Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

GP 49 / Hardener (beige)

Date of issue/Date of revision: 05.01.2023 en / EU - Version 1.1

1. Identification of the substance preparation and of the company/undertaking

1.1 Identification of the substance or preparation: GP 49
UFI: PHY7-37AD-QR0S-D61X

1.2 Use of the substance/preparation: Hardener

1.3 Company/undertaking identification

Company name:	Gößl + Pfaff GmbH
Street:	Münchener Str. 13
Place:	85123 Karlskron/Brautlach
Telephone:	+49 (0) 8450 / 932-0
Fax-No.:	+49 (0) 8450 / 932-13
Contact person:	Management: Mr. Gößl, Mr. Pfaff
e-mail:	info@goessl-pfaff.de
Internet:	www.goessl-pfaff.de
Responsible Department:	Management,

1.4 Emergency telephone
Emergency CONTACT (24-Hour-Number): GBK GmbH +49 (0) 6132-84463

2. Hazards identification

2.1. Classification of the substance or mixture
CLP REGULATION (EC) No 1272/2008
The health and environmental classifications of this material have been derived using the calculation method, except in cases where test data are available or the physical form impacts classification. Classification(s) based on test data or physical form are noted below, if applicable.
The carcinogenicity classification for titanium dioxide is not applicable based on physical form (material is not a powder).

CLASSIFICATION:
Skin Corrosion/Irritation, Category 1B - Skin Corr. 1B; H314
Serious Eye Damage/Eye Irritation, Category 1 - Eye Dam. 1; H318
Skin Sensitization, Category 1 - Skin Sens. 1; H317
Specific Target Organ Toxicity-Single Exposure, Category 3 - STOT SE 3; H336
Hazardous to the Aquatic Environment (Acute), Category 1 - Aquatic Acute 1; H400
Hazardous to the Aquatic Environment (Chronic), Category 1 - Aquatic Chronic 1; H410

For full text of H phrases, see Section 16.

2.2. Label elements
CLP REGULATION (EC) No 1272/2008
SIGNAL WORD
DANGER

Symbols:
Pictograms

Ingredient	CAS Nbr	EC No.	% by Wt
Reaction products of fatty acids, C18-unsaturated, dimers and trimers with 3,3'-[oxybis(ethane-2,1- diyloxy)]dipropan-1-amine		701-270-9	30 – 60
2-Propenenitrile, polymer with 1,3-butadiene, 1- cyano-1-methyl-4-oxo-4-[[2-(1- piperazinyl)ethyl]amino]butyl-terminated	68683-29-4		5 – 15
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	224-207-2	3 – 13
2,4,6-Tris(dimethylaminomethyl)phenol	90-72-2	202-013-9	7 – 13
2-Piperazin-1-ylethylamine	140-31-8	205-411-0	< 1

HAZARD STATEMENTS:

H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H336	May cause drowsiness or dizziness.
H410	Very toxic to aquatic life with long lasting effects.

PRECAUTIONARY STATEMENTS
Prevention:

P260A	Do not breathe vapours.
P273	Avoid release to the environment.
P280D	Wear protective gloves, protective clothing, and eye/face protection.

Response:

P303 + P361 + P353A	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.

For containers not exceeding 125 ml the following Hazard and Precautionary statements may be used:

<=125 ml Hazard statements
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.

<=125 ml Precautionary statements
Prevention:

P260A	Do not breathe vapours.
P280D	Wear protective gloves, protective clothing, and eye/face protection.

Response:

P303 + P361 + P353A	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTRE or doctor/physician.

SUPPLEMENTAL INFORMATION:
Supplemental Hazard Statements:

EUH212	Warning! Hazardous respirable dust may be formed when used. Do not breathe dust.

2 % of the mixture consists of components of unknown acute dermal toxicity.
Contains 10% of components with unknown hazards to the aquatic environment.

2.3. Other hazards
Persons previously sensitised to amines may develop a cross-sensitisation reaction to certain other amines.
This material does not contain any substances that are assessed to be a PBT or vPvB

3. Composition information on ingredients

3.2. Mixtures

Ingredient	Identifier(s)	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Reaction products of fatty acids, C18unsaturated, dimers and trimers with 3,3'[oxybis(ethane-2,1-diyloxy)]dipropan-1amine	(EC-No.) 701-270-9	30 - 60	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1A, H317 STOT SE 3, H336 Aquatic Acute 1, H400,M=1 Aquatic Chronic 1, H410,M=1
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4[[2-(1-piperazinyl)ethyl]amino]butylterminated	(CAS-No.) 68683-29-4	5 - 15	Skin Irrit. 2, H315 Skin Sens. 1A, H317

