EPOCAST® 1633 B US

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SECTION 1. IDENTIFICATION

Product name : EPOCAST® 1633 B US

Manufacturer or supplier's details

Company name of supplier : Huntsman Advanced Materials Americas LLC

Address : P.O. Box 4980
The Woodlands,
TX 77387
United States of America (USA)

Telephone : Non-Emergency: (800) 257-5547

E-mail address of person responsible for the SDS : Global_Product_EHS_AdMat@huntsman.com

Emergency telephone number : Chemtrec: (800) 424-9300 or (703) 527-3887

Recommended use of the chemical and restrictions on use

Recommended use : Hardener

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids : Category 4

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 4

Skin corrosion : Category 1B

Serious eye damage : Category 1

Skin sensitisation : Category 1

Germ cell mutagenicity : Category 2

Reproductive toxicity : Category 1B

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

Specific target organ toxicity - repeated exposure : Category 2

Short-term (acute) aquatic hazard : Category 3

Chronic aquatic toxicity : Category 2

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements :
H227 Combustible liquid.
H302 + H332 Harmful if swallowed or if inhaled.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H335 May cause respiratory irritation.
H341 Suspected of causing genetic defects.
H360F May damage fertility.
H373 May cause damage to organs through prolonged or repeated exposure.
H402 Harmful to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements :
Prevention:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P260 Do not breathe mist or vapours.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or

alcohol-resistant foam to extinguish.
P391 Collect spillage.
Storage:
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
Disposal:
P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
phenol	108-95-2	10 - 20
Glass, oxide, chemicals	65997-17-3	10 - 20
Diethylenetriamine	111-40-0	10 - 20
diethyl bis(2-hydroxyethyl)aminomethylphosphonate	2781-11-5	5 - 10
2,4,6-tris(dimethylaminomethyl)phenol	90-72-2	5 - 10
4,4'-isopropylidenediphenol	80-05-7	5 - 10
trimethoxy(methyl)silane	1185-55-3	1 - 5
[(dimethylamino)methyl]phenol	25338-55-0	1 - 5
2-aminoethanol	141-43-5	1 - 5
Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated	68937-54-2	1 - 5
bis[(dimethylamino)methyl]phenol	71074-89-0	1 - 5
ethylbenzene	100-41-4	0.1 - 1
melamine	108-78-1	0.1 - 1
octamethylcyclotetrasiloxane	556-67-2	< 0.1

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

SECTION 4. FIRST AID MEASURES

General advice	:	Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance. Symptoms of poisoning may appear several hours later. Treat symptomatically. Get medical attention if symptoms occur.
If inhaled	:	Call a physician or poison control centre immediately. If inhaled, remove to fresh air. Get medical attention if symptoms occur.
In case of skin contact	:	Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty. If on skin, rinse well with water. If on clothes, remove clothes.
In case of eye contact	:	Small amounts splashed into eyes can cause irreversible tissue damage and blindness. In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Keep respiratory tract clear. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.
Most important symptoms and effects, both acute and delayed	:	None known.
Protection of first-aiders	:	First Aid responders should pay attention to self-protection and use the recommended protective clothing If potential for exposure exists refer to Section 8 for specific personal protective equipment. Avoid inhalation, ingestion and contact with skin and eyes. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
Notes to physician	:	Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	Exercise caution when using a high volume water jet as it may scatter and spread fire
Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Carbon oxides Carbon dioxide (CO2) Carbon monoxide Nitrogen oxides (NOx) Silicon oxides
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. For safety reasons in case of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed containers.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Refer to protective measures listed in sections 7 and 8.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Do not spray on a naked flame or any incandescent material. Keep away from open flames, hot surfaces and sources of ignition.
Advice on safe handling	:	Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitisation of susceptible persons. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. Avoid formation of aerosol. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. To avoid spills during handling keep bottle on a metal tray. Dispose of rinse water in accordance with local and national regulations.
Conditions for safe storage	:	Prevent unauthorized access. No smoking. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Keep in properly labelled containers.
Materials to avoid	:	For incompatible materials please refer to Section 10 of this SDS.
Further information on storage stability	:	Stable under normal conditions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
phenol	108-95-2	TWA	5 ppm	ACGIH
		TWA	5 ppm 19 mg/m3	OSHA Z-1
		TWA	5 ppm 19 mg/m3	NIOSH REL
		C	15.6 ppm 60 mg/m3	NIOSH REL
		TWA	5 ppm	OSHA P0

