



SAFETY DATA SHEET NITOFILL LV BASE

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

1.1. Product identifier

Product name NITOFILL LV BASE

Product number A1801001UK9

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

Identified uses Low viscosity epoxy resin crack injection system.

1.3. Details of the supplier of the safety data sheet

Supplier Fosroc Limited
Drayton Manor Business Park
Coleshill Road
Tamworth
Staffordshire
B78 3XN
England
Tel: +44 (0) 1827 262222
Fax: +44 (0) 1827 262444
enquiryuk@fosroc.com

1.4. Emergency telephone number

Emergency telephone +44 (0) 1827 265 279 (Monday-Sunday 24 hours a day)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Skin Sens. 1 - H317

Environmental hazards Aquatic Chronic 2 - H411

Human health The product is irritating to eyes and skin. May cause skin sensitisation or allergic reactions in sensitive individuals.

Environmental The product contains a substance which is toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

2.2. Label elements

Hazard pictograms



Signal word

Danger

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Hazard statements	<p>H315 Causes skin irritation.</p> <p>H318 Causes serious eye damage.</p> <p>H317 May cause an allergic skin reaction.</p> <p>H411 Toxic to aquatic life with long lasting effects.</p>
Precautionary statements	<p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P302+P352 IF ON SKIN: Wash with plenty of water.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p>
Contains	<p>reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700), Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol, 1.4 BUTANE DIGLYCIDYL ETHER</p>
Supplementary precautionary statements	<p>P261 Avoid breathing vapour/ spray.</p> <p>P264 Wash contaminated skin thoroughly after handling.</p> <p>P272 Contaminated work clothing should not be allowed out of the workplace.</p> <p>P273 Avoid release to the environment.</p> <p>P310 Immediately call a POISON CENTER/ doctor.</p> <p>P321 Specific treatment (see medical advice on this label).</p> <p>P332+P313 If skin irritation occurs: Get medical advice/ attention.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P391 Collect spillage.</p>

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)			30-60%
CAS number: 25068-38-6	EC number: 500-033-5	REACH registration number: 01-2119456619-26-XXXX	
Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317 Aquatic Chronic 2 - H411			
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol			30-60%
CAS number: 9003-36-5	EC number: 500-006-8		
Classification Skin Irrit. 2 - H315 Skin Sens. 1 - H317 Aquatic Chronic 2 - H411			

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1.4 BUTANE DIGLYCIDYL ETHER	10-30%
CAS number: 2425-79-8	EC number: 219-371-7
Classification Acute Tox. 4 - H302 Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317	

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Move affected person to fresh air at once. Place unconscious person on their side in the recovery position and ensure breathing can take place. Get medical attention if symptoms are severe or persist.
Ingestion	Rinse mouth thoroughly with water. Give plenty of water to drink.
Skin contact	Wash skin thoroughly with soap and water or use an approved skin cleanser. Get medical attention if irritation persists after washing.
Eye contact	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Continue to rinse for at least 15 minutes. Get medical attention if irritation persists after washing.

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

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Irritating to respiratory system.
Ingestion	The product irritates mucous membranes and may cause abdominal discomfort if swallowed.
Skin contact	May cause sensitisation by skin contact. Irritating to skin.
Eye contact	Irritating to eyes.

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

Notes for the doctor	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products	Carbon monoxide (CO).
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5.3. Advice for firefighters

Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions For personal protection, see Section 8.

6.2. Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Collect spillage for reclamation or absorb in vermiculite, dry sand or similar material. Provide adequate ventilation.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Provide adequate ventilation. Avoid contact with skin and eyes. Avoid the formation of mists.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry, cool and well-ventilated place.

Storage class Chemical storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight \leq 700) (CAS: 25068-38-6)

DNEL Workers - Inhalation; Short term systemic effects: 12.25 mg/m³
Workers - Inhalation; Long term systemic effects: 12.25 mg/m³

PNEC - Fresh water; 0.006 mg/l

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol (CAS: 9003-36-5)

DNEL Workers - Inhalation; Long term systemic effects: 29.39 mg/m³
Workers - Dermal; Long term systemic effects: 104.15 mg/kg/day
Workers - Dermal; Short term local effects: 8.3 µg/cm²

PNEC - Fresh water; 0.003 mg/l
- marine water; 0.0003 mg/l
- STP; 10 mg/l

1.4 BUTANE DIGLYCIDYL ETHER (CAS: 2425-79-8)

DNEL Industry - Dermal; Long term systemic effects: 9.26 mg/kg/day
Industry - Inhalation; Long term systemic effects: 1.63 mg/m³

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PNEC

- STP; 100 mg/l
- Fresh water; 0.024 mg/l
- Sediment (Freshwater); 0.084 mg/kg
- marine water; 0.0024 mg/l
- Sediment (Marinewater); 0.0084 mg/kg
- Soil; 0.0027 mg/kg

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation.

