



23026-H - MonoSeal - Hardener

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

- 1.1 Product identifier:** 23026-H - MonoSeal - Hardener
Other means of identification:
Not relevant
- 1.2 Relevant identified uses of the substance or mixture and uses advised against:**
Relevant uses (Professional users): Hardener for Roof Coatings
For Professional users only.
Uses advised against: All uses not specified in this section or in section 7.3
- 1.3 Details of the supplier of the safety data sheet:**
Prokol Protective Coatings
Duizeldonksestraat 44
5705 CA Helmond - Noord-Brabant - Nederland
Phone: +31 (0) 85 78 200 20
sds@prokol.nl
www.prokol.com
- 1.4 Emergency telephone number:** +31 (0) 85 78 200 20 Mon - Fri 8am - 4.45pm

SECTION 2: HAZARDS IDENTIFICATION **

- 2.1 Classification of the substance or mixture:**
CLP Regulation (EC) No 1272/2008:
Classification of this product has been carried out in accordance with CLP Regulation (EC) No 1272/2008.
Aquatic Chronic 2: Hazardous to the aquatic environment, long-term hazard, Category 2, H411
Eye Irrit. 2: Eye irritation, Category 2, H319
Skin Sens. 1: Sensitisation, skin, Category 1, H317
- 2.2 Label elements:**
CLP Regulation (EC) No 1272/2008:
Warning
-  
- Hazard statements:**
Aquatic Chronic 2: H411 - Toxic to aquatic life with long lasting effects.
Eye Irrit. 2: H319 - Causes serious eye irritation.
Skin Sens. 1: H317 - May cause an allergic skin reaction.
- Precautionary statements:**
P261: Avoid breathing vapours
P264: Wash thoroughly after handling.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/respiratory protection/eye protection/protective footwear.
P302+P352: IF ON SKIN: Wash with plenty of water.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P391: Collect spillage.
P501: Dispose of contents/container in accordance with regulations on hazardous waste or packaging and packaging waste respectively.
- Supplementary information:**
Contains 4-morpholinecarbaldehyde.
EUH211: Warning! Hazardous respirable droplets may be formed when sprayed. Do not breathe spray or mist.
- Substances that contribute to the classification**
4,4'-methylenebis[N-sec-butylaniline]
- UFI:** G0Q0-C08H-700M-1W9R
- 2.3 Other hazards:**

** Changes with regards to the previous version

- CONTINUED ON NEXT PAGE -

23026-H - MonoSeal - Hardener

SECTION 2: HAZARDS IDENTIFICATION ** (continued)

Product does not meet PBT/vPvB criteria
Endocrine-disrupting properties: The product does not meet the criteria.

** Changes with regards to the previous version

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS **

3.1 Substance:

Not relevant

3.2 Mixture:

Chemical description: Formulated polyamines

Components:

In accordance with Annex II of Regulation (EC) No 1907/2006 (point 3), the product contains:

Identification	Chemical name/Classification	Concentration
CAS: 5285-60-9 EC: 226-122-6 Index: Not relevant REACH:01-2119552434-41-XXXX	4,4'-methylenebis[N-sec-butylaniline]⁽¹⁾ Self-classified Regulation 1272/2008 Acute Tox. 4: H302; Aquatic Acute 1: H400; Aquatic Chronic 1: H410; Skin Sens. 1: H317; STOT RE 2: H373 - Warning	5 - <10%
CAS: 102-60-3 EC: 203-041-4 Index: Not relevant REACH:01-2119552434-41-XXXX	1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol⁽¹⁾ Self-classified Regulation 1272/2008 Eye Irrit. 2: H319 - Warning	5 - <10%
CAS: 7789-75-5 EC: 232-188-7 Index: Not relevant REACH:01-2119491248-30-XXXX	Calcium fluoride⁽²⁾ Not classified Regulation 1272/2008	5 - <10%
CAS: 3470-98-2 EC: 222-437-8 Index: Not relevant REACH:01-2120062728-48-XXXX	1-butylpyrrolidin-2-one⁽¹⁾ Self-classified Regulation 1272/2008 Acute Tox. 4: H302; Eye Irrit. 2: H319; Skin Irrit. 2: H315 - Warning	2.5 - <5%
CAS: 398475-96-2 EC: Not relevant Index: Not relevant REACH:Not relevant	1,2-Ethandiamin, Polymer with Aziridin, Rp. with Ethylhexylacrylat, Salt with PEGPPG-monobutylether. Phosphat⁽¹⁾ Self-classified Regulation 1272/2008 Aquatic Chronic 2: H411; Eye Irrit. 2: H319 - Warning	2.5 - <5%
CAS: 68479-98-1 EC: 270-877-4 Index: 612-130-00-0 REACH:01-2119486805-25-XXXX	Diethylmethylbenzenediamine⁽¹⁾ ATP CLP00 Regulation 1272/2008 Acute Tox. 4: H302+H312; Aquatic Acute 1: H400; Aquatic Chronic 1: H410; Eye Irrit. 2: H319; STOT RE 2: H373 - Warning	1 - <2.5%
CAS: 1308-38-9 EC: 215-160-9 Index: Not relevant REACH:01-2119433951-39-XXXX	Chromium (III) oxide⁽²⁾ Not classified Regulation 1272/2008	1 - <2.5%
CAS: 4394-85-8 EC: 224-518-3 Index: Not relevant REACH:01-2119987993-12-XXXX	4-morpholinecarbaldehyde⁽¹⁾ Self-classified Regulation 1272/2008 Skin Sens. 1B: H317 - Warning	<1%
CAS: 107-21-1 EC: 203-473-3 Index: 603-027-00-1 REACH:01-2119456816-28-XXXX	Ethanediol⁽²⁾ Self-classified Regulation 1272/2008 Acute Tox. 4: H302; STOT RE 2: H373 - Warning	<1%

⁽¹⁾ Substances presenting a health or environmental hazard which meet criteria laid down in Regulation (EU) No. 2020/878

⁽²⁾ Substance with a Union workplace exposure limit

To obtain more information on the hazards of the substances consult sections 11, 12 and 16.

