

MonoSeal

Pure Polyurea Waterproofing Membrane



independently CE certified
based on EN 1504-2
NB: 0958-23026 10

Description

MonoSeal is a liquid waterproofing membrane based on **pure cold applied polyurea with 3GTX technology**. It cures to form a seamless, durable and weather resistant waterproofing solution with an elongation of 1530% with excellent thermal stability,

Application

Water-proofing of flat and pitched roof structures, communal walkways, podium decks balconies and terrace roofs. Applicable to existing concrete, stone, roofing felt, brickwork and asbestos cement decks.

Certificates

- Fire EN 13501-5 B_{Roof} (t1) – Warrington Fire Gent
- Fire EN 13501-5 B_{Roof} (t4) – Warrington Fire Gent

Article number and packaging

23026-2	2,5 kg set
23026-10	10 kg set
23026-20	20 kg set

Properties

- Can be broadcasted with mineral grit or combined with an anti slip coating.
- Cold applied with a roller or brush, ideal for applications where open fire is prohibited.
- No reinforcement fleece needed because of 3GTX Technology.
- Seamless waterproofing technology, no risk for leaking joints.
- Can be applied on almost any substrate, sometimes combined with a primer.
- No aging based on UV light.
- Good chemical resistance.
- Does not contain plasticizers, therefore permanently elastic.
- Crack bridging with an elongation of 1530%.
- Vapour permeable (breathable)
- Walkable with high and low temperatures.
- Excellent thermal stability.
- Not sensitive to temperature and moisture.

Elongation	1530% (DIN 53504)
Tensile strength	4 MPa (DIN 53504)
Shore hardness	A65 ±5 (Din 53505, ASTM D2240)
Wear resistance Taber	0,3 gram (1000 rotations, 1000 gram weight, CS 18)
MU value	1000

Liquid product properties

Color	± RAL 7024, others on request
Density	1,26 mixed product
Volume solids	> 98%
VOC quality	40 gram /l
Shelf life and storage conditions	Must be stored between 15-25°. In unopened packaging for at least 12 months after production date.

Application information

Method	Roller, brush, trowel, squeegee	
Coverage	1,5 – 2,5 kg /m2 (deppends on substrate)	
Mixing ratio	600 gram A : 400 gram B	
Potlife	Approx. 25 min at 20°C	
Dilution	Preferably not. Maximum 5% only to be added once base and hardener have been mixed. Adding thinner will affect the final physical properties.	
Cleaning agent	Roca Cleaner R5518 (tools)	
Application temp.	Object	>5°C <30°C
	Product	>5°C <25°C
Curing time	20°C	1 hr
Walkable	20°C	>2 – 4 hrs
Recoat window	20°C	>12 hrs < 48 hrs
Chemical load	20°C	>7 days
Mechanical load	20°C	>3 days

The times given are approximates only and are affected by fluctuating environmental conditions such as temperature and relative humidity. Values are given at 2 kg /m2.

Comments during application

Two-component products may only be applied when the relative humidity is less than 85%.

The ambient and surface temperature must be at least -10°C, whereby the temperature of the surface to be treated must be 3° above dew point. Condensation on the base reduces adhesion. Consult the dew point table.

Mixing instructions

The product need to be at least 15°C during mixing. MonoSeal Detail should always be mixed mechanically, preferably with variable mixing equipent, provided with a suitable mixing tool.

Add the base component to the harder component. Mix both components intensively in such a way that a homogeneous, even looking mass has been created.



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Liquid synthetic materials for a sustainable future

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Then pour the mixed material into a clean bucket, from which it can be applied.

If a 2-component product is applied directly from the base can (mixing can), do not empty the can completely by placing the can upside down and dripping. There are still unmixed parts on the walls of the can, which then end up in the work and can cause uncured spots.

Curing is faster at higher temperatures and slower at lower temperatures. The application time also depends on the starting temperature of the product.

Surface

All substrates must be dry, clean and free of pores. For most substrates a primer is necessary. Please consult the primer table.

Bitumen felt

Caution is needed with new bitumen roofing. The adhesion to bitumen is limited to 0,6 N/mm² (surface crack). The adhesion on new felt could cause adhesion problems. The bitumen felt must be at least 6 months old and surface must be free of loose parts, grease and any other substances that can disturb the adhesion. Loose bitumen joints and parts must be secured.