Eye/face protection

Wear chemical splash goggles. Wear tight-fitting, chemical splash goggles or face shield.

Hand protection

Wear protective gloves. It is recommended that gloves are made of the following material: Nitrile rubber. Butyl rubber.

Other skin and body protection

Wear apron or protective clothing in case of contact.

Hygiene measures

Wash at the end of each work shift and before eating, smoking and using the toilet.

Respiratory protection

Breathing apparatus in the event of aerosol or mist formation.
Short term: filter apparatus, combination filter A-P2

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Straw.
Odour	Mild.
Odour threshold	Not determined.
pH	Not applicable.
Melting point	Not determined.
Initial boiling point and range	200°C @ 101 kPa
Flash point	> 150°C
Evaporation rate	Not determined.
Evaporation factor	Not determined.
Flammability (solid, gas)	Not applicable.
Other flammability	Not determined.
Vapour pressure	0.1 kPa @ 20°C
Vapour density	Not determined.
Relative density	1.15 @ 20°C
Bulk density	Not applicable.

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Solubility(ies)	Insoluble in water.
Partition coefficient	Not determined.
Decomposition Temperature	Not determined.
Viscosity	Not determined.
Explosive properties	Not determined.
Explosive under the influence of a flame	Not considered to be explosive.
Oxidising properties	Does not meet the criteria for classification as oxidising.

9.2. Other information

Other information	No data available.
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	The reactivity data for this product will be typical of those for the following class of materials: Epoxides.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Strong acids. Amines. Alkalis. Strong oxidising agents.
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10.4. Conditions to avoid

Conditions to avoid	No specific requirements are anticipated under normal conditions of use.
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10.5. Incompatible materials

Materials to avoid	No specific material or group of materials is likely to react with the product to produce a hazardous situation.
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10.6. Hazardous decomposition products

Hazardous decomposition products	Irritant fumes.
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects	This product has low toxicity.
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Acute toxicity - dermal

ATE dermal (mg/kg)	7,914.81
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Acute toxicity - inhalation

ATE inhalation (gases ppm)	32,378.76
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ATE inhalation (vapours mg/l)	79.15
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ATE inhalation (dusts/mists mg/l)	10.79
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Skin contact	Irritating to skin. May cause sensitisation by skin contact.
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Eye contact Irritating to eyes.

Toxicological information on ingredients.

reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight \leq 700)

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 5,000.0

Species Rat

Notes (oral LD₅₀) Based on available data the classification criteria are not met.

ATE oral (mg/kg) 5,000.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 20,000.0

Species Rabbit

ATE dermal (mg/kg) 20,000.0

Skin corrosion/irritation

Animal data Rabbit Moderately irritating.

Skin sensitisation

Skin sensitisation May cause sensitisation by skin contact.

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ >5000 mg/kg, Oral, Rat

1.4 BUTANE DIGLYCIDYL ETHER

Acute toxicity - oral

ATE oral (mg/kg) 500.0

Acute toxicity - inhalation

ATE inhalation (gases ppm) 4,500.0

ATE inhalation (vapours mg/l) 11.0

ATE inhalation (dusts/mists mg/l) 1.5

SECTION 12: Ecological information

Ecotoxicity The product contains substances which are toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

12.1. Toxicity

Ecological information on ingredients.

reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight \leq 700)

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Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: 3.6 mg/l, Leuciscus idus (Golden orfe)
	LC ₅₀ , 96 hours: 2 mg/l, Oncorhynchus mykiss (Rainbow trout)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 1.8 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: 11 mg/l, Scenedesmus capricornutum (fresh water algae)

Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: >1000 mg/l, Oncorhynchus mykiss (Rainbow trout)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: >1000 mg/l, Daphnia magna

1.4 BUTANE DIGLYCIDYL ETHER

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: 19.8 mg/l, Fish
Acute toxicity - aquatic invertebrates	EC ₅₀ , : 75 mg/l, Daphnia magna 24 hours

12.2. Persistence and degradability

Persistence and degradability Not expected to be readily biodegradable.

