PlasticWeld Syringe - Part A

J-B Weld Company LLC

Version No: **6.7**
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **08/22/2023**
Print Date: **08/22/2023**
S.GHS.USA.EN

SECTION 1 Identification

Product Identifier

Product name	PlasticWeld Syringe Epoxy Resin - Part A
Synonyms	50132 Part A, 50132SPA (PlasticWeld) Part A
Other means of identification	UFI:Q1UF-Y41R-M00M-SU30

Recommended use of the chemical and restrictions on use

Relevant identified uses	Use according to manufacturer's directions.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	**J-B Weld Company LLC**
Address	400 CMH Road TX 75482 United States
Telephone	903-885-7696
Fax	903-885-5911
Website	WWW.JBWeld.com
Email	info@JBWeld.com

Emergency phone number

Association / Organisation	**InfoTrac**
Emergency telephone numbers	Transportation Emergencies: 800-535-5053 or (24 hours)
Other emergency telephone numbers	Poison Control Centers: Medical Emergencies 800-222-1222 (24 hours)

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification	Skin Corrosion/Irritation Category 2, Sensitisation (Skin) Category 1B, Serious Eye Damage/Eye Irritation Category 2A, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Hazardous to the Aquatic Environment Long-Term Hazard Category 3

Label elements

Hazard pictogram(s)	
Signal word	**Warning**

Hazard statement(s)

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.

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H335	May cause respiratory irritation.
H412	Harmful to aquatic life with long lasting effects.

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

P271	Use only outdoors or in a well-ventilated area.
P261	Avoid breathing mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P264	Wash all exposed external body areas thoroughly after handling.
P272	Contaminated work clothing must not be allowed out of the workplace.

Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

Precautionary statement(s) Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
25068-38-6*	85-95	bisphenol A diglycidyl ether polymer
3101-60-8*	1-10	4-tert-butylphenyl glycidyl ether

SECTION 4 First-aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Wash out immediately with fresh running water. ▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin contact occurs: ▸ Immediately remove all contaminated clothing, including footwear. ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If fumes or combustion products are inhaled remove from contaminated area. ▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor, without delay.
Ingestion	▸ If swallowed do **NOT** induce vomiting. ▸ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▸ Observe the patient carefully. ▸ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▸ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▸ Seek medical advice.

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Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Fire-fighting measures

Extinguishing media

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.

Special protective equipment and precautions for fire-fighters

Fire Fighting	▸ Alert Fire Department and tell them location and nature of hazard. ▸ Wear breathing apparatus plus protective gloves in the event of a fire.
Fire/Explosion Hazard	▸ Non combustible. ▸ Not considered a significant fire risk, however containers may burn. May emit poisonous fumes. May emit corrosive fumes.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes.
Major Spills	Moderate hazard. ▸ Clear area of personnel and move upwind.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ **DO NOT** allow clothing wet with material to stay in contact with skin
Other information	

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Polyethylene or polypropylene container. ▸ Packing as recommended by manufacturer.
Storage incompatibility	None known

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Limits (PELs) Table Z-1	bisphenol A diglycidyl ether polymer	Particulates Not Otherwise Regulated (PNOR)- Total dust	15 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-1	bisphenol A diglycidyl ether polymer	Particulates Not Otherwise Regulated (PNOR)- Respirable fraction	5 mg/m3	Not Available	Not Available	Not Available
US OSHA Permissible Exposure Limits (PELs) Table Z-3	bisphenol A diglycidyl ether polymer	Inert or Nuisance Dust: Respirable fraction	5 mg/m3 / 15 mppcf	Not Available	Not Available	Not Available

Continued...

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US OSHA Permissible Exposure Limits (PELs) Table Z-3	bisphenol A diglycidyl ether polymer	Inert or Nuisance Dust: Total Dust	15 mg/m3 / 50 mppcf	Not Available	Not Available	Not Available
US NIOSH Recommended Exposure Limits (RELs)	bisphenol A diglycidyl ether polymer	Particulates not otherwise regulated	Not Available	Not Available	Not Available	See Appendix D

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
bisphenol A diglycidyl ether polymer	90 mg/m3	990 mg/m3	5,900 mg/m3

Ingredient	Original IDLH	Revised IDLH
bisphenol A diglycidyl ether polymer	Not Available	Not Available
4-tert-butylphenyl glycidyl ether	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
4-tert-butylphenyl glycidyl ether	E	≤ 0.1 ppm
Notes:	*Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.*	

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
Individual protection measures, such as personal protective equipment	
Eye and face protection	‣ Safety glasses with side shields. ‣ Chemical goggles.
Skin protection	See Hand protection below
Hands/feet protection	‣ Wear chemical protective gloves, e.g. PVC. ‣ Wear safety footwear or safety gumboots, e.g. Rubber **NOTE:** ‣ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
Body protection	See Other protection below
Other protection	‣ Overalls. ‣ P.V.C apron.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Clear liquid

Physical state	Liquid	**Relative density (Water = 1)**	1.10-1.20
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	Not Available	**Decomposition temperature (°C)**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	Not Available
Flash point (°C)	Not Available		
Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Available	**Oxidising properties**	Not Available

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Upper Explosive Limit (%)	Not Available	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not Available	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	Not Available	**Gas group**	Not Available
Solubility in water	Immiscible	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.
Ingestion	Accidental ingestion of the material may be damaging to the health of the individual.
Skin Contact	This material can cause inflammation of the skin on contact in some persons. The material may accentuate any pre-existing dermatitis condition Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	This material can cause eye irritation and damage in some persons.
Chronic	Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

Clear Epoxy Resin - Part A	**TOXICITY**	**IRRITATION**
	Not Available	Not Available
bisphenol A diglycidyl ether polymer	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >1200 mg/kg[2]	Not Available
	Oral (Mouse) LD50; >500 mg/kg[2]	
4-tert-butylphenyl glycidyl ether	**TOXICITY**	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[1]	Not Available
	Oral (Rat) LD50: >2000 mg/kg[1]	
Legend:	*1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*	

Clear Epoxy Resin - Part A	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema.