2,4,6-tris(dimethylaminomethyl)phenol	(CAS-No.) 90-72-2 (EC-No.) 202-013-9 (REACH-No.) 01-2119560597-27	7 - 13	Acute Tox. 4, H302 Skin Corr. 1C, H314 Eye Dam. 1, H318
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	(CAS-No.) 4246-51-9 (EC-No.) 224-207-2 (REACH-No.) 01-2119963377-26	3 - 13	Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317
Siloxanes and Silicones, di-Me, reaction products with silica	(CAS-No.) 67762-90-7	7 - 13	Substance with a national occupational exposure limit
Titanium dioxide	(CAS-No.) 13463-67-7 (EC-No.) 236-675-5 (REACH-No.) 01-2119489379-17	< 2	Carc. 2, H351 (inhalation)
2-piperazin-1-ylethylamine	(CAS-No.) 140-31-8 (EC-No.) 205-411-0	< 1	Acute Tox. 3, H311 Acute Tox. 4, H302 Skin Corr. 1B, H314 Skin Sens. 1B, H317 Aquatic Chronic 3, H412 Repr. 2, H361d STOT RE 1, H372

Any entry in the Identifier(s) column that begins with the numbers 6, 7, 8, or 9 are a Provisional List Number provided by ECHA pending publication of the official EC Inventory Number for the substance.
Please see section 16 for the full text of any H statements referred to in this section
For information on ingredient occupational exposure limits or PBT or vPvB status, see sections 8 and 12 of this SDS

4. First aid measures

4.1. Description of first aid measures

Inhalation
Remove person to fresh air. If you feel unwell, get medical attention.

Skin contact
Immediately flush with large amounts of water for at least 15 minutes. Remove contaminated clothing.
Get immediate medical attention. Wash clothing before reuse.

Eye contact
Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do.
Continue rinsing. Immediately get medical attention.

If swallowed
Rinse mouth. Do not induce vomiting. Get immediate medical attention.

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

The most important symptoms and effects based on the CLP classification include:
Skin burns (localized redness, swelling, itching, intense pain, blistering, and tissue destruction).
Allergic skin reaction (redness, swelling, blistering, and itching).
Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of vision).
Central nervous system depression (headache, dizziness, drowsiness, incoordination, nausea, slurred speech, giddiness, and unconsciousness).

4.3. Indication of any immediate medical attention and special treatment required

Not applicable

5. Fire-fighting measures

5.1. Extinguishing media

In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture

None inherent in this product.

Hazardous Decomposition or By-Products

Substance	Condition
Amine compounds.	During combustion.
Carbon monoxide.	During combustion.
Carbon dioxide.	During combustion.
Oxides of nitrogen.	During combustion.
Toxic vapour, gas, particulate.	During combustion.

5.3. Advice for fire-fighters
Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapours, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment.

6.3. Methods and material for containment and cleaning up
Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Clean up residue. Seal the container. Dispose of collected material as soon as possible.

6.4. Reference to other sections
Refer to Section 8 and Section 13 for more information

7. Handling and storage

7.1. Precautions for safe handling
For industrial/occupational use only. Not for consumer sale or use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapours/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Use personal protective equipment (eg. Gloves, respirators…) as required.

7.2. Conditions for safe storage including any incompatibilities
Store in a well-ventilated place. Keep container tightly closed. Store away from heat. Store away from acids.

7.3. Specific end use(s)
See information in Section 7.1 and 7.2 for handling and storage recommendations.
See Section 8 for exposure controls and personal protection recommendations.

8. Exposure controls/personal protection

8.1 Control parameters
Occupational exposure limits

Ingredient	CAS Nbr	Agency	Limit type	Additional comments
Titanium dioxide	13463-67-7	UK HSC	TWA(respirable): 4 mg/m3; TWA(Inhalable): 10 mg/m3	
Silicon dioxide	67762-90-7	UK HSC	TWA(as respirable dust): 2.4 mg/m3; TWA(as inhalable dust): 6 mg/m3	

UK HSC: UK Health and Safety Commission
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

Biological limit values
No biological limit values exist for any of the components listed in Section 3 of this safety data sheet.

Derived no effect level (DNEL)

Ingredient	Degradation Product	Population	Human exposure pattern	DNEL
2,4,6-Tris(dimethylaminomethyl) phenol		Worker	Inhalation, Long-term exposure (8 hours), Systemic effects	0.31 mg/m^3

Predicted no effect concentrations (PNEC)

Ingredient	Degradation Product	Compartment	PNEC
2,4,6-Tris(dimethylaminomethyl) phenol		Freshwater	0.084 mg/l
2,4,6-Tris(dimethylaminomethyl) phenol		Intermittent releases to water	0.84 mg/l
2,4,6-Tris(dimethylaminomethyl) phenol		Marine water	0.0084 mg/l
2,4,6-Tris(dimethylaminomethyl) phenol		Sewage Treatment Plant	0.2 mg/l

Recommended monitoring procedures:
Information on recommended monitoring procedures can be obtained from UK HSC

8.2. Exposure control
In addition, refer to the annex for more information.

8.2.1. Engineering controls
Provide ventilated enclosure for heat curing. Curing enclosures must be exhausted to outdoors or to a suitable emission control device. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapours/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)
Eye/face protection
Select and use eye/face protection to prevent contact based on the results of an exposure assessment.
The following eye/face protection(s) are recommended:
Full face shield.
Indirect vented goggles.