Metal parts

Metal must be clean and free of grease. After that it must be sanded and treated with MonoPrime P-RW or MonoPrime UNI.

Mineral surfaces

The surface must be healthy, with minimum compression strength of 25 N/mm² and minimum bond strength of 1.5 N/mm².

All concrete surfaces must be at least 28 days of age. Monolithic floors and formed surfaces must be abrasive blasted or other preparation means to clean and profile.

Remove any cement-skin and concrete residues by grinding and/or sanding. Smooth and dense sub-floors (e.g. concrete) should be roughened by (dust-free) blasting. Unclean surfaces should be treated with a flame-gun and thereafter sanded. Always vacuum the floor to remove dust using an industrial vacuum cleaner.

Moisture content of surface: < 4% (parts by weight).

Substrates need to be pore free. Use a primer to prepare the surface in a proper way.

Various types of surfaces are available, some of which have individual pre-treatment requirements. If in doubt, contact your Prokol technician for more information.

System examples

Balconies, terraces, walkways (concrete)

- Surface preparation
- MonoPrime P-RW 0,15 – 0,30 kg /m²
- MonoSeal 2,00 – 2,20 kg /m²
- MonoSeal 0,50 – 1,00 kg /m²
 - Broadcast the wet layer with kiln dried sand
- ProFast Floor Coating 0,25 – 0,50 kg /m²

Flat roofing (bitumen)

- Surface preparation
- MonoSeal 1,00 – 1,50 kg /m²
- MonoSeal 1,00 – 1,50 kg /m²

Details, vertical parts, overlaps and joints (bitumen)

- Surface preparation
- MonoSeal Detail 1,50 – 2,00 kg /m²

Metal surfaces

- Surface preparation
- MonoPrime P-RW 0,10 – 0,15 kg /m²
- MonoSeal 1,50 – 2,00 kg /m²

Important

Projects and uses can vary greatly. Always contact your supplier if in doubt about a certain use, choice of material or surface treatment.

Projects and uses can vary greatly. Always contact your supplier if in doubt about a certain use, choice of material or surface treatment.

Due to its aromatic composition, MonoSeal will tend a bit into yellow after exposure to UV light. MonoSeal can be finished with a topcoating. If a top coating must be applied as a finishing layer, it must be suitable for the purpose and elasticity of the surface.

Legal notification

The information and, in particular, the recommendations concerning the application and final use of Prokol products is issued in good faith based on Prokol's current knowledge and experience of products that are correctly stored, handled and applied under normal conditions.

In practice, the differences in materials, substrates and local conditions are such that no guarantee can be given concerning the marketability or suitability for a certain objective, nor can any liability arise from any legal relationship based on this information



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nor from any written recommendations or other advice that is given.
The property rights of third parties must be respected.

Prokol guarantees that its products are free from manufacturing faults. Multi-component products are a finished product once the components have been mixed and processed. When mixed and processed correctly, the product will achieve the specifications given. Prokol can only guarantee the product when surfaces are processed and pre-treated correctly.

All orders are accepted under the current sales and delivery conditions.

Users must always refer to the most recent product safety information sheet and product information sheet for the product concerned. A copy of these sheets will be provided on request and is also available from www.prokol.nl.

The publication of this product information sheet makes all previous product information sheets for this product invalid.



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SAFETY DATA SHEET of:
MonoSeal base

Revision date: Friday, June 1, 2018

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

1.1 Product identifier:

MonoSeal base

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

/

Concentration in use: /

1.3 Details of the supplier of the safety data sheet:

PROKOL

Duizeldonksestraat 44

NL5705CA HELMOND (NEDERLAND)

Phone: 0031492547665 — Fax: 0031492547592

E-mail: jw.koolen@prokol.nl — Website: <http://www.prokol.nl/>

1.4 Emergency telephone number:

+313 02 74 88 88

2 SECTION 2: Hazards identification:

2.1 Classification of the substance or mixture:

Classification of the substance or mixture in accordance with regulation (EU) 1272/2008:

H317 Skin Sens. 1 H319 Eye Irrit. 2 H334 Resp. Sens. 1 H412 Aquatic Chronic 3

2.2 Label elements:

Pictograms:



Signal word:

Danger

Hazard statements:

H317 Skin Sens. 1:	May cause an allergic skin reaction.
H319 Eye Irrit. 2:	Causes serious eye irritation.
H334 Resp. Sens. 1:	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H412 Aquatic Chronic 3:	Harmful to aquatic life with long lasting effects.