Acute Toxicity	✗	**Carcinogenicity**	✗
Skin Irritation/Corrosion	✓	**Reproductivity**	✗
Serious Eye Damage/Irritation	✓	**STOT - Single Exposure**	✓

Continued...

Respiratory or Skin sensitisation	✔	**STOT - Repeated Exposure**	✘
Mutagenicity	✘	**Aspiration Hazard**	✘

Legend: ✘ *– Data either not available or does not fill the criteria for classification*
✔ *– Data available to make classification*

SECTION 12 Ecological information

Toxicity

Clear Epoxy Resin - Part A

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

bisphenol A diglycidyl ether polymer

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	48h	Crustacea	~2mg/l	2
EC50(ECx)	24h	Crustacea	3mg/l	Not Available
LC50	96h	Fish	2.4mg/l	Not Available

4-tert-butylphenyl glycidyl ether

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	~9mg/l	2
EC50	48h	Crustacea	~67.9mg/l	2
LC50	96h	Fish	~7.5mg/l	2
EC50(ECx)	72h	Algae or other aquatic plants	~9mg/l	2

Legend: *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
4-tert-butylphenyl glycidyl ether	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
4-tert-butylphenyl glycidyl ether	LOW (LogKOW = 3.5231)

Mobility in soil

Ingredient	Mobility
4-tert-butylphenyl glycidyl ether	LOW (KOC = 293.2)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.

- **DO NOT** allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.

SECTION 14 Transport information

Marine Pollutant	NO

Shipping container and transport vehicle placarding and labeling may vary from the below information. Products that are regulated for transport will be packaged and marked as Dangerous Goods in Limited Quantities according to US DOT, IATA and IMDG regulations. In case of reshipment, it is the responsibility of the shipper to determine the appropriate labels and markings in accordance with applicable transport regulations.

Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Continued...

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
bisphenol A diglycidyl ether polymer	Not Available
4-tert-butylphenyl glycidyl ether	Not Available

Transport in bulk in accordance with the IGC Code

Product name	Ship Type
bisphenol A diglycidyl ether polymer	Not Available
4-tert-butylphenyl glycidyl ether	Not Available

SECTION 15 Regulatory information

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

bisphenol A diglycidyl ether polymer is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5
US DOE Temporary Emergency Exposure Limits (TEELs)
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US OSHA Permissible Exposure Limits (PELs) Table Z-3
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

4-tert-butylphenyl glycidyl ether is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	No
Reproductive toxicity	No
Skin Corrosion or Irritation	Yes
Respiratory or Skin Sensitization	Yes
Serious eye damage or eye irritation	Yes
Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

None Reported

State Regulations

US. California Proposition 65

Continued...

None Reported

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (bisphenol A diglycidyl ether polymer; 4-tert-butylphenyl glycidyl ether)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (bisphenol A diglycidyl ether polymer; 4-tert-butylphenyl glycidyl ether)
Vietnam - NCI	Yes
Russia - FBEPH	No (4-tert-butylphenyl glycidyl ether)
Legend:	*Yes = All CAS declared ingredients are on the inventory* *No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.*

SECTION 16 Other information

Revision Date	08/22/2023
Initial Date	09/19/2020

SDS Version Summary

Version	Date of Update	Sections Updated
5.7	08/21/2023	Toxicological information - Acute Health (inhaled), Toxicological information - Acute Health (swallowed), Hazards identification - Classification, First Aid measures - First Aid (swallowed), Composition / information on ingredients - Ingredients, Identification of the substance / mixture and of the company / undertaking - Synonyms

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

Powered by AuthorITe, from Chemwatch.

PlasticWeld Syringe - Part B

J-B Weld Company LLC

Version No: **6.8**
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **08/22/2023**
Print Date: **08/22/2023**
S.GHS.USA.EN

SECTION 1 Identification

Product Identifier

Product name	PlasticWeld Syringe Epoxy Hardener - Part B
Synonyms	50132 Part B, 50132SPA PlasticWeld Part B
Other means of identification	UFI:P1UF-Y41R-M00M-SU32

Recommended use of the chemical and restrictions on use

Relevant identified uses	Use according to manufacturer's directions.

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	**J-B Weld Company LLC**
Address	400 CMH Road TX 75482 United States
Telephone	903-885-7696
Fax	903-885-5911
Website	WWW.JBWeld.com
Email	info@JBWeld.com

Emergency phone number

Association / Organisation	**InfoTrac**
Emergency telephone numbers	Transportation Emergencies: 800-535-5053 or (24 hours)
Other emergency telephone numbers	Poison Control Centers: Medical Emergencies 800-222-1222 (24 hours)

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification	Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2A, Hazardous to the Aquatic Environment Long-Term Hazard Category 3

Label elements

Hazard pictogram(s)	
Signal word	**Warning**

Hazard statement(s)

H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.

Page 1 continued...

H412	Harmful to aquatic life with long lasting effects.

Hazard(s) not otherwise classified

Not Applicable

Precautionary statement(s) Prevention

P264	Wash all exposed external body areas thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P273	Avoid release to the environment.
P280	Wear protective gloves, protective clothing, eye protection and face protection.

Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P330	Rinse mouth.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
72244-98-5*	80-90	pentaerythritol, propoxylated, mercaptoglycerol capped
100-51-6*	1-5	benzyl alcohol
25620-58-0*	1-5	trimethylhexamethylene diamine
112-24-3*	1-5	triethylenetetramine
140-31-8*	1-5	N-aminoethylpiperazine
112-57-2*	<1	tetraethylenepentamine
111-40-0*	<1	diethylenetriamine
111-41-1*	<1	N-aminoethylethanolamine
111-41-1*	<1	N-aminoethylethanolamine
39423-51-3*	1-5	trimethylolpropane triamine ether, propoxylated
3033-62-3*	<1	bis(2-dimethylaminoethyl)ether
919-30-2*	<1	3-aminopropyltriethoxysilane
13497-18-2	<1	bis[3-(triethoxysilyl)propyl]amine
1184179-50-7*	<1	1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4 First-aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Wash out immediately with fresh running water. ▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▸ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin contact occurs: ▸ Immediately remove all contaminated clothing, including footwear. ▸ Flush skin and hair with running water (and soap if available). ▸ Seek medical attention in event of irritation.
Inhalation	▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area. ▸ Other measures are usually unnecessary.