Applicable Norms/Standards
Use eye/face protection conforming to EN 166

Skin/hand protection
Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment.
Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing. Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.
Gloves made from the following material(s) are recommended:

Material	Thickness (mm)	Breakthrough Time
Polymer laminate	No data available	No data available

Applicable Norms/Standards
Use gloves tested to EN 374

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary. Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended: Apron - polymer laminate

Respiratory protection
An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapours and particulates.

For questions about suitability for a specific application, consult with your respirator manufacturer.

Applicable Norms/Standards
Use a respirator conforming to EN 140 or EN 136: filter types A & P

8.2.3. Environmental exposure controls
Refer to Annex

9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid.
Specific Physical Form:	Thixotropic paste
Colour	Off-White
Odor	Typical Amine
Odour threshold	No data available.
Melting point/freezing point	Not applicable.
Boiling point/boiling range	Not applicable.
Flammability (solid, gas)	Not classified
Flammable Limits(LEL)	Not applicable.
Flammable Limits(UEL)	Not applicable.
Flash point	>=100 °C [Test Method: Closed Cup]
Autoignition temperature	Not applicable.
Decomposition temperature	No data available.
pH	substance/mixture is non-soluble (in water)
Kinematic Viscosity	No data available.
Water solubility	No data available.
Solubility- non-water	No data available.
Partition coefficient: n-octanol/water	Not applicable.
Vapour pressure	86,659.3 Pa
Density	No data available.
Relative density	0.97 - 1.1 [Ref Std: WATER=1]
Relative Vapor Density	Not applicable.

9.2. Other information

EU Volatile Organic Compounds	0,1 %
Evaporation rate	Negligible
Molecular weight	Not applicable.
Percent volatile	0.1 <= 1 % weight [Test Method: Estimated]

10. Stability and reactivity

10.1 Reactivity
This material is considered to be non reactive under normal use conditions.

10.2 Chemical stability
Stable.

10.3 Possibility of hazardous reactions
Hazardous polymerisation will not occur.

10.4 Conditions to avoid
Heat is generated during cure. Do not cure a mass larger than 50 grams in a confined space to prevent a premature exothermic reaction with production of intense heat and smoke.

10.5 Incompatible materials
Strong acids.

10.6 Hazardous decomposition products
Substance **Condition**
None known.
Refer to section 5.2 for hazardous decomposition products during combustion.

11. Toxicological information

The information below may not agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 11 are based on UN GHS calculation rules and classifications derived from internal hazard assessments.

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008
Signs and Symptoms of Exposure
Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation
Respiratory tract irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Skin contact
Corrosive (skin burns): Signs/symptoms may include localised redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction. Allergic skin reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye contact
Corrosive (eye burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Ingestion
May be harmful if swallowed.
Gastrointestinal corrosion: Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea; blood in the faeces and/or vomitus may also be seen. May cause additional health effects (see below).

Additional Health Effects:
Single exposure may cause target organ effects:
Central nervous system (CNS) depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Reproductive/Developmental Toxicity:
Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Additional information:
Persons previously sensitised to amines may develop a cross-sensitisation reaction to certain other amines.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >5,000 mg/kg
Overall product	Ingestion		No data available; calculated ATE >2,000 - =5,000 mg/kg
Reaction products of fatty acids, C18-unsaturated, dimers and trimers with 3,3'-[oxybis(ethane-2,1-diyloxy)]dipropan-1-amine	Dermal	Rat	LD50 > 2,000 mg/kg
Reaction products of fatty acids, C18-unsaturated, dimers and trimers with 3,3'-[oxybis(ethane-2,1-diyloxy)]dipropan-1-amine	Ingestion	Rat	LD50 > 2,000 mg/kg

Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH)

GP 49 / Hardener (beige)

Date of issue/Date of revision: 05.01.2023 en / EU - Version 1.1

2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated	Dermal	Rabbit	LD50 > 3,000 mg/kg
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-	Ingestion	Rat	LD50 > 15,300 mg/kg
4-oxo-4-[[2-(1-piperazinyl)ethyl]amino]butyl-terminated			
2,4,6-tris(dimethylaminomethyl)phenol	Dermal	Rat	LD50 1,280 mg/kg
2,4,6-tris(dimethylaminomethyl)phenol	Ingestion	Rat	LD50 1,000 mg/kg
Siloxanes and Silicones, di-Me, reaction products with silica	Dermal	Rabbit	LD50 > 5,000 mg/kg
Siloxanes and Silicones, di-Me, reaction products with silica	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 0.691 mg/l
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Rat	LD50 > 5,110 mg/kg
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Dermal	Rabbit	LD50 2,525 mg/kg
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Rat	LD50 2,850 mg/kg
Titanium dioxide	Dermal	Rabbit	LD50 > 10,000 mg/kg
Titanium dioxide	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.82 mg/l
Titanium dioxide	Ingestion	Rat	LD50 > 10,000 mg/kg
2-piperazin-1-ylethylamine	Dermal	Rabbit	LD50 865 mg/kg
2-piperazin-1-ylethylamine	Ingestion	Rat	LD50 1,470 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Reaction products of fatty acids, C18-unsaturated, dimers and trimers with 3,3'[oxybis(ethane-2,1-diyloxy)]dipropan-1-amine	Rat	Irritant
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1piperazinyl)ethyl]amino]butyl-terminated	Rabbit	Irritant
2,4,6-tris(dimethylaminomethyl)phenol	Rabbit	Corrosive
Siloxanes and Silicones, di-Me, reaction products with silica	Rabbit	No significant irritation
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Rabbit	Corrosive
Titanium dioxide	Rabbit	No significant irritation
2-piperazin-1-ylethylamine	Rabbit	Corrosive