Precautionary statements:

P261:	Avoid breathing dust/vapours/spray.
P280:	Wear protective gloves, protective clothing, eye protection, face protection.
P305+P351+P338:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313:	If skin irritation or rash occurs: Get medical advice/attention.
P342+P311:	If experiencing respiratory symptoms: Call a POISON CENTRE or doctor.
P362+P364:	Take off contaminated clothing and wash it before reuse.

Contains:

Aromatic polyisocyanate prepolymer 4-methyl-m-phenylene diisocyanate

2.3 Other hazards:

none

3 SECTION 3: Composition/information on ingredients:

Aromatic polyisocyanate prepolymer	> 30%	CAS number: 37273-56-6 EINECS: REACH Registration number: CLP Classification: H317 Skin Sens. 1 H319 Eye Irrit. 2
Hydrocarbons, C10-C12, isoalkanes	5% - 15%	CAS number: EINECS: 923-037-2 REACH Registration number: 01-2119471991-29 CLP Classification: EUH066 H226 Flam. Liq. 3 H304 Asp. Tox. 1 H411 Aquatic Chronic 2
4-methyl-m-phenylene diisocyanate	< 5%	CAS number: 584-84-9 EINECS: 209-544-5 REACH Registration number: 01-2119486974-18 CLP Classification: H315 Skin Irrit. 2 H317 Skin Sens. 1 H319 Eye Irrit. 2 H330 Acute tox. 2 H334 Resp. Sens. 1 H335 STOT SE 3 H351 Carc. 2 H412 Aquatic Chronic 3

For the full text of the H phrases mentioned in this section, see section 16.

4 SECTION 4: First aid measures:

4.1 Description of first aid measures:

Always ask medical advice as soon as possible should serious or continuous disturbances occur.

Skin contact:	remove contaminated clothing, rinse with plenty of water, if necessary seek medical attention.
Eye contact:	first prolonged rinsing with water (contact lenses to be removed if this is easily done) then take to physician.
Ingestion:	rinse mouth, do not induce vomiting, take to hospital immediately.
Inhalation:	let sit upright, fresh air, rest and take to hospital.

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

Skin contact:	redness, pain
Eye contact:	redness, pain, bad looking
Ingestion:	diarrhoea, headache, abdominal cramps, sleepiness, vomiting
Inhalation:	sore throat, cough, shortness of breath, headache

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

none

5 SECTION 5: Fire-fighting measures:

5.1 Extinguishing media:

CO₂, foam, powder, sprayed water

5.2 Special hazards arising from the substance or mixture:

none

5.3 Advice for firefighters:

Extinguishing agents to be avoided: none

6 SECTION 6: Accidental release measures:

6.1 Personal precautions, protective equipment and emergency procedures:

Do not walk into or touch spilled substances and avoid inhalation of fumes, smoke, dusts and vapours by staying up wind. Remove any contaminated clothing and used contaminated protective equipment and dispose of it safely.

6.2 Environmental precautions:

do not allow to flow into sewers or open water.

6.3 Methods and material for containment and cleaning up:

Contain released substance, store into suitable containers. If possible remove by using absorbent material.

6.4 Reference to other sections:

for further information check sections 8 & 13.

7 SECTION 7: Handling and storage:

7.1 Precautions for safe handling:

handle with care to avoid spillage.

7.2 Conditions for safe storage, including any incompatibilities:

keep in a sealed container in a closed, frost-free, ventilated room.

