)

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



Product name: EP-Härter for 2K-EP Lackfarbe, mixing rate=8:1
Date of printing: 09.10.2023

Release fraction to air from process (initial release prior to RMM) / wide dispersive use (regional only): 90%.
Release fraction to wastewater from process (initial release prior to RMM) / wide dispersive use: 2 %.
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. Keep container tightly closed in a cool place.

Avoid contact with the skin and eyes.

Take precautionary measures against static discharge.

Keep away from sources of ignition - No smoking.

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

Not applicable.

- Risk management measures

Ensure that personal protective measures are used at all activities.

Wear suitable gloves tested to EN374 during the activities where excessive skin contact is possible.

Eye Protection – suitable eye protection should be worn when handling product if there is a risk of splashing.

- Worker protection

Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

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

Film formation - air drying Indoor (PROC4):

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

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

Laboratory activities (PROC15):

No other specific measures identified.

Material transfers Drum/Batch transfer (Non-dedicated facility) PROC8a:

Provide a good standard of general ventilation.

Preparation of material for application (PROC5):

Apply by Rolling or Brushing (PROC10):

Treatment by dipping and pouring (PROC13):

Hand application - fingerpaints, pastels, adhesives. PROC19:

Provide a good standard of general ventilation.

Or: Ensure operation is undertaken outdoors.

Spraying (PROC 11, manuell, innen):

Carry out in a vented booth or extracted enclosure.

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

Spraying (PROC 11, manuell, außen):

Ensure operation is undertaken outdoors.

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

- Organisational protective measures

Ensure good ventilation. This can be achieved by using a local exhaustion 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.

The employer must ensure that the necessary personal protective devices are available and applied accordingly to the instructions.

- Technical protective measures

Provide explosion-proof electrical equipment.

Ensure that suitable extractors are available on processing machines

- Personal protective measures

Detailed measures on hand protection according to Safety Data Sheet, section 8.

Do not inhale gases / fumes / aerosols.

Safety glasses

Annex to the extended Safety Data Sheet (eSDS)

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

Product name: EP-Härter for 2K-EP Lackfarbe, mixing rate=8:1
Date of printing: 09.10.2023



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

- **Environmental protection measures**

- **Air**

Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental legislation.

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

- **Water**

Sludge treatment: Incineration or in a landfill

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 (%): 87.3

Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/day): 80000

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

- **Soil** No special measures required.

- **Notes** In case of unintended release of the product: See section 6 of the Safety Data Sheet.

- **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.

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

- **Notes** Disposal must be made according to official regulations.

- **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.

Annex to the extended Safety Data Sheet (eSDS)

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

Product name: EP-Härter for 2K-EP Lackfarbe, mixing rate=8:1
Date of printing: 09.10.2023



Annex: Exposure scenario 5

- SECTION 1: Title section

- Short title of the exposure scenario

Uses in Coatings - Professional

Water-based process

- Sector of Use

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

- Process category

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 for formulation of preparations and articles (multistage and/or significant contact)

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

PROC13 Treatment of articles by dipping and pouring

PROC15 Use as laboratory reagent

PROC19 Hand-mixing with intimate contact and only PPE available

- Environmental release category

ERC8a Wide dispersive indoor use of processing aids in open systems

ERC8d Wide dispersive outdoor use of processing aids in open systems

- 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.

- Physical parameters

- Physical state

Fluid

Vapour pressure: 0.5-10 kPa (20 °C)

- Concentration of the substance in the mixture Covers use of substance / product up to 5 %.

- Used amount per time or activity

Regional use tonnage (tonnes/year): 2600, SU3

Annual site tonnage (tonnes/year): 130, SU3

Maximum daily site tonnage (kg/day): 433, SU3

- Other operational conditions

Continuous release.

Emissiondays /year: 300

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

Assumes a good basic standard of occupational hygiene is implemented.

Annex to the extended Safety Data Sheet (eSDS)

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

Product name: EP-Härter for 2K-EP Lackfarbe, mixing rate=8:1
Date of printing: 09.10.2023



- 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): 80%.

Release fraction to wastewater from process (initial release prior to RMM) / wide dispersive use: 10 %.

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.

Keep container tightly closed in a cool place.

Avoid contact with the skin and eyes.

Take precautionary measures against static discharge.

Keep away from sources of ignition - No smoking.

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

Not applicable.

- Risk management measures

Ensure that personal protective measures are used at all activities.

Wear suitable gloves tested to EN374 during the activities where excessive skin contact is possible.

Eye Protection – suitable eye protection should be worn when handling product if there is a risk of splashing.

- Worker protection

Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

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

Film formation - air drying Indoor (PROC4):

Preparation of material for application (PROC5):

Material transfers Drum/Batch transfer (Non-dedicated facility) PROC8a:

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

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

Apply by Rolling or Brushing (PROC10):

Treatment by dipping and pouring (PROC13):

Laboratory activities (PROC15):

Hand application - fingerpaints, pastels, adhesives. PROC19:

No other specific measures identified.

Spraying Manual (PROC 11):

Provide a good standard of general ventilation.

Or: Ensure operation is undertaken outdoors.

- Organisational protective measures

Ensure good ventilation. This can be achieved by using a local exhaustion 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.

The employer must ensure that the necessary personal protective devices are available and applied accordingly to the instructions.

- Technical protective measures

Provide explosion-proof electrical equipment.

Ensure that suitable extractors are available on processing machines

- Personal protective measures

Detailed measures on hand protection according to Safety Data Sheet, section 8.

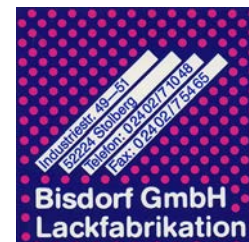
Do not inhale gases / fumes / aerosols.

Safety glasses

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

Annex to the extended Safety Data Sheet (eSDS)

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



Product name: EP-Härter for 2K-EP Lackfarbe, mixing rate=8:1
Date of printing: 09.10.2023

- Environmental protection measures

- Air

Treatment of air emissions is not required for the purposes of REACH compliance but may be needed to comply with other environmental legislation.

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

- Water

Sludge treatment: Incineration or in a landfill

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 (%): 87.3

Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/day): 15000

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

- **Soil** No special measures required.

- **Notes** In case of unintended release of the product: See section 6 of the Safety Data Sheet.

- 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.

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

- **Notes** Disposal must be made according to official regulations.

- 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.