Serious Eye Damage/Irritation

Name	Species	Value
Reaction products of fatty acids, C18-unsaturated, dimers and trimers with 3,3'[oxybis(ethane-2,1-diyloxy)]dipropan-1-amine	In vitro data	Severe irritant
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1piperazinyl)ethyl]amino]butyl-terminated	Rabbit	Mild irritant
2,4,6-tris(dimethylaminomethyl)phenol	Rabbit	Corrosive
Siloxanes and Silicones, di-Me, reaction products with silica	Rabbit	No significant irritation
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Rabbit	Corrosive
Titanium dioxide	Rabbit	No significant irritation
2-piperazin-1-ylethylamine	Rabbit	Corrosive

Skin Sensitisation

Name	Species	Value
Reaction products of fatty acids, C18-unsaturated, dimers and trimers with 3,3'[oxybis(ethane-2,1-diyloxy)]dipropan-1-amine	Guinea pig	Sensitising
2-Propenenitrile, polymer with 1,3-butadiene, 1-cyano-1-methyl-4-oxo-4-[[2-(1piperazinyl)ethyl]amino]butyl-terminated	Guinea pig	Sensitising
2,4,6-tris(dimethylaminomethyl)phenol	Guinea pig	Not classified

Siloxanes and Silicones, di-Me, reaction products with silica	Human and animal	Not classified
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Professional judgement	Sensitising
Titanium dioxide	Human and animal	Not classified
2-piperazin-1-ylethylamine	Guinea pig	Sensitising

Respiratory Sensitisation
For the component/components, either no data is currently available or the data is not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
Reaction products of fatty acids, C18-unsaturated, dimers and trimers with 3,3'[oxybis(ethane-2,1-diyloxy)]dipropan-1-amine	In Vitro	Not mutagenic
2,4,6-tris(dimethylaminomethyl)phenol	In Vitro	Not mutagenic
Siloxanes and Silicones, di-Me, reaction products with silica	In Vitro	Not mutagenic
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	In Vitro	Not mutagenic
Titanium dioxide	In Vitro	Not mutagenic
Titanium dioxide	In vivo	Not mutagenic
2-piperazin-1-ylethylamine	In vivo	Not mutagenic
2-piperazin-1-ylethylamine	In Vitro	Some positive data exist, but the data are not sufficient for classification

Carcinogenicity

Name	Route	Species	Value
Siloxanes and Silicones, di-Me, reaction products with silica	Not specified.	Mouse	Some positive data exist, but the data are not sufficient for classification
Titanium dioxide	Ingestion	Multiple animal species	Not carcinogenic
Titanium dioxide	Inhalation	Rat	Carcinogenic.

Reproductive Toxicity
Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test result	Exposure Duration
Reaction products of fatty acids, C18unsaturated, dimers and trimers with 3,3'[oxybis(ethane-2,1-diyloxy)]dipropan-1amine	Ingestion	Not classified for female reproduction	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
Reaction products of fatty acids, C18unsaturated, dimers and trimers with 3,3'[oxybis(ethane-2,1-diyloxy)]dipropan-1amine	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,000 mg/kg/day	29 days
Reaction products of fatty acids, C18unsaturated, dimers and trimers with 3,3'[oxybis(ethane-2,1-diyloxy)]dipropan-1amine	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	premating into lactation
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for female reproduction	Rat	NOAEL 509 mg/kg/day	1 generation
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for male reproduction	Rat	NOAEL 497 mg/kg/day	1 generation
Siloxanes and Silicones, di-Me, reaction products with silica	Ingestion	Not classified for development	Rat	NOAEL 1,350 mg/kg/day	during organo-genesis
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Not classified for female reproduction	Rat	NOAEL 600 mg/kg/day	premating into lactation

Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH)

GP 49 / Hardener (beige)

Date of issue/Date of revision: 05.01.2023 en / EU - Version 1.1

3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Not classified for male reproduction	Rat	NOAEL 600 mg/kg/day	59 days
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	Ingestion	Not classified for development	Rat	NOAEL 600 mg/kg/day	premating into lactation
2-piperazin-1-ylethylamine	Ingestion	Not classified for female reproduction	Rat	NOAEL 598 mg/kg/day	premating & during gestation
2-piperazin-1-ylethylamine	Ingestion	Not classified for male reproduction	Rat	NOAEL 409 mg/kg/day	32 days
2-piperazin-1-ylethylamine	Ingestion	Toxic to development	Rabbit	NOAEL 75 mg/kg/day	during gestation