7.3 Specific end use(s):

/





8 SECTION 8: Exposure controls/personal protection:

8.1 Control parameters:

Listing of the hazardous ingredients in section 3, of which the TLV value is known

Hydrocarbons, C10-C12, isoalkanes 1,200 mg/m³, 4-methyl-m-phenylene diisocyanate 0.14 mg/m³

8.2 Exposure controls:

Inhalation protection:	if necessary, use an air-purifying face mask in case of respiratory hazards.	
Skin protection:	handling with Viton-gloves (EN 374). Breakthrough time: >480' Material thickness: 0,7 mm. Thoroughly check gloves before use. Take of the gloves properly without touching the outside with your bare hands. The manufacturer of the protective gloves has to be consulted about the suitability for a specific work station. Wash and dry your hands.	
Eye protection:	keep an eye-rinse bottle within reach. Tight-fitting safety goggles. Wear a face shield and protective suit in case of exceptional processing problems.	
Other protection:	impermeable clothing. The type of protective equipment depends on the concentration and amount of hazardous substances at the work station in question.	

9 SECTION 9: Physical and chemical properties:

9.1 Information on basic physical and chemical properties:

Melting point/melting range:	/
Boiling point/Boiling range:	158 °C — 176 °C
pH:	/
pH 1% diluted in water:	/
Vapour pressure/20°C,:	200 Pa
Vapour density:	not applicable
Relative density, 20°C:	1.0280 kg/l
Appearance/20°C:	liquid
Flash point:	65 °C
Flammability (solid, gas):	not applicable
Auto-ignition temperature:	200 °C
Upper flammability or explosive limit, (Vol %):	7.000 %

Lower flammability or explosive limit, (Vol %):	0.600 %
Explosive properties:	not applicable
Oxidising properties:	not applicable
Decomposition temperature:	/
Solubility in water:	not soluble
Partition coefficient: n-octanol/water:	not applicable
Odour:	characteristic
Odour threshold:	not applicable
Dynamic viscosity, 20°C:	1 800 mPa.s
Kinematic viscosity, 40°C:	1 751 mm ² /s
Evaporation rate (n-BuAc = 1):	0.160

9.2 Other information:

Volatile organic component (VOC):	5.00 %
Volatile organic component (VOC):	51.400 g/l
Sustained combustion test :	/

10 SECTION 10: Stability and reactivity:

10.1 Reactivity:

stable under normal conditions.

10.2 Chemical stability:

extremely high or low temperatures.

10.3 Possibility of hazardous reactions:

none

10.4 Conditions to avoid:

protect from sunlight and do not expose to temperatures exceeding + 50°C.

10.5 Incompatible materials:

acids, alkalines, oxidants, reductants

10.6 Hazardous decomposition products:

doesn't decompose with normal use

11 SECTION 11: Toxicological information:

11.1 Information on toxicological effects:

H317 Skin Sens. 1:	May cause an allergic skin reaction.
H319 Eye Irrit. 2:	Causes serious eye irritation.
H334 Resp. Sens. 1:	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Calculated acute toxicity, ATE oral:	/

**Calculated acute toxicity, ATE /
dermal:**

Aromatic polyisocyanate prepolymer	LD50 oral, rat: ≥ 5,000 mg/kg LD50 dermal, rabbit: ≥ 5,000 mg/kg LC50, Inhalation, rat, 4h: ≥ 50 mg/l
Hydrocarbons, C10-C12, isoalkanes	LD50 oral, rat: 2,000 mg/kg LD50 dermal, rabbit: ≥ 5,000 mg/kg LC50, Inhalation, rat, 4h: ≥ 50 mg/l
4-methyl-m-phenylene diisocyanate	LD50 oral, rat: ≥ 5,000 mg/kg LD50 dermal, rabbit: ≥ 5,000 mg/kg LC50, Inhalation, rat, 4h: 0.5 mg/l

12 SECTION 12: Ecological information:

12.1 Toxicity:

4-methyl-m-phenylene diisocyanate	LC50 (Fish): 164 mg/L (96h)
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12.2 Persistence and degradability:

No additional data available

12.3 Bioaccumulative potential:

No additional data available

12.4 Mobility in soil:

Water hazard class, WGK (AwSV): 1

Solubility in water: not soluble

12.5 Results of PBT and vPvB assessment:

No additional data available

12.6 Other adverse effects:

No additional data available

13 SECTION 13: Disposal considerations:

13.1 Waste treatment methods:

Draining into the sewers is not permitted. Removal should be carried out by licensed services. Possible restrictive regulations by local authority should always be adhered to.