Continued...

Ingestion	▸ **IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.** ▸ For advice, contact a Poisons Information Centre or a doctor. ▸ Urgent hospital treatment is likely to be needed. ▸ In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition. ▸ If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist. ▸ If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS. **Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:** ▸ **INDUCE** vomiting with fingers down the back of the throat, **ONLY IF CONSCIOUS**. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. **NOTE:** Wear a protective glove when inducing vomiting by mechanical means.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

As in all cases of suspected poisoning, follow the ABCDEs of emergency medicine (airway, breathing, circulation, disability, exposure), then the ABCDEs of toxicology (antidotes, basics, change absorption, change distribution, change elimination).
For poisons (where specific treatment regime is absent):

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 L/min.
- Monitor and treat, where necessary, for pulmonary oedema.
- Monitor and treat, where necessary, for shock.
- Anticipate seizures.
- **DO NOT** use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.

ADVANCED TREATMENT

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.
- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

BRONSTEIN, A.C. and CURRANCE, P.L.
EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994

SECTION 5 Fire-fighting measures

Extinguishing media

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.

Special protective equipment and precautions for fire-fighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear breathing apparatus plus protective gloves in the event of a fire.
Fire/Explosion Hazard	▸ Non combustible. ▸ Not considered a significant fire risk, however containers may burn. May emit poisonous fumes. May emit corrosive fumes.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	Small spills should be covered with inorganic absorbents and disposed of properly. Organic absorbents have been known to ignite when

Continued...

	contaminated with amines in closed containers. ▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes.
Major Spills	Moderate hazard. ▸ Clear area of personnel and move upwind.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs.
Other information	for bulk storages: ▸ If slight coloration of the ethyleneamine is acceptable, storage tanks may be made of carbon steel or black iron, provided they are free of rust and mill scale. However, if the amine is stored in such tanks, color may develop due to iron contamination.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Polyethylene or polypropylene container. ▸ Packing as recommended by manufacturer.
Storage incompatibility	None known

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
US NIOSH Recommended Exposure Limits (RELs)	diethylenetriamine	Diethylenetriamine	1 ppm / 4 mg/m3	Not Available	Not Available	[skin]
US NIOSH Recommended Exposure Limits (RELs)	bis(2-dimethylaminoethyl)ether	bis(2-(Dimethylamino)ethyl)ether	Not Available	Not Available	Not Available	See Appendix C (NIAX® Catalyst ESN)

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
benzyl alcohol	30 ppm	52 ppm	740 ppm
triethylenetetramine	3 ppm	14 ppm	83 ppm
N-aminoethylpiperazine	6.4 mg/m3	71 mg/m3	420 mg/m3
tetraethylenepentamine	15 mg/m3	130 mg/m3	790 mg/m3
diethylenetriamine	3 ppm	8.5 ppm	51 ppm
N-aminoethylethanolamine	9 mg/m3	99 mg/m3	590 mg/m3
N-aminoethylethanolamine	9 mg/m3	99 mg/m3	590 mg/m3
trimethylolpropane triamine ether, propoxylated	30 mg/m3	330 mg/m3	2,000 mg/m3
bis(2-dimethylaminoethyl)ether	0.15 ppm	1.4 ppm	8.4 ppm
3-aminopropyltriethoxysilane	1.9 mg/m3	21 mg/m3	350 mg/m3

Ingredient	Original IDLH	Revised IDLH
pentaerythritol, propoxylated, mercaptoglycerol capped	Not Available	Not Available
benzyl alcohol	Not Available	Not Available
trimethylhexamethylene diamine	Not Available	Not Available
triethylenetetramine	Not Available	Not Available
N-aminoethylpiperazine	Not Available	Not Available
tetraethylenepentamine	Not Available	Not Available
diethylenetriamine	Not Available	Not Available
N-aminoethylethanolamine	Not Available	Not Available
N-aminoethylethanolamine	Not Available	Not Available
trimethylolpropane triamine ether, propoxylated	Not Available	Not Available
bis(2-dimethylaminoethyl)ether	Not Available	Not Available
3-aminopropyltriethoxysilane	Not Available	Not Available
bis[3-(triethoxysilyl)propyl]amine	Not Available	Not Available

Continued...

Ingredient	Original IDLH	Revised IDLH
1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
pentaerythritol, propoxylated, mercaptoglycerol capped	D	> 0.1 to ≤ 1 ppm
benzyl alcohol	E	≤ 0.1 ppm
trimethylhexamethylene diamine	E	≤ 0.1 ppm
triethylenetetramine	E	≤ 0.1 ppm
N-aminoethylpiperazine	E	≤ 0.1 ppm
tetraethylenepentamine	E	≤ 0.1 ppm
N-aminoethylethanolamine	E	≤ 0.1 ppm
N-aminoethylethanolamine	E	≤ 0.1 ppm
trimethylolpropane triamine ether, propoxylated	E	≤ 0.1 ppm
3-aminopropyltriethoxysilane	E	≤ 0.1 ppm
bis[3-(triethoxysilyl)propyl]amine	E	≤ 0.1 ppm
1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane	E	≤ 0.1 ppm
Notes:	*Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.*	

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.
Individual protection measures, such as personal protective equipment	
Eye and face protection	‣ Safety glasses with side shields. ‣ Chemical goggles.
Skin protection	See Hand protection below
Hands/feet protection	‣ Wear chemical protective gloves, e.g. PVC. ‣ Wear safety footwear or safety gumboots, e.g. Rubber The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
Body protection	See Other protection below
Other protection	‣ Overalls. ‣ P.V.C apron.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Clear Liquid

Physical state	Liquid	**Relative density (Water = 1)**	1.10-1.20
Odour	Not Available	**Partition coefficient n-octanol / water**	Not Available
Odour threshold	Not Available	**Auto-ignition temperature (°C)**	Not Available
pH (as supplied)	Not Available	**Decomposition temperature (°C)**	Not Available
Melting point / freezing point (°C)	Not Available	**Viscosity (cSt)**	Not Available
Initial boiling point and boiling range (°C)	Not Available	**Molecular weight (g/mol)**	Not Available
Flash point (°C)	Not Available	**Taste**	Not Available

Continued...