Target Organ(s)
Specific Target Organ Toxicity – single exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Reaction products of fatty acids, C18-unsaturated, dimers and trimers with 3,3'-[oxybis(ethane-2,1diyloxy)]dipropan-1-amine	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	Irritation Positive	
Reaction products of fatty acids, C18-unsaturated, dimers and trimers with 3,3'-[oxybis(ethane-2,1diyloxy)]dipropan-1-amine	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Rat	NOAEL Not available	
2-Propenenitrile, polymer with 1,3-butadiene, 1cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl)-ethyl]amino]butyl-terminated	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL not available	
2,4,6-tris(dimethylamino-methyl)phenol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
3,3'-Oxybis(ethyleneoxy)-bis(pr opylamine)	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
2-piperazin-1-ylethylamine	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test result	Exposure Duration
Reaction products of fatty acids, C18-unsaturated, dimers and trimers with 3,3'-[oxybis(ethane-2,1diyloxy)]dipropan-1-amine	Ingestion	heart | skin | endocrine system | gastrointestinal tract | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system | vascular system	Not classified	Rat	NOAEL 1,000 mg/kg/day	29 days

Siloxanes and Silicones, di-Me, reaction products with silica	Inhalation	respiratory system | silicosis	Not classified	Human	NOAEL Not available	occupational exposure
3,3'-Oxybis(ethyleneoxy)-bis(propylamine)	Ingestion	gastrointestinal tract | heart | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system | vascular system	Not classified	Rat	NOAEL 600 mg/kg/day	59 days
Titanium dioxide	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 0.01 mg/l	2 years
Titanium dioxide	Inhalation	pulmonary fibrosis	Not classified	Human	NOAEL Not available	occupational exposure
2-piperazin-1-ylethylamine	Dermal	skin	Not classified	Rat	NOAEL 100 mg/kg/day	29 days
2-piperazin-1-ylethylamine	Dermal	hematopoietic system | nervous system | kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	29 days
2-piperazin-1-ylethylamine	Inhalation	respiratory system	Causes damage to organs through prolonged or repeated exposure	Rat	NOAEL 0.2 mg/m³	13 weeks
2-piperazin-1-ylethylamine	Inhalation	hematopoietic system | eyes | kidney and/or bladder	Not classified	Rat	NOAEL 53.8 mg/m³	13 weeks
2-piperazin-1-ylethylamine	Ingestion	heart | endocrine system | hematopoietic system | liver | nervous system | kidney and/or bladder	Not classified	Rat	NOAEL 598 mg/kg/day	28 days

Aspiration Hazard
For the component/components, either no data is currently available or the data is not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

11.2. Information on other hazards
This material does not contain any substances that are assessed to be an endocrine disruptor for human health.

12. Ecological information

The information below may not agree with the EU material classification in Section 2 and/or the ingredient classifications in Section 3 if specific ingredient classifications are mandated by a competent authority. In addition, statements and data presented in Section 12 are based on UN GHS calculation rules and classifications.

12.1. Toxicity
No product test data available.

Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH)

GP 49 / Hardener (beige)

Date of issue/Date of revision: 05.01.2023 en / EU - Version 1.1

Material	CAS #	Organism	Type	Exposure	Test endpoint	Test result
Reaction products of fatty acids, C18unsaturated, dimers and trimers with 3,3'[oxybis(ethane-2,1diyloxy)]dipropan-1amine	701-270-9	Fathead minnow	Experimental	96 hours	LL50	2.16 mg/l
Reaction products of fatty acids, C18unsaturated, dimers and trimers with 3,3'[oxybis-(ethane-2,1diyloxy)]-dipropan-1amine	701-270-9	Green algae	Experimental	72 hours	EL50	0.43 mg/l
Reaction products of fatty acids, C18unsaturated, dimers and trimers with 3,3'[oxybis-(ethane-2,1diyloxy)]-dipropan-1amine	701-270-9	Water flea	Experimental	48 hours	EL50	0.57 mg/l
Reaction products of fatty acids, C18unsaturated, dimers and trimers with 3,3'[oxybis(ethane-2,1diyloxy)]dipropan-1amine	701-270-9	Green algae	Experimental	72 hours	NOEL	0.28 mg/l
Reaction products of fatty acids, C18unsaturated, dimers and trimers with 3,3'[oxybis(ethane-2,1diyloxy)]dipropan-1amine	701-270-9	Activated sludge	Experimental	3 hours	EC50	410.3 mg/l
2-Propenenitrile, polymer with 1,3butadiene, 1-cyano-1methyl-4-oxo-4-[[2-(1piperazinyl)ethyl]amino]butyl-terminated	68683-29-4	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Bacteria	Experimental	17 hours	EC50	4,000 mg/l
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Golden Orfe	Experimental	96 hours	LC50	>1,000 mg/l
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Green algae	Experimental	72 hours	EC50	>500 mg/l
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Water flea	Experimental	48 hours	EC50	218.16 mg/l
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Green algae	Experimental	72 hours	EC10	5.4 mg/l
Siloxanes and Silicones, di-Me, reaction products with silica	67762-90-7	N/A	Data not available or insufficient for classification	N/A	N/A	N/A
2,4,6-tris(dimethylaminometh yl)phenol	90-72-2	N/A	Experimental	96 hours	LC50	718 mg/l
2,4,6-tris(dimethylaminometh yl)phenol	90-72-2	Common Carp	Experimental	96 hours	LC50	>100 mg/l
2,4,6-tris(dimethylaminometh yl)phenol	90-72-2	Green algae	Experimental	72 hours	EC50	46.7 mg/l
2,4,6-tris(dimethylaminometh yl)phenol	90-72-2	Water flea	Experimental	48 hours	EC50	>100 mg/l
2,4,6-tris(dimethylaminometh yl)phenol	90-72-2	Green algae	Experimental	72 hours	NOEC	6.44 mg/l
Titanium dioxide	13463-67-7	Activated sludge	Experimental	3 hours	NOEC	>=1,000 mg/l
Titanium dioxide	13463-67-7	Diatom	Experimental	72 hours	EC50	>10,000 mg/l
Titanium dioxide	13463-67-7	Fathead minnow	Experimental	96 hours	LC50	>100 mg/l
Titanium dioxide	13463-67-7	Water flea	Experimental	48 hours	EC50	>100 mg/l
Titanium dioxide	13463-67-7	Diatom	Experimental	72 hours	NOEC	5,600 mg/l
2-piperazin-1ylethylamine	140-31-8	Bacteria	Experimental	17 hours	EC10	100 mg/l
2-piperazin-1ylethylamine	140-31-8	Golden Orfe	Experimental	96 hours	LC50	368 mg/l
2-piperazin-1ylethylamine	140-31-8	Green algae	Experimental	72 hours	EC50	>1,000 mg/l
2-piperazin-1ylethylamine	140-31-8	Water flea	Experimental	48 hours	EC50	58 mg/l
2-piperazin-1ylethylamine	140-31-8	Green algae	Experimental	72 hours	NOEC	31 mg/l