14 SECTION 14: Transport information:

14.1 UN number:

not applicable

14.2 UN proper shipping name:

ADR, IMDG, ICAO/IATA not applicable

14.3 Transport hazard class(es):

Class(es): not applicable
Identification number of the hazard: not applicable

14.4 Packing group:

not applicable

14.5 Environmental hazards:

not dangerous to the environment

14.6 Special precautions for user:

Hazard characteristics: not applicable
Additional guidance: not applicable

15 SECTION 15: Regulatory information:

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

Water hazard class, WGK (AwSV): 1
Volatile organic component (VOC): 5.000 %
Volatile organic component (VOC): 51.400 g/l
Composition by regulation (EC) 648/2004: Aliphatic hydrocarbons 5% - 15%

15.2 Chemical Safety Assessment:

No data available

16 SECTION 16: Other information:

Legend to abbreviations used in the safety data sheet:

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
BCF: Bioconcentration factor
CAS: Chemical Abstracts Service
CLP: Classification, Labelling and Packaging of chemicals
EINECS: European Inventory of Existing Commercial chemical Substances
Nr.: number
PTB: persistent, toxic, bioaccumulative
TLV: Threshold Limit Value
vPvB: very persistent and very bioaccumulative substances
WGK: Water hazard class
WGK 1: slightly hazardous for water
WGK 2: hazardous for water
WGK 3: extremely hazardous for water

Legend to the H Phrases used in the safety data sheet:

EUH066: Repeated exposure may cause skin dryness or cracking. **H226 Flam. Liq. 3:** Flammable liquid and vapour. **H304 Asp. Tox. 1:** May be fatal if swallowed and enters airways. **H315 Skin Irrit. 2:** Causes skin irritation. **H317 Skin Sens. 1:** May cause an allergic skin reaction. **H319 Eye Irrit. 2:** Causes serious eye irritation. **H330 Acute tox. 2:** Fatal if inhaled. **H334 Resp. Sens. 1:** May cause allergy or asthma symptoms or breathing difficulties if inhaled. **H335 STOT SE 3:** May cause respiratory irritation. **H351 Carc. 2:** Suspected of causing cancer. **H411 Aquatic Chronic 2:** Toxic to aquatic life with long lasting effects. **H412 Aquatic Chronic 3:** Harmful to aquatic life with long lasting effects.

CLP Calculation method:

Calculation method

Reason of revision, changes of following items:

Section: 9.2

MSDS reference number:

ECM-109786,00

This safety information sheet has been compiled in accordance with annex II/A of the regulation (EU) No 2015/830. Classification has been calculated in accordance with European regulation 1272/2008 with their respective amendments. It has been compiled with the utmost care. We cannot, however, accept responsibility for damage, of any kind, that may be caused by using these data or the product concerned. To use this preparation for an experiment or a new application, the user must carry out a material suitability and safety study himself.



SAFETY DATA SHEET of: MonoSeal Hardener

Revision date: Monday, February 3, 2020

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

1.1 Product identifier:

MonoSeal Hardener

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

/

Concentration in use: /

1.3 Details of the supplier of the safety data sheet:

PROKOL

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E-mail: jw.koolen@prokol.nl — Website: <http://www.prokol.nl/>

1.4 Emergency telephone number:

+32 70 245 245

2 SECTION 2: Hazards identification:

2.1 Classification of the substance or mixture:

Classification of the substance or mixture in accordance with regulation (EU) 1272/2008:

EUH208 H411 Aquatic Chronic 2

2.2 Label elements:

Pictograms:



Signal word:

none

Hazard statements:

EUH208: Contains (N-Formylmorpholin). May produce an allergic reaction.

H411 Aquatic Chronic 2: Toxic to aquatic life with long lasting effects.

Precautionary statements:

P273: Avoid release to the environment.

P391: Collect spillage.