			19 mg/m3	
Diethylenetriamine	111-40-0	TWA	1 ppm	ACGIH
		TWA	1 ppm 4 mg/m3	NIOSH REL
		TWA	1 ppm 4 mg/m3	OSHA P0
2-aminoethanol	141-43-5	TWA	3 ppm	ACGIH
		STEL	6 ppm	ACGIH
		TWA	3 ppm 6 mg/m3	OSHA Z-1
		TWA	3 ppm 8 mg/m3	NIOSH REL
		ST	6 ppm 15 mg/m3	NIOSH REL
		STEL	6 ppm 15 mg/m3	OSHA P0
		TWA	3 ppm 8 mg/m3	OSHA P0
ethylbenzene	100-41-4	TWA	20 ppm	ACGIH
		TWA	100 ppm 435 mg/m3	NIOSH REL
		ST	125 ppm 545 mg/m3	NIOSH REL
		TWA	100 ppm 435 mg/m3	OSHA Z-1
		STEL	125 ppm 545 mg/m3	OSHA P0
		TWA	100 ppm 435 mg/m3	OSHA P0
melamine	108-78-1	TWA	3 mg/m3	US WEEL
octamethylcyclotetrasiloxane	556-67-2	TWA	10 ppm	US WEEL

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
phenol	108-95-2	Phenol	Urine	End of shift (As soon as possible after exposure ceases)	250 mg/g Creatinine	ACGIH BEI
ethylbenzene	100-41-4	Sum of mandelic acid and phenyl glyoxylic acid	Urine	End of shift (As soon as possible after exposure ceases)	0.15 g/g creatinine	ACGIH BEI

Personal protective equipment

Respiratory protection	:	General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.
Respiratory protection	:	In the case of vapour formation use a respirator with an approved filter.
Hand protection		
Material	:	butyl-rubber
Break through time	:	> 8 h
Material	:	Ethyl Vinyl Alcohol Laminate (EVAL)
Break through time	:	> 8 h
Material	:	Nitrile rubber
Break through time	:	10 - 480 min
Remarks	:	Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Eye protection	:	Eye wash bottle with pure water Tightly fitting safety goggles Wear face-shield and protective suit for abnormal processing problems.
Skin and body protection	:	Impervious clothing Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Hygiene measures	:	Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke. Wash hands before breaks and immediately after handling the product.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	paste
Colour	:	amber
Odour	:	amine-like
Odour Threshold	:	No data is available on the product itself.
pH	:	No data is available on the product itself.
Melting point/freezing point	:	No data is available on the product itself.
Boiling point	:	No data is available on the product itself.
Flash point	:	145.0 °F / 62.8 °C Method: Pensky-Martens closed cup
Evaporation rate	:	No data is available on the product itself.
Flammability (solid, gas)	:	No data is available on the product itself.
Flammability (liquids)	:	No data is available on the product itself.
Upper explosion limit / Upper flammability limit	:	No data is available on the product itself.
Lower explosion limit / Lower flammability limit	:	No data is available on the product itself.
Vapour pressure	:	No data is available on the product itself.
Relative vapour density	:	No data is available on the product itself.
Relative density	:	0.68
Density	:	0.68 g/cm3 (68 °F / 20 °C)
Solubility(ies)		
Water solubility	:	slightly soluble (68 °F / 20 °C)
Solubility in other solvents	:	No data is available on the product itself.
Partition coefficient: n-octanol/water	:	No data is available on the product itself.
Auto-ignition temperature	:	No data is available on the product itself.
Decomposition temperature	:	No data is available on the product itself.
Self-Accelerating decomposition temperature (SADT)	:	No data is available on the product itself.
Viscosity	:	No data is available on the product itself.

Explosive properties	:	No data is available on the product itself.
Oxidizing properties	:	No data is available on the product itself.
Particle size	:	No data is available on the product itself.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Vapours may form explosive mixture with air.
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	None known.
Hazardous decomposition products	:	No decomposition if stored and applied as directed.
Hazardous decomposition products	:	carbon monoxide carbon dioxide Nitrogen oxides (NOx)

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity	:	Assessment: The component/mixture is moderately toxic after single ingestion.
Acute inhalation toxicity	:	Acute toxicity estimate: 1.69 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: Calculation method
Acute dermal toxicity	:	Acute toxicity estimate: 2,767 mg/kg Method: Calculation method

Components:

phenol:

Acute oral toxicity	:	LD50 (Rat, male and female): 340 - 540 mg/kg Method: OECD Test Guideline 401 Assessment: The component/mixture is moderately toxic after single ingestion.
Acute inhalation toxicity	:	LC50 (Rat, female): > 900 mg/m3 Exposure time: 8 h Test atmosphere: dust/mist Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rat, female): 660 mg/kg
Method: OECD Test Guideline 402
Assessment: The component/mixture is toxic after single contact with skin.