12.2. Persistence and degradability

Material	CAS Nbr	Test type	Duration	Study Type	Test result	Protocol
Reaction products of fatty acids, C18-unsaturated, dimers and trimers with 3,3'-[oxybis(ethane-2,1diyloxy)]dipropan-1-amine	701-270-9	Experimental Biodegradation	28 days	BOD	0%BOD/ThOD	OECD 301F -Manometric respirometry

2-Propenenitrile, polymer with 1,3-butadiene, 1cyano-1-methyl-4-oxo-4-[[2-(1-piperazinyl) ethyl]amino]butyl-terminated	68683-29-4	Data not availblinsufficient	N/A	N/A	N/A	N/A
3,3'-Oxybis(ethyleneoxy)bis(pro pylamine)	4246-51-9	Experimental Biodegradation	25 days	CO2 evolution	-8 %CO2 evolution/THC O2 evolution	OECD 301B - Modified sturm or CO2
3,3'-Oxybis(ethyleneoxy)bis(pro pylamine)	4246-51-9	Estimated Photolysis		Photolytic half-life (in air)	2.96 hours (t 1/2)	
Siloxanes and Silicones, diMe, reaction products with silica	67762-90-7	Data not availblinsufficient	N/A	N/A	N/A	N/A
2,4,6-tris(dimethylaminomethyl)p henol	90-72-2	Experimental Biodegradation	28 days	BOD	4%BOD/ThOD	OECD 301D - Closed bottle test
Titanium dioxide	13463-67-7	Data not availblinsufficient	N/A	N/A	N/A	N/A
2-piperazin-1-ylethylamine	140-31-8	Experimental Biodegradation	28 days	BOD	0%BOD/ThOD	OECD 301C - MITI test (I)

12.3 : Bioaccumulative potential

Material	Cas No.	Test type	Duration	Study Type	Test result	Protocol
Reaction products of fatty acids, C18-unsaturated, dimers and trimers with 3,3'-[oxybis(ethane-2,1diyloxy)]dipropan-1-amine	701-270-9	Modeled Bioconcentration		Bioaccumulation factor	42	Catalogic™
Reaction products of fatty acids, C18-unsaturated, dimers and trimers with 3,3'-[oxybis(ethane-2,1diyloxy)]dipropan-1-amine	701-270-9	Modeled Bioconcentration		Log Kow	11.7	Episuite™
2-Propenenitrile, polymer with 1,3-butadiene, 1cyano-1-methyl-4-oxo-4-	68683-29-4	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
[[2-(1-piperazinyl)ethyl]amino]butyl-terminated						
3,3'-Oxybis(ethyleneoxy)bis(propylamine)	4246-51-9	Experimental Bioconcentration		Log Kow	-1.25	
Siloxanes and Silicones, diMe, reaction products with silica	67762-90-7	Data not available or insufficient for classification	N/A	N/A	N/A	N/A
2,4,6-tris(dimethylaminomethyl) phenol	90-72-2	Experimental Bioconcentration		Log Kow	-0.66	830.7550 Part.Coef Shake Flask
Titanium dioxide	13463-67-7	Experimental BCF - Fish	42 days	Bioaccumulation factor	9.6	
2-piperazin-1-ylethylamine	140-31-8	Experimental Bioconcentration		Log Kow	0.3	