Evaporation rate	Not Available	**Explosive properties**	Not Available
Flammability	Not Available	**Oxidising properties**	Not Available
Upper Explosive Limit (%)	Not Available	**Surface Tension (dyn/cm or mN/m)**	Not Available
Lower Explosive Limit (%)	Not Available	**Volatile Component (%vol)**	Not Available
Vapour pressure (kPa)	Not Available	**Gas group**	Not Available
Solubility in water	Immiscible	**pH as a solution (1%)**	Not Available
Vapour density (Air = 1)	Not Available	**VOC g/L**	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▸ Unstable in the presence of incompatible materials. ▸ Product is considered stable.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Ingestion	Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.
Skin Contact	The material is not thought to be a skin irritant (as classified by EC Directives using animal models). Temporary discomfort, however, may result from prolonged dermal exposures. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	This material can cause eye irritation and damage in some persons.
Chronic	Ample evidence exists that this material directly causes reduced fertility

Clear Epoxy Hardener - Part B

TOXICITY	IRRITATION
Not Available	Not Available

pentaerythritol, propoxylated, mercaptoglycerol capped

TOXICITY	IRRITATION
Dermal (rabbit) LD50: >10200 mg/kg *[2]	Not Available
Inhalation(Rat) LC50: >100 mg/m3 *[2]	
Oral (Rat) LD50: 2600 mg/kg *[2]	

benzyl alcohol

TOXICITY	IRRITATION
Dermal (rabbit) LD50: 2000 mg/kg[2]	Eye (rabbit): 0.75 mg open SEVERE
Inhalation (Rat)LC50: >4178 mg/m3/4h[2]	Eye: adverse effect observed (irritating)[1]
Inhalation (Rat)LC50: 1000 ppm/8h[2]	Skin (man): 16 mg/48h-mild
Inhalation (Rat)LCLo: 2000 ppm/4h[2]	Skin (rabbit):10 mg/24h open-mild
Oral (Rat) LD50: 1230 mg/kg[2]	Skin: no adverse effect observed (not irritating)[1]

Continued...

trimethylhexamethylene diamine

TOXICITY	IRRITATION
Oral (Rat) LD50: 910 mg/kg[2]	Not Available

triethylenetetramine

TOXICITY	IRRITATION
Dermal (rabbit) LD50: 805 mg/kg[2]	Not Available
Oral (Rat) LD50: 1591.4 mg/kg[1]	

N-aminoethylpiperazine

TOXICITY	IRRITATION
Dermal (rabbit) LD50: 880 mg/kg[2]	Eye (rabbit): 20 mg/24h - mod
Intraperitoneal (Mouse) LD50: 250 mg/kg[2]	Eye: adverse effect observed (irritating)[1]
Oral (Rat) LD50: 2410 mg/kg[2]	Skin (rabbit): 0.1 mg/24h - mild
	Skin (rabbit): 5 mg/24h - SEVERE
	Skin: adverse effect observed (corrosive)[1]

tetraethylenepentamine

TOXICITY	IRRITATION
Dermal (rabbit) LD50: 660 mg/kg[2]	Eye (rabbit): 100 mg/24h moderate
Oral (Rat) LD50: 3990 mg/kg[2]	Eye (rabbit): 5 mg moderate
	Skin (rabbit): 495 mg SEVERE
	Skin (rabbit): 5 mg/24h SEVERE

diethylenetriamine

TOXICITY	IRRITATION
Dermal (rabbit) LD50: 1090 mg/kg[2]	Eye: adverse effect observed (irritating)[1]
Inhalation (Rat)LC: 70 mg/m3/4h[2]	Skin (rabbit): 10 mg/24h - SEVERE
Intraperitoneal (Mouse) LD50: 71 mg/kg[2]	Skin (rabbit):500 mg open moderate
Intraperitoneal (Rat) LD50: 74 mg/kg[2]	Skin: adverse effect observed (corrosive)[1]
Oral (Rat) LD50: 1080 mg/kg[2]	

N-aminoethylethanolamine

TOXICITY	IRRITATION
Dermal (g.pig) LD50: 1800 mg/kg[2]	Eye (rabbit): 50 mg SEVERE
Dermal (rabbit) LD50: 3560 mg/kg[2]	Skin (rabbit): 445 mg (open)mild
Intramuscular (rat) LD50: 2000 mg/kg[2]	Skin : Mild
Intraperitoneal (rat) LD50: 120 mg/kg[2]	Skin(rabbit):10 mg/24h open
Intravenous (rat) LD50: 417 mg/kg[2]	
Oral (g.pig) LD50: 1500 mg/kg[2]	
Oral (Mouse) LD50; 3550 mg/kg[2]	
Oral (rabbit) LD50: 2000 mg/kg[2]	
Oral (Rat) LD50: 3000 mg/kg[2]	
Subcutaneous (rat) LD50: 2250 mg/kg[2]	

N-aminoethylethanolamine

TOXICITY	IRRITATION
Dermal (g.pig) LD50: 1800 mg/kg[2]	Eye (rabbit): 50 mg SEVERE
Dermal (rabbit) LD50: 3560 mg/kg[2]	Skin (rabbit): 445 mg (open)mild
Intramuscular (rat) LD50: 2000 mg/kg[2]	Skin : Mild
Intraperitoneal (rat) LD50: 120 mg/kg[2]	Skin(rabbit):10 mg/24h open
Intravenous (rat) LD50: 417 mg/kg[2]	
Oral (g.pig) LD50: 1500 mg/kg[2]	
Oral (Mouse) LD50; 3550 mg/kg[2]	
Oral (rabbit) LD50: 2000 mg/kg[2]	
Oral (Rat) LD50: 3000 mg/kg[2]	
Subcutaneous (rat) LD50: 2250 mg/kg[2]	

trimethylolpropane triamine ether, propoxylated

TOXICITY	IRRITATION

Continued...