Diethylenetriamine:

Acute oral toxicity : LD50 (Rat, male): 1,620 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): 0.185 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): 1,045 mg/kg

diethyl bis(2-hydroxyethyl)aminomethylphosphonate:

Acute oral toxicity : LD50 (Rat, male): > 17,460 mg/kg
Method: OECD Test Guideline 401
GLP: no
Remarks: No mortality observed at this dose.

Acute inhalation toxicity : LC50 (Rat, male and female): > 524 mg/l
Exposure time: 1 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
GLP: no
Remarks: No mortality observed at this dose.

LC50 (Rat, male and female): > 520 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: No information available.
GLP: no
Remarks: No mortality observed at this dose.

Acute dermal toxicity : LD50 (Rabbit, male and female): > 2,000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: No mortality observed at this dose.

2,4,6-tris(dimethylaminomethyl)phenol:

Acute oral toxicity : LD50 (Rat, male and female): 2,169 mg/kg
Method: OECD Test Guideline 401
Assessment: The component/mixture is low toxic after single ingestion.

Acute dermal toxicity : LD50 (Rat, male): > 1 ml/kg
Assessment: The substance or mixture has no acute dermal toxicity

4,4'-isopropylidenediphenol:

Acute oral toxicity : LD50 (Rat, male and female): > 2,000 - < 5,000 mg/kg

Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat, male and female): > 170 mg/m3
Exposure time: 6 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit, male): ca. 6,400 mg/kg

trimethoxy(methyl)silane:

Acute oral toxicity : LD50 (Rat, male): 11,685 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 7605 ppm
Exposure time: 6 h
Test atmosphere: vapour
Method: OECD Test Guideline 403

Acute dermal toxicity : LD50 (Rabbit): > 9,500 mg/kg
Method: OECD Test Guideline 402

2-aminoethanol:

Acute oral toxicity : LD50 (Rat, male and female): 1,089 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : LC50 (Rat, male and female): 1.3 mg/l
Exposure time: 6 h
Test atmosphere: vapour
Assessment: The component/mixture is moderately toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rabbit, male and female): 2,504 mg/kg
Method: OECD Test Guideline 402
Assessment: The component/mixture is moderately toxic after single contact with skin.

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg
Method: estimated

Acute inhalation toxicity : LC50 (Rat, male and female): > 0.68 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 (Rabbit, male): > 5,000 mg/kg
Method: estimated

bis[(dimethylamino)methyl]phenol:

Acute oral toxicity : LD50 (Rat, male and female): 2,169 mg/kg
Method: OECD Test Guideline 401
Assessment: The component/mixture is low toxic after single

ingestion.

Acute dermal toxicity : LD50 (Rat, male): > 1 ml/kg
Assessment: The substance or mixture has no acute dermal toxicity

ethylbenzene:

Acute oral toxicity : LD50 (Rat): 3,500 - 5,460 mg/kg
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): 17.3 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Assessment: The component/mixture is moderately toxic after short term inhalation.

Acute dermal toxicity : LD50 (Rabbit): 15,400 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

melamine:

Acute oral toxicity : LD50 (Rat, male and female): 3,161 - 3,828 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 5190 mg/m3
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

octamethylcyclotetrasiloxane:

Acute oral toxicity : LD50 (Rat, male): > 4,800 mg/kg
Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity
Remarks: No mortality observed at this dose.

Acute inhalation toxicity : LC50 (Rat, male and female): 36 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Symptoms: Breathing difficulties

Acute dermal toxicity : LD50 (Rat, male and female): > 2,400 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: No mortality observed at this dose.

Skin corrosion/irritation

Components:

phenol:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	Causes burns.