12.4. Mobility in soil

Material	Cas No.	Test type	Study Type	Test result	Protocol
Reaction products of fatty acids, C18-unsaturated, dimers and trimers with 3,3'-[oxybis(ethane-2,1diyloxy)]dipropan-1-amine	701-270-9	Modeled Mobility in Soil	Koc	3,780,000,000 l/kg	
3,3'-Oxybis(ethyleneoxy)bis(pr opylamine)	4246-51-9	Modeled Mobility in Soil	Koc	1 l/kg	ACD/Labs ChemSketch™

12.5. Results of the PBT and vPvB assessment
This material does not contain any substances that are assessed to be a PBT or vPvB

12.6. Endocrine disrupting properties
This material does not contain any substances that are assessed to be an endocrine disruptor for environmental effects

12.7. Other adverse effects
No information available.

13. Disposal considerations

13.1 Waste treatment methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations

Dispose of completely cured (or polymerized) material in a permitted industrial waste facility. As a disposal alternative, incinerate uncured product in a permitted waste incineration facility. Proper destruction may require the use of additional fuel during incineration processes. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

The coding of a waste stream is based on the application of the product by the consumer. Since this is out of the control of Gößl + Pfaff GmbH, no waste code(s) for products after use will be provided. Please refer to the European Waste Code (EWC - 2000/532/EC and amendments) to assign the correct waste code to your waste stream. Ensure national and/or regional regulations are complied with and always use a licensed waste contractor.

EU waste code (product as sold)
08 04 09* Waste adhesives and sealants containing organic solvents or other dangerous substances
20 01 27* Paint, inks, adhesives and resins containing dangerous substances

14. Transport information

	Ground Transport (ADR)	Air Transport (IATA)	Marine Transport (IMDG)
14.1 UN number or ID number	UN3263	UN3263	UN3263
14.2 UN proper shipping name	CORROSIVE SOLID, BASIC, ORGANIC, N.O.S. (3,3'-OXYBIS(ETHYLENE-OXY)BIS(PROPYLAMINE); TRIS(2,4,6-DIMETHYL-AMINOMONOMETHYL)-PHENOL)	CORROSIVE SOLID, BASIC, ORGANIC, N.O.S. (3,3'-OXYBIS(ETHYLENEOXY)BIS-(PROPYLAMINE); TRIS(2,4,6-DIMETHYLAMINOMONOM ETHYL)PHENOL)	CORROSIVE SOLID, BASIC, ORGANIC, N.O.S. (3,3'-OXYBIS(ETHYLENE-OXY)BIS(PROPYLAMINE); TRIS(2,4,6-DIMETHYL-AMINOMONOMETHYL)-PHENOL; FATTY ACIDS, C18-UNSATD, DIMERS, POLYMERS WITH 3,3(OXYBIS(2,1-ETHANEDIYLOXY))BIS-(1PROPANAMINE))
14.3 Transport hazard class(es)	8	8	8
14.4 Packing group	II	II	II
14.5 Environmental hazards	Environmentally Hazardous	Not applicable	Marine Pollutant
14.6 Special precautions for user	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.	Please refer to the other sections of the SDS for further information.
14.7 Marine Transport in bulk according to IMO instruments	No data available.	No data available.	No data available.
Control Temperature	No data available.	No data available.	No data available.

Safety Data Sheet
according to Regulation (EC) No. 1907/2006 (REACH)

GP 49 / Hardener (beige)

Date of issue/Date of revision: 05.01.2023 en / EU - Version 1.1

Emergency Temperature	No data available.	No data available.	No data available.
ADR Classification Code	C8	Not applicable.	Not applicable.
IMDG Segregation Code	Not applicable.	Not applicable.	18 - ALKALIS

Please contact the address or phone number listed on the first page of the SDS for additional information on the transport/shipment of the material by rail (RID) or inland waterways (ADN).

15. Regulatory information

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

Ingredient	CAS Nbr	Classification	Regulation
Titanium dioxide	13463-67-7	Grp. 2B: Possible human carc.	International Agency for Research on Cancer

Global inventory status
The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

DIRECTIVE 2012/18/EU
Seveso hazard categories, Annex 1, Part 1

Hazard Categories	Qualifying quantity (tonnes) for the application of	
	Lower-tier requirements	Upper-tier requirements
E1 Hazardous to the Aquatic environment	100	200

Seveso named dangerous substances, Annex 1, Part 2
None

Regulation (EU) No 649/2012
No chemicals listed

15.2. Chemical Safety Assessment
A chemical safety assessment has not been carried out for this mixture. Chemical safety assessments for the contained substances may have been carried out by the registrants of the substances in accordance with Regulation (EC) No 1907/2006, as amended.

16. Other information

H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H351i Suspected of causing cancer by inhalation.
H361d Suspected of damaging the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.