Ecological information on ingredients.

reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)

Persistence and degradability	The product is not readily biodegradable.
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12.3. Bioaccumulative potential

Partition coefficient	Not determined.
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Ecological information on ingredients.

reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)

Partition coefficient	log Pow: 3.242
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Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol

Partition coefficient	: log Pow = Approximately 3.8 at 25 C
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12.4. Mobility in soil

Mobility	The product has poor water-solubility.
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Ecological information on ingredients.

reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)

Mobility	The product has poor water-solubility.
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Adsorption/desorption coefficient Water - Koc: 445 @ °C

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

Ecological information on ingredients.

reaction product: bisphenol-A-(epichlorhydrin) epoxy resin (number average molecular weight ≤ 700)

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Waste is classified as hazardous waste.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID)	3082
UN No. (IMDG)	3082
UN No. (ICAO)	3082
UN No. (ADN)	3082

14.2. UN proper shipping name

Proper shipping name (ADR/RID) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS EPOXY RESIN (Type A) (Number average MW ≤ 700), EPOXY RESIN (Type F) (Number average MW ≤ 700))

Proper shipping name (IMDG) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS EPOXY RESIN (Type A) (Number average MW ≤ 700), EPOXY RESIN (Type F) (Number average MW ≤ 700))

Proper shipping name (ICAO) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS EPOXY RESIN (Type A) (Number average MW ≤ 700), EPOXY RESIN (Type F) (Number average MW ≤ 700))

Proper shipping name (ADN) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS EPOXY RESIN (Type A) (Number average MW ≤ 700), EPOXY RESIN (Type F) (Number average MW ≤ 700))

14.3. Transport hazard class(es)

ADR/RID class	9
ADR/RID classification code	M6
ADR/RID label	9

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IMDG class 9

ICAO class/division 9

ADN class 9

Transport labels



14.4. Packing group

ADR/RID packing group III

IMDG packing group III

ICAO packing group III

ADN packing group III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



14.6. Special precautions for user

EmS F-A, S-F

ADR transport category 3

Emergency Action Code •3Z

Hazard Identification Number 90
(ADR/RID)

Tunnel restriction code (E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

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

National regulations Control of Substances Hazardous to Health Regulations 2002 (as amended).

EU legislation Commission Regulation (EU) No 453/2010 of 20 May 2010.
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).
Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

Guidance Workplace Exposure Limits EH40.

15.2. Chemical safety assessment

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No chemical safety assessment has been carried out.

SECTION 16: Other information

General information	Only trained personnel should use this material.
Training advice	Those who are employed in the use of this product must be given training which highlights the need to handle and use it only in the recommended manner and at all times make use of the prescribed personal protection equipment.
Revision comments	NOTE: Lines within the margin indicate significant changes from the previous revision.
Revision date	23/10/2019
Revision	3b
Supersedes date	29/07/2015
SDS number	12153
Hazard statements in full	H302 Harmful if swallowed. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H319 Causes serious eye irritation. H332 Harmful if inhaled. H411 Toxic to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.



SAFETY DATA SHEET NITOFILL LV HARDENER

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

1.1. Product identifier

Product name NITOFILL LV HARDENER

Product number A1801002UK9

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

Identified uses Hardener component of two part epoxy system

1.3. Details of the supplier of the safety data sheet

Supplier Fosroc Limited
Drayton Manor Business Park
Coleshill Road
Tamworth
Staffordshire
B78 3XN
England
Tel: +44 (0) 1827 262222
Fax: +44 (0) 1827 262444
enquiryuk@fosroc.com

1.4. Emergency telephone number

Emergency telephone +44 (0) 1827 265 279 (Monday-Sunday 24 hours a day)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

Health hazards Acute Tox. 4 - H302 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317

Environmental hazards Aquatic Chronic 3 - H412

Human health Prolonged or repeated contact with skin may cause redness, itching, irritation and eczema/chapping. The product contains a small amount of sensitising substance. May cause skin sensitisation or allergic reactions in sensitive individuals.