Glass, oxide, chemicals:

Species	:	Rabbit
Assessment	:	No skin irritation
Method	:	OECD Test Guideline 404
Result	:	Normally reversible injuries

Diethylenetriamine:

Species	:	Rabbit
Assessment	:	Causes burns.
Result	:	Causes burns.

diethyl bis(2-hydroxyethyl)aminomethylphosphonate:

Species	:	Rabbit
Method	:	Other guidelines
Result	:	No skin irritation

2,4,6-tris(dimethylaminomethyl)phenol:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	Corrosive after 1 to 4 hours of exposure

Species	:	synthetic macromolecular bio-barrier
Method	:	OECD Test Guideline 435
Result	:	Corrosive after 1 to 4 hours of exposure

4,4'-isopropylidenediphenol:

Species	:	Rabbit
Method	:	OECD Test Guideline 404
Result	:	No skin irritation

trimethoxy(methyl)silane:

Species	:	Rabbit
Assessment	:	No skin irritation
Method	:	OECD Test Guideline 404
Result	:	No skin irritation

[(dimethylamino)methyl]phenol:

Result	:	Causes burns.

2-aminoethanol:

Species	:	Rabbit
Method	:	OECD Test Guideline 404

Result : Causes burns.

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Result : slight irritation

bis[(dimethylamino)methyl]phenol:

Species : Rabbit
Method : OECD Test Guideline 404
Result : Corrosive after 1 to 4 hours of exposure

Species : synthetic macromolecular bio-barrier
Method : OECD Test Guideline 435
Result : Corrosive after 1 to 4 hours of exposure

melamine:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

octamethylcyclotetrasiloxane:

Species : Rabbit
Exposure time : 24 h
Method : OECD Test Guideline 404
Result : No skin irritation

Serious eye damage/eye irritation

Components:

phenol:

Species : Rabbit
Result : Risk of serious damage to eyes.
Method : OECD Test Guideline 405

Diethylenetriamine:

Species : Rabbit
Result : Corrosive
Assessment : Corrosive

diethyl bis(2-hydroxyethyl)aminomethylphosphonate:

Species : Rabbit
Result : No eye irritation
Method : OECD Test Guideline 405

2,4,6-tris(dimethylaminomethyl)phenol:

Species : Rabbit
Result : Corrosive
Assessment : Corrosive
Method : Other guidelines

4,4'-isopropylidenediphenol:

Species	:	Rabbit
Result	:	Irreversible effects on the eye
Method	:	OECD Test Guideline 405

trimethoxy(methyl)silane:

Species	:	Rabbit
Result	:	No eye irritation
Assessment	:	No eye irritation
Method	:	OECD Test Guideline 405

2-aminoethanol:

Species	:	Rabbit
Result	:	Corrosive
Assessment	:	Corrosive

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Result	:	slight irritation

bis[(dimethylamino)methyl]phenol:

Species	:	Rabbit
Result	:	Corrosive
Assessment	:	Corrosive
Method	:	Other guidelines

melamine:

Species	:	Rabbit
Remarks	:	slight irritation

octamethylcyclotetrasiloxane:

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405

Respiratory or skin sensitisation

Components:

phenol:

Exposure routes	:	Skin
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.

Glass, oxide, chemicals:

Exposure routes	:	Skin
Species	:	Other
Result	:	Does not cause skin sensitisation.

Diethylenetriamine:

Exposure routes	:	Skin
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	May cause sensitisation by skin contact.
Remarks	:	Causes sensitisation.

Exposure routes	:	Respiratory Tract
Species	:	Mouse
Result	:	Does not cause respiratory sensitisation.

diethyl bis(2-hydroxyethyl)aminomethylphosphonate:

Test Type	:	Direct Peptide Reactivity Assay (DPRA)
Exposure routes	:	Dermal
Method	:	OECD Test Guideline 442C
Result	:	Did not cause sensitisation on laboratory animals.
GLP	:	yes

2,4,6-tris(dimethylaminomethyl)phenol:

Exposure routes	:	Skin
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.

4,4'-isopropylidenediphenol:

Exposure routes	:	Skin
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	Does not cause skin sensitisation.

Exposure routes	:	Skin
Species	:	Humans
Assessment	:	May cause sensitisation by skin contact.
Result	:	Causes sensitisation.

trimethoxy(methyl)silane:

Exposure routes	:	Skin
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Causes sensitisation.

2-aminoethanol:

Exposure routes	:	Skin
Species	:	Guinea pig
Result	:	Does not cause skin sensitisation.