Changes in section(s): 1, 2, 3, 4, 7, 8, 9, 11, 12, 14

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

GP 49 / Hardener (beige)

Date of issue/Date of revision: 05.01.2023 en / EU - Version 1.1

Annex:

1. Title	
Substance identification	2,4,6-tris(dimethylaminomethyl)phenol; EC No. 202-013-9; CAS Nbr 90-72-2;
Exposure Scenario Name	Formulation
Lifecycle Stage	Formulation or re-packing
Contributing activities	PROC 08b -Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC 09 -Transfer of substance or mixture into small containers (dedicated filling line, including weighing) ERC 02 -Formulation into mixture
Processes, tasks and activities covered	Transfer of substances/mixtures into small containers e.g. tubes , bottles or small reservoirs. Transfers with dedicated controls, including loading, filling, dumping, bagging.
2. Operational conditions and risk management measures	
Operating Conditions	**Physical state:**Liquid. **General operating conditions:** Air exchange rate:: >= 3 times per hour; Indoor use; Partially open and partially closed process; Processing Temperature:: <= 40 degree Celsius; **Task: PROC08b**; Duration of exposure per day at workplace [for one worker]: 8 hours/day; **Task: PROC09**; Duration of exposure per day at workplace [for one worker]: <= 4 hour(s);
Risk management measures	Under the operational conditions described above the following risk management measures apply: **General risk management measures:** **Human health:** Local exhaust ventilation; Protective Gloves - Chemical resistant. Refer to Section 8 of the SDS for specific glove material.; **Environmental:** None needed;
Waste management measures	No use-specific waste management measures are required for this product. Refer to Section 13 of main SDS for disposal instructions:
3. Prediction of exposure	
Prediction of exposure	Human and environmental exposures are not expected to exceed the DNELs and PNECs when the identified risk management measures are adopted.
1. Title	
Substance identification	2,4,6-tris(dimethylaminomethyl)phenol; EC No. 202-013-9; CAS Nbr 90-72-2;
Exposure Scenario Name	Industrial Use of Adhesives
Lifecycle Stage	Use at industrial sites
Contributing activities	PROC 05 -Mixing or blending in batch processes PROC 08a -Transfer of substance or mixture (charging and discharging) at non- dedicated facilities PROC 10 -Roller application or brushing PROC 13 -Treatment of articles by dipping and pouring ERC 05 -Use at industrial site leading to inclusion into/onto article
Processes, tasks and activities covered	Application of product with a roller or brush. Application of product with applicator gun. Mixing operations (open systems). Transfers without dedicated controls, including loading, filling, dumping, bagging.

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH)

GP 49 / Hardener (beige)

Date of issue/Date of revision: 05.01.2023 en / EU - Version 1.1

2. Operational conditions and risk management measures	
Operating Conditions	**Physical state:**Liquid. **General operating conditions:** Air exchange rate:: >= 3 times per hour; Duration of exposure per day at workplace [for one worker]: <= 4 hour(s); Indoor use; Processing Temperature:: <= 40 degree Celsius; **Task: PROC05**; Duration of exposure per day at workplace [for one worker]: 8 hours/day;
Risk management measures	Under the operational conditions described above the following risk management measures apply: **General risk management measures:** **Human health:** Local exhaust ventilation; Protective Gloves - Chemical resistant. Refer to Section 8 of the SDS for specific glove material.; **Environmental:** None needed;
Waste management measures	Do not release to waterways or sewers;
3. Prediction of exposure	
Prediction of exposure	Human and environmental exposures are not expected to exceed the DNELs and PNECs when the identified risk management measures are adopted.
1. Title	
Substance identification	2,4,6-tris(dimethylaminomethyl)phenol; EC No. 202-013-9; CAS Nbr 90-72-2;
Exposure Scenario Name	Hand-mixing of preparations, e.g. plasters, resins, two-component adhesives.
Lifecycle Stage	Widespread use by professional workers
Contributing activities	PROC 10 -Roller application or brushing ERC 08c -Widespread use leading to inclusion into/onto article (indoor)
Processes, tasks and activities covered	Application of product.
2. Operational conditions and risk management measures	
Operating Conditions	**Physical state:**Liquid. **General operating conditions:** Duration of exposure per day at workplace [for one worker]: 8 hours/day; Indoor use; Processing Temperature:: <= 40 degree Celsius;
Risk management measures	Under the operational conditions described above the following risk management measures apply: **General risk management measures:** **Human health:** Local exhaust ventilation; Protective Gloves - Chemical resistant. Refer to Section 8 of the SDS for specific glove material.; **Environmental:** None needed;
Waste management measures	Do not release directly to waterways;
3. Prediction of exposure	
Prediction of exposure	Human and environmental exposures are not expected to exceed the DNELs and PNECs when the identified risk management measures are adopted.

The information of this MSDS is based on the present state of our knowledge and meets the requirements of EU and national laws. The user's working conditions however, are beyond our knowledge and control. The product is not to be used for purposes other than those specified under Section 1 without a written permission. It remains the responsibility of the user to ensure that the necessary steps are taken to meet the laws and regulations. Handling of the product may only be done by people above 18 years of age, who are satisfactorily informed of how to do the work, the hazardous properties and necessary safety precautions. The information given in this MSDS is to describe the product only in terms of health and safety requirements and should not, therefore, be construed as guaranteeing specific properties.