Acute toxicity estimate for the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008 or as determined in accordance with Annex I to that Regulation:

** Changes with regards to the previous version

- CONTINUED ON NEXT PAGE -

23026-H - MonoSeal - Hardener

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS ** (continued)

Identification	Acute toxicity		Genus
Diethylmethylbenzenediamine CAS: 68479-98-1 EC: 270-877-4	LD50 oral	598 mg/kg	Rat
	LD50 dermal	1100 mg/kg	Rat
	LC50 inhalation vapour	Not relevant	
4,4'-methylenebis[N-sec-butylaniline] CAS: 5285-60-9 EC: 226-122-6	LD50 oral	500 mg/kg	
	LD50 dermal	Not relevant	
	LC50 inhalation vapour	Not relevant	
1-butylpyrrolidin-2-one CAS: 3470-98-2 EC: 222-437-8	LD50 oral	500 mg/kg	
	LD50 dermal	Not relevant	
	LC50 inhalation vapour	Not relevant	

** Changes with regards to the previous version

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures:

The symptoms resulting from intoxication can appear after exposure, therefore, in case of doubt, seek medical attention for direct exposure to the chemical product or persistent discomfort, showing the SDS of this product.

By inhalation:

This product is not classified as hazardous through inhalation. However, in case of intoxication symptoms it is recommended to remove the person affected from the area of exposure, provide clean air and keep at rest. Request medical attention if symptoms persist.

By skin contact:

May cause an allergic skin reaction. In case of contact it is recommended to clean the affected area thoroughly with water and neutral soap. In case of changes on the skin (stinging, redness, rashes, blisters), seek medical advice with this Safety Data Sheet

By eye contact:

Rinse eyes thoroughly with lukewarm water for at least 15 minutes. Do not allow the person affected to rub or close their eyes. If the injured person uses contact lenses, these should be removed unless they are stuck to the eyes, in which case this could cause further damage. In all cases, after cleaning, a doctor should be consulted as quickly as possible with the SDS of the product.

By ingestion/aspiration:

Do not induce vomiting, but if it does happen keep the head down to avoid aspiration. Keep the person affected at rest. Rinse out the mouth and throat, as they may have been affected during ingestion.

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

Acute and delayed effects are indicated in sections 2 and 11.

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

Not relevant

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media:

Suitable extinguishing media:

Product is non-flammable under normal conditions of storage, handling and use. In the case of combustion as a result of improper handling, storage or use preferably use polyvalent powder extinguishers (ABC powder), in accordance with the Regulation on fire protection systems.

Unsuitable extinguishing media:

Non-applicable

5.2 Special hazards arising from the substance or mixture:

As a result of combustion or thermal decomposition reactive sub-products are created that can become highly toxic and, consequently, can present a serious health risk.

5.3 Advice for firefighters:

Depending on the magnitude of the fire it may be necessary to use full protective clothing and Self Contained Breathing Apparatus. Minimum emergency facilities and equipment should be available (fire blankets, portable first aid kit,...)

- CONTINUED ON NEXT PAGE -

23026-H - MonoSeal - Hardener

SECTION 5: FIREFIGHTING MEASURES (continued)

Additional provisions:

Act in accordance with the Internal Emergency Plan and the Information Sheets on actions to take after an accident or other emergencies. Eliminate all sources of ignition. In case of fire, cool the storage containers and tanks for products susceptible to combustion, explosion or BLEVE as a result of high temperatures. Avoid spillage of the products used to extinguish the fire into an aqueous medium.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

For non-emergency personnel:

Isolate leaks provided that there is no additional risk for the people performing this task. Personal protection equipment must be used against potential contact with the spilled product (See section 8). Evacuate the area and keep out those who do not have protection.

For emergency responders:

Wear protective equipment. Keep unprotected persons away. See section 8.

6.2 Environmental precautions:

Avoid at all cost any type of spillage into an aqueous medium. Contain the product absorbed appropriately in hermetically sealed containers. Notify the relevant authority in case of exposure to the general public or the environment.

6.3 Methods and material for containment and cleaning up:

It is recommended:

Prevent the entrance of product in drains, sewers or watercourses. Absorb the spill using sand or inert absorbent and move it to a safe place. Do not absorb in sawdust or other combustible absorbents. Collect the product in appropriate containers and manage it according to current legislation.

Spillages in water or sea:

Small spillages:

Contain spillage using barriers or similar equipment. Use suitable absorbents for collection and treat the waste in accordance with current regulations.

Large spillages:

If possible, contain spillage in open water using barriers or similar equipment. If this is not possible, try to control its spread and collect the product with suitable mechanical means. Always consult experts before using dispersants and make sure you have the necessary approvals if they are to be used. Treat the waste according to current regulations.