	Dermal (rabbit) LD50: 561.6 mg/kg[1]	Eye: adverse effect observed (irreversible damage)[1]
	Oral (Rat) LD50: 50-200 mg/kg[1]	Skin: adverse effect observed (irritating)[1]

bis(2-dimethylaminoethyl)ether		
	TOXICITY	**IRRITATION**
	Dermal (rabbit) LD50: 238 mg/kg[2]	Not Available
	Inhalation(Rat) LC50: >2.204 mg/l4h[1]	
	Oral (Rat) LD50: 571 mg/kg[2]	

3-aminopropyltriethoxysilane		
	TOXICITY	**IRRITATION**
	Dermal (rabbit) LD50: 4000 mg/kg[2]	Eye (rabbit): 0.75 mg/24h-SEVERE
	Intraperitoneal (Mouse) LD50: 260 mg/kg[2]	Eye (rabbit): 100 mg - mild
	Oral (Rat) LD50: 1750 mg/kg[2]	Skin (rabbit): 0.1 mg - mild
	Oral (Rat) LD50: 1780 mg/kg[2]	Skin (rabbit): 5.0 mg/24h-SEVERE

bis[3-(triethoxysilyl)propyl]amine		
	TOXICITY	**IRRITATION**
	dermal (rat) LD50: >2000 mg/kg[1]	Eye: adverse effect observed (irritating)[1]
	Oral (Rat) LD50: 3657 mg/kg[1]	Skin: adverse effect observed (irritating)[1]

1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane		
	TOXICITY	**IRRITATION**
	Not Available	Not Available

Legend:	*1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances*

pentaerythritol, propoxylated, mercaptoglycerol capped	Polyethers (such as ethoxylated surfactants and polyethylene glycols) are highly susceptible to being oxidized in the air. They then form complex mixtures of oxidation products. Animal testing reveals that whole the pure, non-oxidised surfactant is non-sensitizing, many of the oxidation products are sensitisers. Both the vitro skin corrosion test and the vivo skin irritation study did not show significant irritating properties A reliable in vivo eye irritation in rabbit is available, demonstrating no significant eye irritating properties. In a LLNA study it was shown that the material could elicit a SI =3. Based on this result, the material needs to be classified as a skin sensitiser, according to Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures. A 90-day oral gavage study in rats was performed according to GLP and OECD 408 (1998). Based on decreased platelet count and increased incidence of follicular hypertrophy/hyperplasia in the thyroid glands in males at 250 mg/kg bw/d and above, the NOAEL was set at 75 mg/kg bw/d. Based on the available data on genetic toxicity, the substance needs not to be classified for genotoxicity according to Regulation (EC) No. 1272/2008 on Classification, Labelling and Packaging of Substances and Mixture * REACh Dossier
benzyl alcohol	Unlike benzylic alcohols, the beta-hydroxyl group of the members of benzyl alkyl alcohols contributes to break down reactions but do not undergo phase II metabolic activation. Though structurally similar to cancer causing ethyl benzene, phenethyl alcohol is only of negligible concern due to limited similarity in their pattern of activity. For benzoates: Benzyl alcohol, benzoic acid and its sodium and potassium salt have a common metabolic and excretion pathway. All but benzyl alcohol are considered to be unharmful and of low acute toxicity. Adverse reactions to fragrances in perfumes and fragranced cosmetic products include allergic contact dermatitis, irritant contact dermatitis, sensitivity to light, immediate contact reactions, and pigmented contact dermatitis. Airborne and connubial contact dermatitis occurs. Fragrance allergens act as haptens, low molecular weight chemicals that cause an immune response only when attached to a carrier protein. However, not all sensitizing fragrance chemicals are directly reactive, but require previous activation. The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. This is a member or analogue of a group of benzyl derivatives generally regarded as safe (GRAS), based partly on their self-limiting properties as flavouring substances in food. In humans and other animals, they are rapidly absorbed, broken down and excreted, with a wide safety margin. The aryl alkyl alcohol (AAA) fragrance ingredients have diverse chemical structures, with similar metabolic and toxicity profiles. The AAA fragrances demonstrate low acute and subchronic toxicity by skin contact and swallowing.
N-aminoethylpiperazine	for piperazine: Exposure to piperazine and its salts has clearly been demonstrated to cause asthma in occupational settings. No NOAEL can be estimated for respiratory sensitisation (asthma). Although the LD50 levels indicate a relatively low level of oral acute toxicity (LD50 1-5 g/kg bw), signs of neurotoxicity may appear in humans after exposure to lower doses.
tetraethylenepentamine	Triethylenetetramine is a severe irritant to skin and eyes and may induce skin sensitisation. Acute exposure to saturated vapour via inhalation was tolerated without impairment but exposure to aerosol may lead to reversible irritations of the mucous membranes in the airways. Tetraethylenepentamine (TEPA) has a low acute toxicity when taken orally and a higher toxicity via the dermal route most likely due to the corrosive nature of TEPA to the skin against neutralization by stomach acid. TEPA may be corrosive to the skin and eyes.
diethylenetriamine	Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema. Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure.
3-aminopropyltriethoxysilane	3-aminopropyltriethoxysilane (APTES) is severely irritating to the skin and eyes. Animal testing showed that prolonged exposure by inhalation may lead to a mild inflammation of the throat and changes in the cell pattern on the airway.