Environmental The product contains a substance which is harmful to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

2.2. Label elements

Hazard pictograms



Signal word Danger

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Hazard statements	<p>H302 Harmful if swallowed.</p> <p>H314 Causes severe skin burns and eye damage.</p> <p>H317 May cause an allergic skin reaction.</p> <p>H412 Harmful to aquatic life with long lasting effects.</p>
Precautionary statements	<p>P260 Do not breathe vapour/ spray.</p> <p>P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P310 Immediately call a POISON CENTER/ doctor.</p> <p>P405 Store locked up.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p>
Contains	TRIMETHYL HEXAMETHYLENEDIAMINE, PARA TOLUENE SULPHONIC ACID MONO HYDRATE
Supplementary precautionary statements	<p>P261 Avoid breathing vapour/ spray.</p> <p>P264 Wash contaminated skin thoroughly after handling.</p> <p>P270 Do not eat, drink or smoke when using this product.</p> <p>P272 Contaminated work clothing should not be allowed out of the workplace.</p> <p>P273 Avoid release to the environment.</p> <p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P301+P312 IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.</p> <p>P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</p> <p>P302+P352 IF ON SKIN: Wash with plenty of water.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P321 Specific treatment (see medical advice on this label).</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P363 Wash contaminated clothing before reuse.</p>

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

TRIMETHYL HEXAMETHYLENEDIAMINE	60-100%
CAS number: 25620-58-0	EC number: 247-134-8
Classification Acute Tox. 4 - H302 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Aquatic Chronic 3 - H412	

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PARA TOLUENE SULPHONIC ACID MONO HYDRATE		1-5%
CAS number: 6192-52-5	EC number: 695-067-1	
Classification Met. Corr. 1 - H290 Skin Corr. 1B - H314 Eye Dam. 1 - H318 STOT SE 3 - H335		

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Remove affected person from source of contamination. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if any discomfort continues.
Ingestion	Never give anything by mouth to an unconscious person. Do not induce vomiting. Rinse mouth thoroughly with water. Get medical attention immediately.
Skin contact	Remove affected person from source of contamination. Remove contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention promptly if symptoms occur after washing.
Eye contact	Remove affected person from source of contamination. Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Continue to rinse for at least 15 minutes. Get medical attention immediately.

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

General information	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
Inhalation	Difficulty in breathing. Coughing, chest tightness, feeling of chest pressure. May cause an asthma-like shortness of breath. Severe irritation of nose and throat. Headache. Nausea, vomiting.
Ingestion	May cause chemical burns in mouth and throat.
Skin contact	May cause sensitisation by skin contact. May cause serious chemical burns to the skin.
Eye contact	Eye contact may cause serious and potentially irreversible injuries.

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

Notes for the doctor	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of nitrogen.
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5.3. Advice for firefighters

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Protective actions during firefighting No specific firefighting precautions known.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet. Avoid contact with skin and eyes.

6.2. Environmental precautions

Environmental precautions Avoid or minimise the creation of any environmental contamination.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Do not touch or walk into spilled material. Stop leak if possible without risk. Absorb in vermiculite, dry sand or earth and place into containers. Flush contaminated area with plenty of water.

6.4. Reference to other sections

Reference to other sections For personal protection, see Section 8. For waste disposal, see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Provide adequate ventilation. Avoid inhalation of vapours/spray and contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Store in tightly-closed, original container in a dry, cool and well-ventilated place. Keep only in the original container.

Storage class Corrosive storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Ingredient comments No exposure limits known for ingredient(s).

8.2. Exposure controls

Protective equipment



Appropriate engineering controls Provide adequate ventilation.

Eye/face protection Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. The following protection should be worn: Chemical splash goggles or face shield.

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Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. Polyvinyl chloride (PVC). Nitrile rubber. Viton rubber (fluoro rubber).
Other skin and body protection	Wear appropriate clothing to prevent any possibility of skin contact. Use barrier creams to minimise skin contact.
Hygiene measures	Provide eyewash station and safety shower. Do not smoke in work area. Wash at the end of each work shift and before eating, smoking and using the toilet. Promptly remove any clothing that becomes contaminated. Wash promptly with soap and water if skin becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke.
Respiratory protection	Respiratory protection may be required if excessive airborne contamination occurs. It is recommended to use respiratory equipment with combination filter, type A2/P2.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless.
Odour	Amine.
Odour threshold	Not determined.
pH	pH (concentrated solution): 11
Melting point	Not determined.
Initial boiling point and range	>230°C @ 1 atm
Flash point	110°C
Evaporation rate	Not determined.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	Lower flammable/explosive limit: 1.2 vol %
Other flammability	Not determined.
Vapour pressure	0.002 kPa @ 20°C
Vapour density	Not determined.
Relative density	0.88 - 0.90 @ 20°C
Bulk density	Not applicable.
Solubility(ies)	Miscible with water.
Partition coefficient	Not determined.
Auto-ignition temperature	350°C
Decomposition Temperature	Not determined.
Explosive properties	Not considered to be explosive.
Explosive under the influence of a flame	Not considered to be explosive.
Oxidising properties	Does not meet the criteria for classification as oxidising.