6.4 Reference to other sections:

See sections 8 and 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling:

A.-General precautions for safe use

Comply with the current legislation concerning the prevention of industrial risks with regards manually handling weights. Maintain order, cleanliness and dispose of using safe methods (section 6).

B.-Technical recommendations for the prevention of fires and explosions

Product is non-flammable under normal conditions of storage, handling and use. It is recommended to transfer at slow speeds to avoid the generation of electrostatic charges that can affect flammable products. Consult section 10 for information on conditions and materials that should be avoided.

C.-Technical recommendations on general occupational hygiene

Do not eat or drink during the process, washing hands afterwards with suitable cleaning products.

D.-Technical recommendations to prevent environmental risks

Due to the danger of this product for the environment it is recommended to use it within an area containing contamination control barriers in case of spillage, as well as having absorbent material in close proximity.

7.2 Conditions for safe storage, including any incompatibilities:

A.- Specific storage requirements

Minimum Temp.: 5 °C

- CONTINUED ON NEXT PAGE -

23026-H - MonoSeal - Hardener

SECTION 7: HANDLING AND STORAGE (continued)

Maximum Temp.: 30 °C
Maximum time: 12 Months

B.-General conditions for storage

Avoid sources of heat, radiation, static electricity and contact with food. For additional information see subsection 10.5

7.3 Specific end use(s):

Except for the instructions already specified it is not necessary to provide any special recommendation regarding the uses of this product.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters:

Substances whose occupational exposure limits have to be assessed in the workplace:

EH40/2005 Workplace exposure limits, fourth edition, published 2020:

Identification	Occupational exposure limits		
	WEL (8h)	WEL (15 min)	
Chromium (III) oxide CAS: 1308-38-9 EC: 215-160-9			0.5 mg/m ³
Ethanediol ⁽¹⁾ CAS: 107-21-1 EC: 203-473-3	WEL (8h)	20 ppm	52 mg/m ³
	WEL (15 min)	40 ppm	104 mg/m ³

⁽¹⁾ Skin

DNEL (Workers):

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol CAS: 102-60-3 EC: 203-041-4	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	4.2 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	29.4 mg/m ³	Not relevant
Calcium fluoride CAS: 7789-75-5 EC: 232-188-7	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	Not relevant	Not relevant
	Inhalation	Not relevant	Not relevant	5 mg/m ³	Not relevant
1-butylpyrrolidin-2-one CAS: 3470-98-2 EC: 222-437-8	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	10 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	24.1 mg/m ³	Not relevant
Diethylmethylbenzenediamine CAS: 68479-98-1 EC: 270-877-4	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	1 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	0.13 mg/m ³	Not relevant
4-morpholinecarbaldehyde CAS: 4394-85-8 EC: 224-518-3	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	11.7 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	50.3 mg/m ³	13.3 mg/m ³
Ethanediol CAS: 107-21-1 EC: 203-473-3	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	106 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	Not relevant	35 mg/m ³

DNEL (General population):

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol CAS: 102-60-3 EC: 203-041-4	Oral	Not relevant	Not relevant	2.5 mg/kg	Not relevant
	Dermal	Not relevant	Not relevant	2.5 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	8.7 mg/m ³	Not relevant
Calcium fluoride CAS: 7789-75-5 EC: 232-188-7	Oral	Not relevant	Not relevant	0.02 mg/kg	Not relevant
	Dermal	Not relevant	Not relevant	Not relevant	Not relevant
	Inhalation	Not relevant	Not relevant	1 mg/m ³	Not relevant
1-butylpyrrolidin-2-one CAS: 3470-98-2 EC: 222-437-8	Oral	4 mg/kg	Not relevant	4 mg/kg	Not relevant
	Dermal	Not relevant	Not relevant	5 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	4.29 mg/m ³	Not relevant

- CONTINUED ON NEXT PAGE -

23026-H - MonoSeal - Hardener

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)

Identification		Short exposure		Long exposure	
		Systemic	Local	Systemic	Local
Diethylmethylbenzenediamine CAS: 68479-98-1 EC: 270-877-4	Oral	Not relevant	Not relevant	0.1 mg/kg	Not relevant
	Dermal	Not relevant	Not relevant	1 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	0.1 mg/m ³	Not relevant
4-morpholinecarbaldehyde CAS: 4394-85-8 EC: 224-518-3	Oral	Not relevant	Not relevant	4.17 mg/kg	Not relevant
	Dermal	Not relevant	Not relevant	4.17 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	8.93 mg/m ³	13.3 mg/m ³
Ethanediol CAS: 107-21-1 EC: 203-473-3	Oral	Not relevant	Not relevant	Not relevant	Not relevant
	Dermal	Not relevant	Not relevant	53 mg/kg	Not relevant
	Inhalation	Not relevant	Not relevant	Not relevant	7 mg/m ³

PNEC:


Identification				
1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol CAS: 102-60-3 EC: 203-041-4	STP	70 mg/L	Fresh water	0.085 mg/L
	Soil	0.018 mg/kg	Marine water	0.009 mg/L
	Intermittent	1.51 mg/L	Sediment (Fresh water)	0.193 mg/kg
	Oral	Not relevant	Sediment (Marine water)	0.019 mg/kg
Calcium fluoride CAS: 7789-75-5 EC: 232-188-7	STP	104.75 mg/L	Fresh water	0.37 mg/L
	Soil	21.8 mg/kg	Marine water	0.022 mg/L
	Intermittent	0.17 mg/L	Sediment (Fresh water)	Not relevant
	Oral	Not relevant	Sediment (Marine water)	Not relevant
1-butylpyrrolidin-2-one CAS: 3470-98-2 EC: 222-437-8	STP	30.62 mg/L	Fresh water	4 mg/L
	Soil	1.68 mg/kg	Marine water	0.4 mg/L
	Intermittent	1 mg/L	Sediment (Fresh water)	20.168 mg/kg
	Oral	Not relevant	Sediment (Marine water)	2.017 mg/kg
Diethylmethylbenzenediamine CAS: 68479-98-1 EC: 270-877-4	STP	17 mg/L	Fresh water	0.001 mg/L
	Soil	0.0056 mg/kg	Marine water	0 mg/L
	Intermittent	0.005 mg/L	Sediment (Fresh water)	0.029 mg/kg
	Oral	0.002 g/kg	Sediment (Marine water)	0.003 mg/kg
4-morpholinecarbaldehyde CAS: 4394-85-8 EC: 224-518-3	STP	2000 mg/L	Fresh water	0.5 mg/L
	Soil	0.244 mg/kg	Marine water	0.05 mg/L
	Intermittent	5 mg/L	Sediment (Fresh water)	2.69 mg/kg
	Oral	Not relevant	Sediment (Marine water)	0.269 mg/kg
Ethanediol CAS: 107-21-1 EC: 203-473-3	STP	199.5 mg/L	Fresh water	10 mg/L
	Soil	1.53 mg/kg	Marine water	1 mg/L
	Intermittent	10 mg/L	Sediment (Fresh water)	37 mg/kg
	Oral	Not relevant	Sediment (Marine water)	3.7 mg/kg

8.2 Exposure controls:

A.- Individual protection measures, such as personal protective equipment

As a preventative measure it is recommended to use basic Personal Protective Equipment, with the corresponding <<CE marking>> in accordance with Regulation (EU) 2016/425. For more information on Personal Protective Equipment (storage, use, cleaning, maintenance, class of protection,...) consult the information leaflet provided by the manufacturer. For more information see subsection 7.1. All information contained herein is a recommendation which needs some specification from the labour risk prevention services as it is not known whether the company has additional measures at its disposal.

B.- Respiratory protection



Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory respiratory tract protection	Filter mask for gases and vapours (Filter type: K)	 CAT III	EN 405:2002+A1:2010	Replace when there is a taste or smell of the contaminant inside the face mask. If the contaminant comes with warnings it is recommended to use isolation equipment.

C.- Specific protection for the hands

- CONTINUED ON NEXT PAGE -



23026-H - MonoSeal - Hardener

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION (continued)



Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory hand protection	Protective gloves against minor risks			Replace gloves in case of any sign of damage. For prolonged periods of exposure to the product for professional users/industrials, we recommend using CE III gloves in line with standards EN ISO 21420:2020 and EN ISO 374-1:2016+A1:2018

As the product is a mixture of several substances, the resistance of the glove material can not be calculated in advance with total reliability and has therefore to be checked prior to the application.

D.-Eye and face protection



Pictogram	PPE	Labelling	CEN Standard	Remarks
 Mandatory face protection	Panoramic glasses against splash/projections.		EN 166:2002 EN ISO 4007:2018	Clean daily and disinfect periodically according to the manufacturer 's instructions. Use if there is a risk of splashing.

E.- Body protection

Pictogram	PPE	Labelling	CEN Standard	Remarks
	Work clothing			Replace before any evidence of deterioration. For periods of prolonged exposure to the product for professional/industrial users CE III is recommended, in accordance with the regulations in EN ISO 6529:2013, EN ISO 6530:2005, EN ISO 13688:2013, EN 464:1994.
	Anti-slip work shoes		EN ISO 20347:2022	Replace before any evidence of deterioration. For periods of prolonged exposure to the product for professional/industrial users CE III is recommended, in accordance with the regulations in EN ISO 20345:2022 y EN 13832-1:2019

F.- Additional emergency measures

It is advised to implement additional emergency equipments in workplaces that are particularly exposed to the product or in situations where risk assessments highlight the necessity of such equipments.

Emergency measure	Standards	Emergency measure	Standards
 Emergency shower	ANSI Z358-1 ISO 3864-1:2011, ISO 3864-4:2011	 Eyewash stations	DIN 12 899 ISO 3864-1:2011, ISO 3864-4:2011

Environmental exposure controls:

To comply with environmental protection regulations, it is recommended to prevent any spillage of the product and its container. For more detailed information, please refer to subsection 7.1.D.

Volatile organic compounds:

With regard to Directive 2010/75/EU, this product has the following characteristics:

V.O.C. (Supply):	4.14 % weight
V.O.C. density at 20 °C:	83.96 kg/m ³ (83.96 g/L)
Average carbon number:	9.06
Average molecular weight:	138.64 g/mol

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties:

For complete information see the product datasheet.

Appearance:

Physical state at 20 °C:	Liquid
Appearance:	Characteristic

*Not relevant due to the nature of the product, not providing information property of its hazards.