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Clear Epoxy Hardener - Part B & N-aminoethylpiperazine & tetraethylenepentamine & diethylenetriamine & N-aminoethylethanolamine	Ethyleneamines are very reactive and can cause chemical burns, skin rashes and asthma-like symptoms. It is readily absorbed through the skin and may cause eye blindness and irreparable damage.
pentaerythritol, propoxylated, mercaptoglycerol capped & benzyl alcohol & N-aminoethylpiperazine & tetraethylenepentamine & diethylenetriamine & N-aminoethylethanolamine & 3-aminopropyltriethoxysilane	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema.
pentaerythritol, propoxylated, mercaptoglycerol capped & N-aminoethylpiperazine & tetraethylenepentamine & diethylenetriamine & N-aminoethylethanolamine & 3-aminopropyltriethoxysilane & BIS[3-(TRIETHOXYSILYL)PROPYL]AMINE & 1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound.
N-aminoethylpiperazine & tetraethylenepentamine	The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
N-aminoethylpiperazine & tetraethylenepentamine & diethylenetriamine & 3-aminopropyltriethoxysilane	The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.
tetraethylenepentamine & diethylenetriamine	For alkyl polyamines: The alkyl polyamines cluster consists of two terminal primary and at least one secondary amine groups and are derivatives of low molecular weight ethylenediamine, propylenediamine or hexanediamine. Toxicity depends on route of exposure.
diethylenetriamine & 3-aminopropyltriethoxysilane	The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
N-aminoethylethanolamine	For N-aminoethylethanolamine: The substance does not appear to cause mutations. At high doses, it may reduce fertility.
3-aminopropyltriethoxysilane & BIS[3-(TRIETHOXYSILYL)PROPYL]AMINE & 1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane	Low molecular weight alkoxysilane can cause irreversible lung damage when inhaled at low dose. It is not an obvious skin irritant. Overexposure to most of these materials may cause adverse health effects. Many amine-based compounds can cause release of histamines, which, in turn, can trigger allergic and other physiological effects, including constriction of the bronchi or asthma and inflammation of the cavity of the nose. Whole-body symptoms include headache, nausea, faintness, anxiety, a decrease in blood pressure, rapid heartbeat, itching, reddening of the skin, urticaria (hives) and swelling of the face, which are usually transient. There are generally four routes of possible or potential exposure: inhalation, skin contact, eye contact, and swallowing. Inhalation: Inhaling vapours may result in moderate to severe irritation of the tissues of the nose and throat and can irritate the lungs.
BIS[3-(TRIETHOXYSILYL)PROPYL]AMINE & 1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane	No significant acute toxicological data identified in literature search.

Acute Toxicity	✔	**Carcinogenicity**	✘
Skin Irritation/Corrosion	✔	**Reproductivity**	✘
Serious Eye Damage/Irritation	✔	**STOT - Single Exposure**	✘
Respiratory or Skin sensitisation	✘	**STOT - Repeated Exposure**	✘
Mutagenicity	✘	**Aspiration Hazard**	✘

Legend: ✘ *– Data either not available or does not fill the criteria for classification*
✔ *– Data available to make classification*

SECTION 12 Ecological information

Toxicity

Clear Epoxy Hardener - Part B

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

pentaerythritol, propoxylated, mercaptoglycerol capped

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	48h	Crustacea	12mg/l	Not Available
LC50	96h	Fish	87mg/l	Not Available
EC50(ECx)	48h	Crustacea	12mg/l	Not Available

benzyl alcohol

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	96h	Algae or other aquatic plants	76.828mg/l	2

Continued...

	EC50	72h	Algae or other aquatic plants	500mg/l	2
	EC50	48h	Crustacea	230mg/l	2
	LC50	96h	Fish	10mg/l	4
	NOEC(ECx)	336h	Fish	5.1mg/l	2

trimethylhexamethylene diamine

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	29.5mg/l	Not Available
EC50(ECx)	72h	Algae or other aquatic plants	29.5mg/l	Not Available

triethylenetetramine

Endpoint	Test Duration (hr)	Species	Value	Source
BCF	1008h	Fish	<0.5	7
EC50	72h	Algae or other aquatic plants	2.5mg/l	1
EC50	48h	Crustacea	31.1mg/l	1
EC50	96h	Algae or other aquatic plants	3.7mg/l	4
ErC50	72h	Algae or other aquatic plants	2.5mg/l	1
LC50	96h	Fish	180mg/l	1
EC10(ECx)	72h	Algae or other aquatic plants	0.67mg/l	1

N-aminoethylpiperazine

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	495mg/l	1
EC50	48h	Crustacea	32mg/l	1
LC50	96h	Fish	>100mg/l	2
NOEC(ECx)	48h	Crustacea	18mg/l	1

tetraethylenepentamine

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	2.1mg/l	1
EC50	48h	Crustacea	24.1mg/l	1
NOEC(ECx)	72h	Algae or other aquatic plants	0.5mg/l	1

diethylenetriamine

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	96h	Algae or other aquatic plants	345.6mg/l	1
BCF	1008h	Fish	<0.3-1.7	7
EC50	72h	Algae or other aquatic plants	1164mg/l	1
EC50	48h	Crustacea	16mg/l	1
ErC50	72h	Algae or other aquatic plants	1164mg/l	1
LC50	96h	Fish	175mg/l	2
NOEC(ECx)	504h	Crustacea	5.6mg/l	1

N-aminoethylethanolamine

Endpoint	Test Duration (hr)	Species	Value	Source
BCF	1008h	Fish	<0.2	7
EC50	72h	Algae or other aquatic plants	>100mg/l	2
EC50	48h	Crustacea	22mg/l	1
LC50	96h	Fish	640mg/l	2
EC0(ECx)	48h	Crustacea	10mg/l	1

N-aminoethylethanolamine

Endpoint	Test Duration (hr)	Species	Value	Source
BCF	1008h	Fish	<0.2	7
EC50	72h	Algae or other aquatic plants	>100mg/l	2
EC50	48h	Crustacea	22mg/l	1
LC50	96h	Fish	640mg/l	2
EC0(ECx)	48h	Crustacea	10mg/l	1

trimethylolpropane triamine ether, propoxylated

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	48h	Crustacea	13mg/l	Not Available
LC50	96h	Fish	>100mg/l	2
EC50(ECx)	48h	Crustacea	13mg/l	Not Available