P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

Contains:

none

2.3 Other hazards:

none

3 SECTION 3: Composition/information on ingredients:

Barium sulphate	≤ 30 %	CAS number: 7727-43-7 EINECS: 231-784-4 REACH Registration number: Annex V CLP Classification:
Hydrocarbons, C10-C12, isoalkanes	≤ 5 %	CAS number: EINECS: 923-037-2 REACH Registration number: 01-2119471991-29 CLP Classification: EUH066 H226 Flam. Liq. 3 H304 Asp. Tox. 1 H411 Aquatic Chronic 2
2,6-dimethyl-4-Heptanone	≤ 3 %	CAS number: 108-83-8 EINECS: 203-620-1 REACH Registration number: 01-2119474441-41 CLP Classification: H226 Flam. Liq. 3 H335 STOT SE 3
2,4-diamino-3,5-diethyltoluene	≤ 3 %	CAS number: 68479-98-1 EINECS: 270-877-4 REACH Registration number: 01-2119486805-25 CLP Classification: H302 Acute tox. 4 H312 Acute tox. 4 H319 Eye Irrit. 2 H373 STOT RE 2 H400 Aquatic Acute 1 H410 Aquatic Chronic 1

Naphta heavy (high boiling point hydrogen treated)	≤ 0.8 %	CAS number: 64742-82-1 EINECS: 265-185-4 REACH Registration number: CLP Classification: EUH066 H226 Flam. Liq. 3 H304 Asp. Tox. 1 H336 STOT SE 3 H411 Aquatic Chronic 2
1,2-ethanediamine, polymer with aziridine, reaction product with 2-propenoic acid, 2-ethylhexyl ester, salt with oxirane	≤ 0.5 %	CAS number: 398475-96-2 EINECS: REACH Registration number: CLP Classification: H315 Skin Irrit. 2 H319 Eye Irrit. 2 H400 Aquatic Acute 1 H410 Aquatic Chronic 1
N-Formylmorpholin	≤ 0.3 %	CAS number: 4394-85-8 EINECS: 224-518-3 REACH Registration number: 01-2119987993-12 CLP Classification: H317 Skin Sens. 1B

For the full text of the H phrases mentioned in this section, see section 16.

4 SECTION 4: First aid measures:

4.1 Description of first aid measures:

Always ask medical advice as soon as possible should serious or continuous disturbances occur.

Skin contact:	remove contaminated clothing, rinse with plenty of water, if necessary seek medical attention.
Eye contact:	first prolonged rinsing with water (contact lenses to be removed if this is easily done) then take to physician.
Ingestion:	rinse mouth, do not induce vomiting, take to hospital immediately.
Inhalation:	let sit upright, fresh air, rest and take to hospital.

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

Skin contact:	none
Eye contact:	redness
Ingestion:	diarrhoea, headache, abdominal cramps, sleepiness, vomiting
Inhalation:	none

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

none

5 SECTION 5: Fire-fighting measures:

5.1 Extinguishing media:

CO2, foam, powder, sprayed water

5.2 Special hazards arising from the substance or mixture:

none

5.3 Advice for firefighters:

Extinguishing agents to be avoided: none

6 SECTION 6: Accidental release measures:

6.1 Personal precautions, protective equipment and emergency procedures:

Do not walk into or touch spilled substances and avoid inhalation of fumes, smoke, dusts and vapours by staying up wind. Remove any contaminated clothing and used contaminated protective equipment and dispose of it safely.

6.2 Environmental precautions:

do not allow to flow into sewers or open water.

6.3 Methods and material for containment and cleaning up:

Contain released substance, store into suitable containers. If possible remove by using absorbent material.

6.4 Reference to other sections:

for further information check sections 8 & 13.

7 SECTION 7: Handling and storage:

7.1 Precautions for safe handling:

handle with care to avoid spillage.

7.2 Conditions for safe storage, including any incompatibilities:

keep in a sealed container in a closed, frost-free, ventilated room.

7.3 Specific end use(s):

/


8 SECTION 8: Exposure controls/personal protection:



8.1 Control parameters:

Listing of the hazardous ingredients in section 3, of which the TLV value is known

Hydrocarbons, C10-C12, isoalkanes 1,200 mg/m³, Barium sulphate 5 mg/m³

8.2 Exposure controls:

Inhalation protection:	respiratory protection is not required. Use ABEK type gas masks in case of irritating exposure. If necessary, use with sufficient exhaust ventilation.	
Skin protection:	handling with nitril-gloves (EN 374). Breakthrough time: >480'. Material thickness: 0,35 mm. Thoroughly check gloves before use. Take of the gloves properly without touching the outside with your bare hands. The manufacturer of the protective gloves has to be consulted about the suitability for a specific work station. Wash and dry your hands.	