- CONTINUED ON NEXT PAGE -

23026-H - MonoSeal - Hardener

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

Colour:	Characteristic
Odour:	Characteristic
Odour threshold:	Not relevant *
Volatility:	
Boiling point at atmospheric pressure:	227 °C
Vapour pressure at 20 °C:	53 Pa
Vapour pressure at 50 °C:	344.58 Pa (0.34 kPa)
Evaporation rate at 20 °C:	Not relevant *
Product description:	
Density at 20 °C:	2027.4 kg/m ³
Relative density at 20 °C:	2.027
Dynamic viscosity at 20 °C:	Not relevant *
Kinematic viscosity at 20 °C:	Not relevant *
Kinematic viscosity at 40 °C:	Not relevant *
Concentration:	Not relevant *
pH:	Not relevant *
Vapour density at 20 °C:	Not relevant *
Partition coefficient n-octanol/water 20 °C:	Not relevant *
Solubility in water at 20 °C:	Not relevant *
Solubility properties:	Not relevant *
Decomposition temperature:	Not relevant *
Melting point/freezing point:	Not relevant *
Flammability:	
Flash Point:	Non Flammable (>60 °C)
Flammability (solid, gas):	Not relevant *
Autoignition temperature:	250 °C
Lower flammability limit:	Not relevant *
Upper flammability limit:	Not relevant *
Particle characteristics:	
Median equivalent diameter:	Not relevant *

9.2 Other information:

Information with regard to physical hazard classes:

Explosive properties:	Not relevant *
Oxidising properties:	Not relevant *
Corrosive to metals:	Not relevant *
Heat of combustion:	Not relevant *
Aerosols-total percentage (by mass) of flammable components:	Not relevant *

Other safety characteristics:

Surface tension at 20 °C:	Not relevant *
Refraction index:	Not relevant *

*Not relevant due to the nature of the product, not providing information property of its hazards.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity:

- CONTINUED ON NEXT PAGE -

23026-H - MonoSeal - Hardener

SECTION 10: STABILITY AND REACTIVITY (continued)

No hazardous reactions are expected because the product is stable under recommended storage conditions. See section 7 from Safety Data Sheet.

10.2 Chemical stability:

Chemically stable under the indicated conditions of storage, handling and use.

10.3 Possibility of hazardous reactions:

Under the specified conditions, hazardous reactions that lead to excessive temperatures or pressure are not expected.

10.4 Conditions to avoid:

Applicable for handling and storage at room temperature:

Shock and friction	Contact with air	Increase in temperature	Sunlight	Humidity
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

10.5 Incompatible materials:

Acids	Water	Oxidising materials	Combustible materials	Others
Avoid strong acids	Not applicable	Not applicable	Not applicable	Avoid alkalis or strong bases

10.6 Hazardous decomposition products:

See subsection 10.3, 10.4 and 10.5 to find out the specific decomposition products. Depending on the decomposition conditions, complex mixtures of chemical substances can be released: carbon dioxide (CO₂), carbon monoxide and other organic compounds.

SECTION 11: TOXICOLOGICAL INFORMATION **

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008:

The experimental information related to the toxicological properties of the product itself is not available

Contains glycols. It is recommended not to breathe the vapours for prolonged periods of time due to the possibility of effects that are hazardous to the health .

Dangerous health implications:

In case of exposure that is repetitive, prolonged or at concentrations higher than the recommended occupational exposure limits, adverse effects on health may result, depending on the means of exposure:

A- Ingestion (acute effect):

- Acute toxicity: Based on available data, the classification criteria are not met, however, it contains substances classified as dangerous for consumption. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met. However, it does contain substances classified as hazardous for this effect. For more information see section 3.

B- Inhalation (acute effect):

- Acute toxicity : Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for inhalation. For more information see section 3.
- Corrosivity/Irritability: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

C- Contact with the skin and the eyes (acute effect):

- Contact with the skin: Based on available data, the classification criteria are not met. However, it contains substances classified as hazardous for skin contact. For more information see section 3.
- Contact with the eyes: Causes serious eye irritation.

D- CMR effects (carcinogenicity, mutagenicity and toxicity to reproduction):

** Changes with regards to the previous version

23026-H - MonoSeal - Hardener

SECTION 11: TOXICOLOGICAL INFORMATION ** (continued)

- Carcinogenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for the effects mentioned. For more information see section 3.
- IARC: Zeolites (3: Not classifiable as to its carcinogenicity to humans); Calcium fluoride (3: Not classifiable as to its carcinogenicity to humans); Titanium dioxide (2B: Possibly carcinogenic to humans); Diiron trioxide (3: Not classifiable as to its carcinogenicity to humans); Chromium (III) oxide (3: Not classifiable as to its carcinogenicity to humans); Carbon black (2B: Possibly carcinogenic to humans); Hydrocarbons, C9, aromatics (3: Not classifiable as to its carcinogenicity to humans); Mica (RCS < 1%) (1: Carcinogenic to humans); Talc (3: Not classifiable as to its carcinogenicity to humans)
- Mutagenicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.
- Reproductive toxicity: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

E- Sensitizing effects:

- Respiratory: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous with sensitising effects. For more information see section 3.
- Skin: Prolonged contact with the skin can result in episodes of allergic contact dermatitis.

F- Specific target organ toxicity (STOT) - single exposure:

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

G- Specific target organ toxicity (STOT)-repeated exposure:

- Specific target organ toxicity (STOT)-repeated exposure: Based on available data, the classification criteria are not met. However, it does contain substances which are classified as dangerous due to repetitive exposure. For more information see section 3.
- Skin: Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

H- Aspiration hazard:

Based on available data, the classification criteria are not met, as it does not contain substances classified as hazardous for this effect. For more information see section 3.