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9.2. Other information

Other information Not available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity The following materials may react with the product: Acids.

10.2. Chemical stability

Stability Stable at normal ambient temperatures.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Reacts with Acids, Alkalis and Oxidising Agents

10.4. Conditions to avoid

Conditions to avoid Avoid excessive heat for prolonged periods of time.

10.5. Incompatible materials

Materials to avoid Strong oxidising agents. Strong acids.

10.6. Hazardous decomposition products

Hazardous decomposition products Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of nitrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg) 517.22

Inhalation Harmful by inhalation. May cause damage to mucous membranes in nose, throat, lungs and bronchial system.

Ingestion Harmful if swallowed. May cause burns in mucous membranes, throat, oesophagus and stomach.

Skin contact Causes burns. Harmful in contact with skin. May cause sensitisation by skin contact.

Eye contact Causes burns. Risk of serious damage to eyes.

Acute and chronic health hazards This product is corrosive.

Route of exposure Inhalation Ingestion. Skin and/or eye contact

Target organs No specific target organs known.

Toxicological information on ingredients.

TRIMETHYL HEXAMETHYLENEDIAMINE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 910.0

Species Rat

Skin sensitisation

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Skin sensitisation

Sensitising.

SECTION 12: Ecological information

Ecotoxicity The product contains a substance which is harmful to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

12.1. Toxicity

Toxicity Ecotoxic to fish/daphnia/algae

Ecological information on ingredients.

TRIMETHYL HEXAMETHYLENEDIAMINE

Acute aquatic toxicity

Acute toxicity - fish LC50, 48 hours: 174 mg/l, Leuciscus idus (Golden orfe)

Acute toxicity - aquatic invertebrates EC₅₀, 24 hours: 31.5 mg/l, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 72 hours: 29.5 mg/l, Scenedesmus subspicatus

Acute toxicity - microorganisms EC10, 16 hours: 72 mg/l, Pseudomonas putida

12.2. Persistence and degradability

Persistence and degradability The product is not readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not determined.

12.4. Mobility in soil

Mobility The product is miscible with water and may spread in water systems.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects Not relevant.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information When handling waste, the safety precautions applying to handling of the product should be considered.

Disposal methods Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Note that fully cured material is not considered as hazardous waste.

SECTION 14: Transport information

14.1. UN number

UN No. (ADR/RID) 2327

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UN No. (IMDG) 2327

UN No. (ICAO) 2327

14.2. UN proper shipping name

Proper shipping name (ADR/RID) TRIMETHYLHEXAMETHYLENEDIAMINES

Proper shipping name (IMDG) TRIMETHYLHEXAMETHYLENEDIAMINES

Proper shipping name (ICAO) TRIMETHYLHEXAMETHYLENEDIAMINES

Proper shipping name (ADN) TRIMETHYLHEXAMETHYLENEDIAMINES

14.3. Transport hazard class(es)

ADR/RID class 8

ADR/RID label 8

IMDG class 8

ICAO class/division 8

Transport labels



14.4. Packing group

ADR/RID packing group III

IMDG packing group III

ICAO packing group III

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

EmS F-A, S-B

Emergency Action Code 2X

Hazard Identification Number (ADR/RID) 80

Tunnel restriction code (E)

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not relevant.

SECTION 15: Regulatory information

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

National regulations Control of Substances Hazardous to Health Regulations 2002 (as amended).

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EU legislation	Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015.
Guidance	Workplace Exposure Limits EH40. Approved Classification and Labelling Guide (Sixth edition) L131.

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Abbreviations and acronyms used in the safety data sheet	ATE: Acute Toxicity Estimate. DNEL: Derived No Effect Level. PNEC: Predicted No Effect Concentration. Kow: Octanol-water partition coefficient.
General information	For professional users only. The user must be instructed in the proper work procedure and be familiar with the contents of these instructions.
Revision comments	NOTE: Lines within the margin indicate significant changes from the previous revision.
Revision date	23/10/2019
Revision	3b
Supersedes date	29/07/2015
SDS number	12155
Hazard statements in full	H290 May be corrosive to metals. H302 Harmful if swallowed. H314 Causes severe skin burns and eye damage. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H335 May cause respiratory irritation. H412 Harmful to aquatic life with long lasting effects.

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.