Continued...

bis(2-dimethylaminoethyl)ether

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	23mg/l	Not Available
EC50	48h	Crustacea	102mg/l	2
LC50	96h	Fish	100-215mg/l	Not Available
EC50(ECx)	72h	Algae or other aquatic plants	23mg/l	Not Available

3-aminopropyltriethoxysilane

Endpoint	Test Duration (hr)	Species	Value	Source
BCF	672h	Fish	<0.53	7
EC50	72h	Algae or other aquatic plants	603mg/l	2
EC50	48h	Crustacea	>100mg/l	2
NOEC(ECx)	504h	Crustacea	>=1mg/l	2
LC50	96h	Fish	>100mg/l	2

bis[3-(triethoxysilyl)propyl]amine

Endpoint	Test Duration (hr)	Species	Value	Source
EC50	72h	Algae or other aquatic plants	90.9mg/l	2
EC50	48h	Crustacea	>151.9mg/l	2
LC50	96h	Fish	>200mg/l	2
NOEC(ECx)	72h	Algae or other aquatic plants	51mg/l	2

1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

Legend: *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
For ethyleneamines:
Adsorption of the ethyleneamines correlates closely with both the cation exchange capacity (CEC) and organic content of the soil. Soils with increased CEC and organic content exhibited higher affinities for these amines.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
benzyl alcohol	LOW	LOW
trimethylhexamethylene diamine	HIGH	HIGH
triethylenetetramine	LOW	LOW
N-aminoethylpiperazine	HIGH	HIGH
tetraethylenepentamine	LOW	LOW
diethylenetriamine	LOW	LOW
N-aminoethylethanolamine	LOW	LOW
N-aminoethylethanolamine	LOW	LOW
bis(2-dimethylaminoethyl)ether	HIGH	HIGH
3-aminopropyltriethoxysilane	HIGH	HIGH
bis[3-(triethoxysilyl)propyl]amine	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
benzyl alcohol	LOW (LogKOW = 1.1)
trimethylhexamethylene diamine	LOW (LogKOW = 1.5988)
triethylenetetramine	LOW (BCF = 5)
N-aminoethylpiperazine	LOW (LogKOW = -1.5677)
tetraethylenepentamine	LOW (LogKOW = -3.1604)
diethylenetriamine	LOW (BCF = 1.7)
N-aminoethylethanolamine	LOW (BCF = 3.7)
N-aminoethylethanolamine	LOW (BCF = 3.7)
bis(2-dimethylaminoethyl)ether	LOW (LogKOW = -0.5386)
3-aminopropyltriethoxysilane	LOW (BCF = 5.4)
bis[3-(triethoxysilyl)propyl]amine	LOW (LogKOW = 1.7302)

Continued...

Mobility in soil

Ingredient	Mobility
benzyl alcohol	LOW (KOC = 15.66)
trimethylhexamethylene diamine	LOW (KOC = 1266)
triethylenetetramine	LOW (KOC = 309.9)
N-aminoethylpiperazine	LOW (KOC = 171.7)
tetraethylenepentamine	LOW (KOC = 1098)
diethylenetriamine	LOW (KOC = 87.53)
N-aminoethylethanolamine	MEDIUM (KOC = 3.524)
N-aminoethylethanolamine	MEDIUM (KOC = 3.524)
bis(2-dimethylaminoethyl)ether	LOW (KOC = 21.85)
3-aminopropyltriethoxysilane	LOW (KOC = 12150)
bis[3-(triethoxysilyl)propyl]amine	LOW (KOC = 21140000)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	▸ Containers may still present a chemical hazard/ danger when empty. ▸ Return to supplier for reuse/ recycling if possible. Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. ▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ Recycle wherever possible. ▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.

SECTION 14 Transport information

COMMENT	

Shipping container and transport vehicle placarding and labeling may vary from the below information. Products that are regulated for transport will be packaged and marked as Dangerous Goods in Limited Quantities according to US DOT, IATA and IMDG regulations. In case of reshipment, it is the responsibility of the shipper to determine the appropriate labels and markings in accordance with applicable transport regulations.

Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
pentaerythritol, propoxylated, mercaptoglycerol capped	Not Available
benzyl alcohol	Not Available
trimethylhexamethylene diamine	Not Available
triethylenetetramine	Not Available
N-aminoethylpiperazine	Not Available
tetraethylenepentamine	Not Available
diethylenetriamine	Not Available
N-aminoethylethanolamine	Not Available
N-aminoethylethanolamine	Not Available
trimethylolpropane triamine ether, propoxylated	Not Available
bis(2-dimethylaminoethyl)ether	Not Available
3-aminopropyltriethoxysilane	Not Available
bis[3-(triethoxysilyl)propyl]amine	Not Available
1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane	Not Available

Transport in bulk in accordance with the IGC Code

Product name	Ship Type

Continued...

Product name	Ship Type
pentaerythritol, propoxylated, mercaptoglycerol capped	Not Available
benzyl alcohol	Not Available
trimethylhexamethylene diamine	Not Available
triethylenetetramine	Not Available
N-aminoethylpiperazine	Not Available
tetraethylenepentamine	Not Available
diethylenetriamine	Not Available
N-aminoethylethanolamine	Not Available
N-aminoethylethanolamine	Not Available
trimethylolpropane triamine ether, propoxylated	Not Available
bis(2-dimethylaminoethyl)ether	Not Available
3-aminopropyltriethoxysilane	Not Available
bis[3-(triethoxysilyl)propyl]amine	Not Available
1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane	Not Available

SECTION 15 Regulatory information

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

pentaerythritol, propoxylated, mercaptoglycerol capped is found on the following regulatory lists