Other information:

Not relevant

Specific toxicology information on the substances:

Identification	Acute toxicity		Genus
Diethylmethylenediamine CAS: 68479-98-1 EC: 270-877-4	LD50 oral	598 mg/kg	Rat
	LD50 dermal	1100 mg/kg	Rat
	LC50 inhalation vapour	>20 mg/L	
4,4'-methylenebis[N-sec-butylaniline] CAS: 5285-60-9 EC: 226-122-6	LD50 oral	500 mg/kg	
	LD50 dermal	>2000 mg/kg	
	LC50 inhalation dust	>5 mg/L	
1,2-Ethandiamin, Polymer with Aziridin, Rp. with Ethylhexylacrylat, Salt with PEGPPG-monobutylether. Phosphat CAS: 398475-96-2 EC: Not relevant	LD50 oral	>2000 mg/kg	
	LD50 dermal	>2000 mg/kg	
	LC50 inhalation vapour	>20 mg/L	
Calcium fluoride CAS: 7789-75-5 EC: 232-188-7	LD50 oral	>2000 mg/kg	
	LD50 dermal	>2000 mg/kg	
	LC50 inhalation dust	>5 mg/L	
Chromium (III) oxide CAS: 1308-38-9 EC: 215-160-9	LD50 oral	5100 mg/kg	Rat
	LD50 dermal	>2000 mg/kg	
	LC50 inhalation dust	>5 mg/L	
1-butylpyrrolidin-2-one CAS: 3470-98-2 EC: 222-437-8	LD50 oral	500 mg/kg	
	LD50 dermal	>2000 mg/kg	
	LC50 inhalation vapour	>20 mg/L	

** Changes with regards to the previous version

- CONTINUED ON NEXT PAGE -

23026-H - MonoSeal - Hardener

SECTION 11: TOXICOLOGICAL INFORMATION ** (continued)

Identification	Acute toxicity		Genus
1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol CAS: 102-60-3 EC: 203-041-4	LD50 oral	>2000 mg/kg	
	LD50 dermal	>2000 mg/kg	
	LC50 inhalation vapour	>20 mg/L	
4-morpholinecarbaldehyde CAS: 4394-85-8 EC: 224-518-3	LD50 oral	7475 mg/kg	Rat
	LD50 dermal	18400 mg/kg	Rabbit
	LC50 inhalation dust	>5 mg/L	
Ethanediol CAS: 107-21-1 EC: 203-473-3	LD50 oral	>2000 mg/kg	
	LD50 dermal	>3500 mg/kg	Rabbit
	LC50 inhalation vapour	>20 mg/L	

11.2 Information on other hazards:

Endocrine disrupting properties

Endocrine-disrupting properties: The product does not meet the criteria.

Other information

Not relevant

** Changes with regards to the previous version

SECTION 12: ECOLOGICAL INFORMATION **

The experimental information related to the eco-toxicological properties of the product itself is not available

Toxic to aquatic life with long lasting effects.

12.1 Toxicity:

Acute toxicity:

Identification	Concentration		Species	Genus
4,4'-methylenebis[N-sec-butylaniline] CAS: 5285-60-9 EC: 226-122-6	LC50	>0.1 - 1 mg/L (96 h)		Fish
	EC50	>0.1 - 1 mg/L (48 h)		Crustacean
	EC50	>0.1 - 1 mg/L (72 h)		Algae
1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol CAS: 102-60-3 EC: 203-041-4	LC50	4600 mg/L (96 h)	Leuciscus idus	Fish
	EC50	Not relevant		
	EC50	150 mg/L (72 h)	Desmodesmus subspicatus	Algae
1,2-Ethandiamin, Polymer with Aziridin, Rp. with Ethylhexylacrylat, Salt with PEGPPG-monobutylether. Phosphat CAS: 398475-96-2 EC: Not relevant	LC50	>1 - 10 mg/L (96 h)		Fish
	EC50	>1 - 10 mg/L (48 h)		Crustacean
	EC50	>1 - 10 mg/L (72 h)		Algae
Diethylmethylbenzenediamine CAS: 68479-98-1 EC: 270-877-4	LC50	194 mg/L (48 h)	Leuciscus idus	Fish
	EC50	0.5 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	Not relevant		
4-morpholinecarbaldehyde CAS: 4394-85-8 EC: 224-518-3	LC50	500 mg/L (96 h)	Leuciscus idus	Fish
	EC50	Not relevant		
	EC50	23880 mg/L (72 h)	Desmodesmus subspicatus	Algae
Ethanediol CAS: 107-21-1 EC: 203-473-3	LC50	53000 mg/L (96 h)	Pimephales promelas	Fish
	EC50	51000 mg/L (48 h)	Daphnia magna	Crustacean
	EC50	24000 mg/L (168 h)	Selenastrum capricornutum	Algae

Chronic toxicity:

Identification	Concentration		Species	Genus
1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol CAS: 102-60-3 EC: 203-041-4	NOEC	Not relevant		
	NOEC	10 mg/L	Daphnia magna	Crustacean
4-morpholinecarbaldehyde CAS: 4394-85-8 EC: 224-518-3	NOEC	1 mg/L	N/A	Fish
	NOEC	1 mg/L	Daphnia magna	Crustacean

12.2 Persistence and degradability:

** Changes with regards to the previous version

- CONTINUED ON NEXT PAGE -

23026-H - MonoSeal - Hardener

SECTION 12: ECOLOGICAL INFORMATION ** (continued)

Substance-specific information:

Identification	Degradability		Biodegradability	
	Parameter	Value	Parameter	Value
1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol CAS: 102-60-3 EC: 203-041-4	BOD5	Not relevant	Concentration	107 mg/L
	COD	Not relevant	Period	28 days
	BOD5/COD	Not relevant	% Biodegradable	36 %
4-morpholinecarbaldehyde CAS: 4394-85-8 EC: 224-518-3	BOD5	Not relevant	Concentration	100 mg/L
	COD	Not relevant	Period	30 days
	BOD5/COD	Not relevant	% Biodegradable	100 %
Ethenediol CAS: 107-21-1 EC: 203-473-3	BOD5	0.47 g O2/g	Concentration	100 mg/L
	COD	1.29 g O2/g	Period	14 days
	BOD5/COD	0.36	% Biodegradable	90 %

12.3 Bioaccumulative potential:

Substance-specific information:

Identification	Bioaccumulation potential	
	Parameter	Value
4-morpholinecarbaldehyde CAS: 4394-85-8 EC: 224-518-3	BCF	1
	Pow Log	-1.2
	Potential	Low
Ethenediol CAS: 107-21-1 EC: 203-473-3	BCF	10
	Pow Log	-1.36
	Potential	Low

12.4 Mobility in soil:

Identification	Absorption/desorption		Volatility	
	Parameter	Value	Parameter	Value
4-morpholinecarbaldehyde CAS: 4394-85-8 EC: 224-518-3	Koc	1	Henry	2.302E-3 Pa·m ³ /mol
	Conclusion	Very High	Dry soil	Not relevant
	Surface tension	Not relevant	Moist soil	Not relevant
Ethenediol CAS: 107-21-1 EC: 203-473-3	Koc	0	Henry	1.327E-1 Pa·m ³ /mol
	Conclusion	Very High	Dry soil	Not relevant
	Surface tension	4.989E-2 N/m (25 °C)	Moist soil	Not relevant

12.5 Results of PBT and vPvB assessment:

Product does not meet PBT/vPvB criteria

12.6 Endocrine disrupting properties:

Endocrine-disrupting properties: The product does not meet the criteria.

12.7 Other adverse effects:

Not described

** Changes with regards to the previous version

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods:

Code	Description	Waste class (Regulation (EU) No 1357/2014)
08 01 11*	waste paint and varnish containing organic solvents or other hazardous substances	Hazardous

Type of waste (Regulation (EU) No 1357/2014):

HP14 Ecotoxic

Waste management (disposal and evaluation):

Consult the authorized waste service manager on the assessment and disposal operations in accordance with Annex 1 and Annex 2 (Directive 2008/98/EC, The Waste Regulations 2011, 2011 No. 988). As under 15 01 (2014/955/EU) of the code and in case the container has been in direct contact with the product, it will be processed the same way as the actual product. Otherwise, it will be processed as non-hazardous residue. Waste should not be disposed of to drains. See paragraph 6.2.

- CONTINUED ON NEXT PAGE -

23026-H - MonoSeal - Hardener

SECTION 13: DISPOSAL CONSIDERATIONS (continued)

Regulations related to waste management:

In accordance with Annex II of Regulation (EC) No 1907/2006 (REACH) the community or state provisions related to waste management are stated

Community legislation: Directive 2008/98/EC, 2014/955/EU, Regulation (EU) No 1357/2014

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land:

With regard to ADR 2025 and RID 2025:



14.1 UN number or ID number: UN3082

14.2 UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,2-Ethandiamin, Polymer with Aziridin, Rp. with Ethylhexylacrylat, Salt with PEGPPG-monobutylether. Phosphat; 4,4'-methylenebis[N-sec-butylaniline])

14.3 Transport hazard class (es): 9

Labels: 9

14.4 Packing group: III

14.5 Environmental hazards: Yes

14.6 Special precautions for user

Special regulations: 274, 335, 375, 601, 650

Tunnel restriction code: -

Physico-Chemical properties: see section 9

Limited quantities: 5 L

14.7 Maritime transport in bulk according to IMO instruments: Not relevant

Transport of dangerous goods by sea:

With regard to IMDG 42-24:



14.1 UN number or ID number: UN3082

14.2 UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,2-Ethandiamin, Polymer with Aziridin, Rp. with Ethylhexylacrylat, Salt with PEGPPG-monobutylether. Phosphat; 4,4'-methylenebis[N-sec-butylaniline])

14.3 Transport hazard class (es): 9

Labels: 9

14.4 Packing group: III

14.5 Marine pollutant: Yes

14.6 Special precautions for user

Special regulations: 335, 969, 274

EmS Codes: F-A, S-F

Physico-Chemical properties: see section 9

Limited quantities: 5 L

Segregation group: Not relevant

14.7 Maritime transport in bulk according to IMO instruments: Not relevant

Transport of dangerous goods by air:

With regard to IATA/ICAO 2025:

- CONTINUED ON NEXT PAGE -

23026-H - MonoSeal - Hardener

SECTION 14: TRANSPORT INFORMATION (continued)



14.1 UN number or ID number: UN3082

14.2 UN proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,2-Ethandiamin, Polymer with Aziridin, Rp. with Ethylhexylacrylat, Salt with PEGPPG-monobutylether. Phosphat; 4,4'-methylenebis[N-sec-butylaniline])