Eye protection:	keep an eye-rinse bottle within reach. Tight-fitting safety goggles. Wear a face shield and protective suit in case of exceptional processing problems.	
Other protection:	impermeable clothing. The type of protective equipment depends on the concentration and amount of hazardous substances at the work station in question.	

9 SECTION 9: Physical and chemical properties:

9.1 Information on basic physical and chemical properties:

Melting point/melting range:	/
Boiling point/Boiling range:	100 °C — 441 °C
pH:	/
pH 1% diluted in water:	/
Vapour pressure/20°C,:	200 Pa
Vapour density:	not applicable
Relative density, 20°C:	1.8185 kg/l
Appearance/20°C:	liquid
Flash point:	/
Flammability (solid, gas):	not applicable
Auto-ignition temperature:	200 °C
Upper flammability or explosive limit, (Vol %):	7.000 %
Lower flammability or explosive limit, (Vol %):	0.600 %
Explosive properties:	not applicable
Oxidising properties:	not applicable
Decomposition temperature:	/
Solubility in water:	not soluble
Partition coefficient: n-octanol/water:	not applicable
Odour:	characteristic
Odour threshold:	not applicable
Dynamic viscosity, 20°C:	920 mPa.s
Kinematic viscosity, 40°C:	506 mm ² /s
Evaporation rate (n-BuAc = 1):	0.300

9.2 Other information:

Volatile organic component (VOC):	5.20 %
Volatile organic component (VOC):	80.560 g/l
Sustained combustion test :	/

10 SECTION 10: Stability and reactivity:

10.1 Reactivity:

stable under normal conditions.

10.2 Chemical stability:

extremely high or low temperatures.

10.3 Possibility of hazardous reactions:

none

10.4 Conditions to avoid:

protect from sunlight and do not expose to temperatures exceeding + 50°C.

10.5 Incompatible materials:

acids, alkalines, oxidants, reductants

10.6 Hazardous decomposition products:

doesn't decompose with normal use

11 SECTION 11: Toxicological information:

11.1 Information on toxicological effects:

About the preparation itself: No additional data available

Calculated acute toxicity, ATE oral: /

Calculated acute toxicity, ATE dermal: /

Barium sulphate	LD50 oral, rat: ≥ 5 000 mg/kg LD50 dermal, rabbit: ≥ 5 000 mg/kg LC50, Inhalation, rat, 4h: ≥ 50 mg/l
Hydrocarbons, C10-C12, isoalkanes	LD50 oral, rat: 2 000 mg/kg LD50 dermal, rabbit: ≥ 5 000 mg/kg LC50, Inhalation, rat, 4h: ≥ 50 mg/l
2,6-dimethyl-4-Heptanone	LD50 oral, rat: ≥ 5 000 mg/kg LD50 dermal, rabbit: ≥ 5 000 mg/kg LC50, Inhalation, rat, 4h: ≥ 50 mg/l
2,4-diamino-3,5-diethyltoluene	LD50 oral, rat: 738 mg/kg LD50 dermal, rabbit: 1 100 mg/kg LC50, Inhalation, rat, 4h: ≥ 50 mg/l
Naphta heavy (high boiling point hydrogen treated)	LD50 oral, rat: ≥ 5 000 mg/kg LD50 dermal, rabbit: ≥ 5 000 mg/kg LC50, Inhalation, rat, 4h: ≥ 50 mg/l
1,2-ethanediamine, polymer with aziridine, reaction product with 2-propenoic acid, 2-ethylhexyl ester, salt with oxirane	LD50 oral, rat: ≥ 5 000 mg/kg LD50 dermal, rabbit: ≥ 5 000 mg/kg LC50, Inhalation, rat, 4h: ≥ 50 mg/l
N-Formylmorpholin	LD50 oral, rat: ≥ 5 000 mg/kg LD50 dermal, rabbit: ≥ 5 000 mg/kg LC50, Inhalation, rat, 4h: ≥ 50 mg/l

12 SECTION 12: Ecological information:

12.1 Toxicity:

2,4-diamino-3,5-diethyltoluene	LC50 (Fish): 200 mg/L (48h) EC50 (Daphnia): 0,5 mg/L (48h) EC50 (soil microorganisms): > 170 mg/L (24h)
N-Formylmorpholin	LC50 (Fish): > 500 mg/l 96h

12.2 Persistence and degradability:

No additional data available

12.3 Bioaccumulative potential:

No additional data available

12.4 Mobility in soil:

Water hazard class, WGK (AwSV): 2
Solubility in water: not soluble

12.5 Results of PBT and vPvB assessment:

No additional data available

12.6 Other adverse effects:

No additional data available

13 SECTION 13: Disposal considerations:

13.1 Waste treatment methods:

Draining into the sewers is not permitted. Removal should be carried out by licensed services. Possible restrictive regulations by local authority should always be adhered to.