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

benzyl alcohol is found on the following regulatory lists

US - Massachusetts - Right To Know Listed Chemicals
US AIHA Workplace Environmental Exposure Levels (WEELs)
US DOE Temporary Emergency Exposure Limits (TEELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US Toxicology Excellence for Risk Assessment (TERA) Workplace Environmental Exposure Levels (WEEL)

trimethylhexamethylene diamine is found on the following regulatory lists

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

triethylenetetramine is found on the following regulatory lists

US - Massachusetts - Right To Know Listed Chemicals
US AIHA Workplace Environmental Exposure Levels (WEELs)
US DOE Temporary Emergency Exposure Limits (TEELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US Toxicology Excellence for Risk Assessment (TERA) Workplace Environmental Exposure Levels (WEEL)

N-aminoethylpiperazine is found on the following regulatory lists

US - Massachusetts - Right To Know Listed Chemicals
US DOE Temporary Emergency Exposure Limits (TEELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

tetraethylenepentamine is found on the following regulatory lists

US - Massachusetts - Right To Know Listed Chemicals
US AIHA Workplace Environmental Exposure Levels (WEELs)
US DOE Temporary Emergency Exposure Limits (TEELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US Toxicology Excellence for Risk Assessment (TERA) Workplace Environmental Exposure Levels (WEEL)

diethylenetriamine is found on the following regulatory lists

US - Massachusetts - Right To Know Listed Chemicals
US DOE Temporary Emergency Exposure Limits (TEELs)
US NIOSH Recommended Exposure Limits (RELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US TSCA Section 4/12 (b) - Sunset Dates/Status

N-aminoethylethanolamine is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
US - Massachusetts - Right To Know Listed Chemicals
US DOE Temporary Emergency Exposure Limits (TEELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

N-aminoethylethanolamine is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
US - Massachusetts - Right To Know Listed Chemicals
US DOE Temporary Emergency Exposure Limits (TEELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

trimethylolpropane triamine ether, propoxylated is found on the following regulatory lists

US DOE Temporary Emergency Exposure Limits (TEELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

bis(2-dimethylaminoethyl)ether is found on the following regulatory lists

US DOE Temporary Emergency Exposure Limits (TEELs)
US NIOSH Recommended Exposure Limits (RELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

3-aminopropyltriethoxysilane is found on the following regulatory lists

US DOE Temporary Emergency Exposure Limits (TEELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

bis[3-(triethoxysilyl)propyl]amine is found on the following regulatory lists

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

Continued...

1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane is found on the following regulatory lists

Not Applicable

Federal Regulations

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

Flammable (Gases, Aerosols, Liquids, or Solids)	No
Gas under pressure	No
Explosive	No
Self-heating	No
Pyrophoric (Liquid or Solid)	No
Pyrophoric Gas	No
Corrosive to metal	No
Oxidizer (Liquid, Solid or Gas)	No
Organic Peroxide	No
Self-reactive	No
In contact with water emits flammable gas	No
Combustible Dust	No
Carcinogenicity	No
Acute toxicity (any route of exposure)	Yes
Reproductive toxicity	No
Skin Corrosion or Irritation	Yes
Respiratory or Skin Sensitization	No
Serious eye damage or eye irritation	Yes
Specific target organ toxicity (single or repeated exposure)	No
Aspiration Hazard	No
Germ cell mutagenicity	No
Simple Asphyxiant	No
Hazards Not Otherwise Classified	No

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

None Reported

State Regulations

US. California Proposition 65

None Reported

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	No (bis[3-(triethoxysilyl)propyl]amine; 1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane)
Canada - DSL	No (1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane)
Canada - NDSL	No (pentaerythritol, propoxylated, mercaptoglycerol capped; benzyl alcohol; trimethylhexamethylene diamine; triethylenetetramine; N-aminoethylpiperazine; tetraethylenepentamine; diethylenetriamine; N-aminoethylethanolamine; N-aminoethylethanolamine; trimethylolpropane triamine ether, propoxylated; bis(2-dimethylaminoethyl)ether; 3-aminopropyltriethoxysilane; bis[3-(triethoxysilyl)propyl]amine; 1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane)
China - IECSC	No (1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane)
Europe - EINEC / ELINCS / NLP	No (pentaerythritol, propoxylated, mercaptoglycerol capped; 1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane)
Japan - ENCS	No (pentaerythritol, propoxylated, mercaptoglycerol capped; trimethylhexamethylene diamine; trimethylolpropane triamine ether, propoxylated; bis[3-(triethoxysilyl)propyl]amine; 1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane)
Korea - KECI	No (1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane)
New Zealand - NZIoC	No (bis[3-(triethoxysilyl)propyl]amine; 1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane)
Philippines - PICCS	No (1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane)
USA - TSCA	No (1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane)
Taiwan - TCSI	No (1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane)
Mexico - INSQ	No (pentaerythritol, propoxylated, mercaptoglycerol capped; trimethylolpropane triamine ether, propoxylated; bis(2-dimethylaminoethyl)ether; bis[3-(triethoxysilyl)propyl]amine; 1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane)
Vietnam - NCI	Yes
Russia - FBEPH	No (pentaerythritol, propoxylated, mercaptoglycerol capped; trimethylolpropane triamine ether, propoxylated; bis[3-(triethoxysilyl)propyl]amine; 1-(3-(triethoxysily)propyl)-2,2-diethoxy-1-aza-2-silacyclopentane)
Legend:	*Yes = All CAS declared ingredients are on the inventory* *No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.*

SECTION 16 Other information

Continued...

Revision Date	08/22/2023
Initial Date	09/19/2020

SDS Version Summary

Version	Date of Update	Sections Updated
5.8	08/21/2023	Toxicological information - Acute Health (skin), Toxicological information - Acute Health (swallowed), First Aid measures - Advice to Doctor, Toxicological information - Chronic Health, Hazards identification - Classification, Ecological Information - Environmental, First Aid measures - First Aid (swallowed), Handling and storage - Handling Procedure, Composition / information on ingredients - Ingredients, Exposure controls / personal protection - Personal Protection (hands/feet), Accidental release measures - Spills (minor), Handling and storage - Storage (storage requirement), Identification of the substance / mixture and of the company / undertaking - Synonyms

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.
The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

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end of SDS