14.3 Transport hazard class (es): 9

Labels: 9

14.4 Packing group: III

14.5 Environmental hazards: Yes

14.6 Special precautions for user

Physico-Chemical properties: see section 9

14.7 Maritime transport in bulk according to IMO instruments: Not relevant

SECTION 15: REGULATORY INFORMATION

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

- Article 95, REGULATION (EU) No 528/2012: Not relevant
- Candidate substances for authorisation under the Regulation (EC) No 1907/2006 (REACH): Not relevant
- Regulation (EU) 2019/1021 on persistent organic pollutants: Not relevant
- Regulation (EU) 2024/590, about substances that deplete the ozone layer: Not relevant
- REGULATION (EU) No 649/2012, in relation to the import and export of hazardous chemical products: Not relevant
- Substances included in Annex XIV of REACH ("Authorisation List") and sunset date: Not relevant

Seveso III:

Section	Description	Lower-tier requirements	Upper-tier requirements
E2	ENVIRONMENTAL HAZARDS	200.000	500.000

Limitations to commercialisation and the use of certain dangerous substances and mixtures (Annex XVII REACH, etc):

Shall not be used in:

- ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
 - tricks and jokes,
 - games for one or more participants, or any article intended to be used as such, even with ornamental aspects.
- Occupational exposure to respirable crystalline silica must be controlled pursuant to Directive (EU) 2019/130.

Specific provisions in terms of protecting people or the environment:

It is recommended to use the information included in this safety data sheet as a basis for conducting workplace-specific risk assessments in order to establish the necessary risk prevention measures for the handling, use, storage and disposal of this product.

Other legislation:

- The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (CDG 2009), SI 2009 No 1348
- The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment (Amendment) Regulations 2011, 2011 No. 1885
- Control of Substances Hazardous to Health Regulations 2002 (as amended)
- EH40/2005 Workplace exposure limits
- The Waste Regulations 2011, 2011 No. 988

15.2 Chemical safety assessment:

The supplier has not carried out evaluation of chemical safety.

SECTION 16: OTHER INFORMATION **

Legislation related to safety data sheets:

** Changes with regards to the previous version

23026-H - MonoSeal - Hardener**SECTION 16: OTHER INFORMATION ** (continued)**

This safety data sheet has been designed in accordance with ANNEX II-Guide to the compilation of safety data sheets of Regulation (EC) No 1907/2006 (COMMISSION REGULATION (EU) 2020/878)

Modifications related to the previous Safety Data Sheet which concerns the ways of managing risks.:

COMPOSITION/INFORMATION ON INGREDIENTS (SECTION 3, SECTION 11, SECTION 12):

· New declared substances

Ethanediol (107-21-1)

1,1',1'',1'''-ethylenedinitrilotetrapropan-2-ol (102-60-3)

1,2-Ethandiamin, Polymer with Aziridin, Rp. with Ethylhexylacrylat, Salt with PEGPPG-monobutylether.

Phosphat (398475-96-2)

· Removed substances

Hydrocarbons, C10-C12, iso-alkanes, <2% aromatics

Substances that contribute to the classification (SECTION 2):

· Removed substances

Diethylmethylbenzenediamine (68479-98-1)

CLP Regulation (EC) No 1272/2008 (SECTION 2, SECTION 16):

· Pictograms

· Hazard statements

· Precautionary statements

Texts of the legislative phrases mentioned in section 2:

H319: Causes serious eye irritation.

H411: Toxic to aquatic life with long lasting effects.

H317: May cause an allergic skin reaction.

Texts of the legislative phrases mentioned in section 3:

The phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to the individual components which appear in section 3

CLP Regulation (EC) No 1272/2008:

Acute Tox. 4: H302 - Harmful if swallowed.

Acute Tox. 4: H302+H312 - Harmful if swallowed or in contact with skin.

Aquatic Acute 1: H400 - Very toxic to aquatic life.

Aquatic Chronic 1: H410 - Very toxic to aquatic life with long lasting effects.

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

Eye Irrit. 2: H319 - Causes serious eye irritation.

Skin Irrit. 2: H315 - Causes skin irritation.

Skin Sens. 1: H317 - May cause an allergic skin reaction.

Skin Sens. 1B: H317 - May cause an allergic skin reaction.

STOT RE 2: H373 - May cause damage to organs through prolonged or repeated exposure (Oral).

STOT RE 2: H373 - May cause damage to organs through prolonged or repeated exposure.

Classification procedure:

Eye Irrit. 2: Calculation method

Aquatic Chronic 2: Calculation method

Skin Sens. 1: Calculation method

Advice related to training:

Training is recommended in order to prevent industrial risks for staff using this product and to facilitate their comprehension and interpretation of this safety data sheet, as well as the label on the product.

Principal bibliographical sources:

<http://echa.europa.eu>

<http://eur-lex.europa.eu>

Abbreviations and acronyms:

23026-H - MonoSeal - Hardener

SECTION 16: OTHER INFORMATION ** (continued)

ADR: European agreement concerning the international carriage of dangerous goods by road
IMDG: International maritime dangerous goods code
IATA: International Air Transport Association
ICAO: International Civil Aviation Organisation
COD: Chemical Oxygen Demand
BOD5: 5day biochemical oxygen demand
BCF: Bioconcentration factor
LD50: Lethal Dose 50
LC50: Lethal Concentration 50
EC50: Effective concentration 50
LogPOW: Octanolwater partition coefficient
Koc: Partition coefficient of organic carbon
UFI: unique formula identifier
IARC: International Agency for Research on Cancer

*** Changes with regards to the previous version*

The information contained in this safety data sheet is based on sources, technical knowledge and current legislation at European and state level, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product, it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within our awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

- END OF SAFETY DATA SHEET -