14 SECTION 14: Transport information:

14.1 UN number:

3082

14.2 UN proper shipping name:

UN 3082 Environmentally hazardous substance, liquid, n.o.s. (mixture with 2,4-diamino-3,5-diethyltoluene; Hydrocarbons, C10-C12, isoalkanes) , 9, III, (E)

14.3 Transport hazard class(es):

Class(es): 9
Identification number of the hazard: 90

14.4 Packing group:

III

14.5 Environmental hazards:

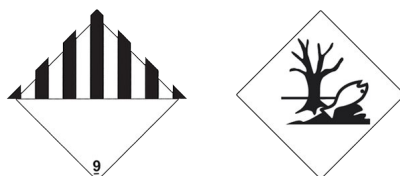
environmentally hazardous

14.6 Special precautions for user:

Hazard characteristics:

Risk to the aquatic environment and the sewerage system.

Additional guidance:



15 SECTION 15: Regulatory information:

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

Water hazard class, WGK (AwSV): 2

Volatile organic component (VOC): 5.203 %

Volatile organic component (VOC): 80.560 g/l

Composition by regulation (EC 648/2004): Aliphatic hydrocarbons 5% - 15%, Zeolites < 5%

15.2 Chemical Safety Assessment:

No data available

16 SECTION 16: Other information:

Legend to abbreviations used in the safety data sheet:

ADR:	The European Agreement concerning the International Carriage of Dangerous Goods by Road
BCF:	Bioconcentration factor
CAS:	Chemical Abstracts Service
CLP:	Classification, Labelling and Packaging of chemicals
EINECS:	European INventory of Existing Commercial chemical Substances
Nr.:	number
PTB:	persistent, toxic, bioaccumulative
TLV:	Threshold Limit Value
vPvB:	very persistent and very bioaccumulative substances
WGK:	Water hazard class
WGK 1:	slightly hazardous for water
WGK 2:	hazardous for water
WGK 3:	extremely hazardous for water

Legend to the H Phrases used in the safety data sheet:

EUH066: Repeated exposure may cause skin dryness or cracking. **EUH208:** Contains (N-Formylmorpholin). May produce an allergic reaction. **H226 Flam. Liq. 3:** Flammable liquid and vapour. **H302 Acute tox. 4:** Harmful if swallowed. **H304 Asp. Tox. 1:** May be fatal if swallowed and enters airways. **H312 Acute tox. 4:** Harmful in

contact with skin. **H315 Skin Irrit. 2:** Causes skin irritation. **H317 Skin Sens. 1B:** May cause an allergic skin reaction. **H319 Eye Irrit. 2:** Causes serious eye irritation. **H335 STOT SE 3:** May cause respiratory irritation. **H336 STOT SE 3:** May cause drowsiness or dizziness. **H373 STOT RE 2:** May cause damage to organs through prolonged or repeated exposure. **H400 Aquatic Acute 1:** Very toxic to aquatic life. **H410 Aquatic Chronic 1:** Very toxic to aquatic life with long lasting effects. **H411 Aquatic Chronic 2:** Toxic to aquatic life with long lasting effects.

CLP Calculation method:

Calculation method

Reason of revision, changes of following items:

Sections: 2.1, 2.2, 3, 9.1, 9.2, 14.2, 15.1

MSDS reference number:

ECM-110832,00

This safety information sheet has been compiled in accordance with annex II/A of the regulation (EU) No 2015/830. Classification has been calculated in accordance with European regulation 1272/2008 with their respective amendments. It has been compiled with the utmost care. We cannot, however, accept responsibility for damage, of any kind, that may be caused by using these data or the product concerned. To use this preparation for an experiment or a new application, the user must carry out a material suitability and safety study himself.