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Species	:	Guinea pig
Assessment	:	Did not cause sensitisation on laboratory animals.
Result	:	Did not cause sensitisation on laboratory animals.

bis[(dimethylamino)methyl]phenol:

Exposure routes	:	Skin
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.

melamine:

Exposure routes	:	Skin
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.

octamethylcyclotetrasiloxane:

Test Type	:	Maximisation Test
Exposure routes	:	Skin
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

Components:

phenol:

Germ cell mutagenicity - Assessment	:	In vitro tests showed mutagenic effects

Diethylenetriamine:

Genotoxicity in vivo	:	Cell type: Somatic Application Route: Oral Dose: 85 - 850 mg/kg Method: OECD Test Guideline 474 Result: negative Application Route: Oral Result: negative

diethyl bis(2-hydroxyethyl)aminomethylphosphonate:

Genotoxicity in vitro	:	Test Type: reverse mutation assay Test system: Salmonella typhimurium Concentration: 4, 20, 100, 500, 2500 µg/plate Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: reverse mutation assay Test system: Salmonella typhimurium Concentration: 31.3,62.5,125,250,500 µg/plate Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: negative Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells
Concentration: ≥ 0.3 µL/mL
Metabolic activation: without metabolic activation
Method: OECD Test Guideline 490
Result: positive

Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Concentration: ≥ 1.1 µL/mL
Metabolic activation: Metabolic activation
Method: OECD Test Guideline 490
Result: positive

Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Concentration: ≥ 1.5 µL/mL
Metabolic activation: Metabolic activation
Method: OECD Test Guideline 490
Result: positive

Germ cell mutagenicity - Assessment : In vitro tests showed mutagenic effects

2,4,6-tris(dimethylaminomethyl)phenol:

Genotoxicity in vitro : Concentration: 5000 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Concentration: 2500 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

4,4'-isopropylidenediphenol:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Result: negative

Genotoxicity in vivo : Method: OECD Test Guideline 474
Result: negative

trimethoxy(methyl)silane:

Genotoxicity in vivo : Application Route: Oral
Dose: 2000 mg/kg
Method: OECD Test Guideline 474
Result: negative

[(dimethylamino)methyl]phenol:

Genotoxicity in vitro : Test Type: Ames test

Test system: Salmonella tryphimurium and E. coli
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

2-aminoethanol:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Metabolic activation: negative
Result: negative

Genotoxicity in vivo : Application Route: Oral
Exposure time: 24 h
Dose: 375 - 1500 mg/kg
Method: OECD Test Guideline 474
Result: negative

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Germ cell mutagenicity - Assessment : In vitro tests did not show mutagenic effects, Animal testing did not show any mutagenic effects.

bis[(dimethylamino)methyl]phenol:

Genotoxicity in vitro : Concentration: 5000 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Concentration: 2500 ug/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

ethylbenzene:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Genotoxicity in vivo : Method: OECD Test Guideline 474
Result: negative

Method: OECD Test Guideline 486
Result: negative

melamine:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: Chromosome aberration test in vitro
Result: negative

Metabolic activation: with and without metabolic activation
Method: In vitro mammalian cell gene mutation test
Result: negative

Genotoxicity in vivo : Application Route: Intraperitoneal injection
Method: Skin Sensitization
Result: negative

octamethylcyclotetrasiloxane:

Genotoxicity in vitro : Test Type: gene mutation test
Test system: Salmonella typhimurium
Concentration: 0.0003 - 5.0 mg/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Concentration: 0.0003 - 0.03 mg/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Concentration: 0.0032 - 0.05 µl/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Rat (male and female)
Cell type: Bone marrow
Application Route: Inhalation
Exposure time: 6 h/day for 5 days
Dose: 0, 720 ppm
Method: OECD Test Guideline 475
Result: negative

Test Type: dominant lethal test
Species: Rat (male and female)
Cell type: Bone marrow
Application Route: Oral
Exposure time: 5 days/week for 8 weeks
Dose: 100, 500, 1000 mg/kg bw/day
Method: OECD Test Guideline 478
Result: negative

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity

Components:

phenol:

Species	:	Mouse, male and female
Application Route	:	Oral
Exposure time	:	103 weeks
Dose	:	5000 ppm
Method	:	OECD Test Guideline 451
Result	:	negative

Diethylenetriamine:

Species	:	Mouse, male
Application Route	:	Dermal
Dose	:	56.3 mg/kg
Frequency of Treatment	:	3 daily
Result	:	negative

4,4'-isopropylidenediphenol:

Species	:	Rat, male and female
Application Route	:	Oral
Exposure time	:	103 weeks
Frequency of Treatment	:	7 daily
Result	:	negative

octamethylcyclotetrasiloxane:

Species	:	Rat, male and female
Application Route	:	Inhalation
Exposure time	:	24 month(s)
Dose	:	10, 30, 150, 700 ppm
Frequency of Treatment	:	6 hours/day, 5 days/week
	:	150 ppm
Method	:	OECD Test Guideline 453
Result	:	positive
Symptoms	:	female reproductive effects, carcinogenic effects
Remarks	:	Causes tumors in rodents. Research has shown that the mechanism of carcinogenicity is not relevant to humans.
Carcinogenicity - Assessment	:	Weight of evidence does not support classification as a carcinogen

IARC	Group 2A: Probably carcinogenic to humans	
	Glass, oxide, chemicals (glass)	65997-17-3
	Group 2B: Possibly carcinogenic to humans	
	Glass, oxide, chemicals (special-purpose fibres)	65997-17-3
	Group 2B: Possibly carcinogenic to humans	
	ethylbenzene	100-41-4
	Group 2B: Possibly carcinogenic to humans	
	melamine	108-78-1

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Components:

phenol:

Effects on fertility : Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 416
Remarks: No significant adverse effects were reported

Species: Mouse, female
Application Route: Oral

Effects on foetal development : Species: Rat, female
Application Route: Oral
General Toxicity Maternal: NOAEL: 60 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Diethylenetriamine:

Effects on fertility : Species: Rat, male and female
Application Route: Oral
General Toxicity - Parent: NOAEL: 30 mg/kg wet weight
Method: OECD Test Guideline 421

Effects on foetal development : Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL: 100 mg/kg body weight
Method: OECD Test Guideline 421
Result: No adverse effects

diethyl bis(2-hydroxyethyl)aminomethylphosphonate:

Effects on fertility : Test Type: Reproduction / Developmental Toxicity Screening Test
Species: Rat, male and female
Application Route: Oral
Dose: 50, 250, 750 milligram per kilogram
Frequency of Treatment: 7 days/week
General Toxicity - Parent: NOAEL: >= 750 mg/kg body weight
General Toxicity F1: NOAEL: >= 750 mg/kg body weight
Method: OECD Test Guideline 421
Result: negative
GLP: yes

2,4,6-tris(dimethylaminomethyl)phenol:

Effects on fertility : Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 422

Remarks: No significant adverse effects were reported

4,4'-isopropylidenediphenol:

Effects on fertility : Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 416
Result: Embryotoxic effects and adverse effects on the offspring were detected.

Effects on foetal development : Species: Rat, female
Application Route: Oral
General Toxicity Maternal: NOAEL: < 160 mg/kg body weight
Method: OECD Test Guideline 416
Result: No teratogenic effects

Reproductive toxicity - Assessment : Clear evidence of adverse effects on sexual function and fertility, based on animal experiments.

trimethoxy(methyl)silane:

Effects on fertility : Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 422
Result: negative

Effects on foetal development : Species: Rat, male and female
Application Route: Oral
General Toxicity Maternal: NOAEL: 1,000 mg/kg body weight
Method: OECD Test Guideline 422
Result: No teratogenic effects

2-aminoethanol:

Effects on fertility : Species: Rat, male and female
Application Route: Oral
Target Organs: Reproductive organs
Method: OECD Test Guideline 416
Result: No effects on fertility and early embryonic development were detected.

Effects on foetal development : Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL: 120 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

Species: Rat
Application Route: Dermal
General Toxicity Maternal: NOAEL: 75 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

bis[(dimethylamino)methyl]phenol:

Effects on fertility : Species: Rat, male and female
Application Route: Oral

Method: OECD Test Guideline 422
Remarks: No significant adverse effects were reported

ethylbenzene:

Effects on fertility : General Toxicity - Parent: NOAEL: 500 ppm
Method: OECD Test Guideline 416

Effects on foetal development : General Toxicity Maternal: NOAEL: 500 ppm
Teratogenicity: NOAEL: 2,000 ppm
Developmental Toxicity: NOAEL: 500 ppm

melamine:

Effects on foetal development : Species: Rat, female
Application Route: Oral
General Toxicity Maternal: NOAEL: 600 mg/kg body weight
Method: OECD Test Guideline 414
Result: No teratogenic effects

octamethylcyclotetrasiloxane:

Effects on fertility : Test Type: Two-generation study
Species: Rat, male and female
Application Route: Inhalation
Dose: 70, 300, 500, 700 ppm
Duration of Single Treatment: 6 h
Frequency of Treatment: 7 days/week
General Toxicity - Parent: NOAEC: 300 ppm
General Toxicity F1: NOAEC: 300 ppm
Method: OECD Test Guideline 416
Result: positive

Effects on foetal development : Species: Rat, female
Application Route: Inhalation
Dose: 100, 300, 700 ppm
Duration of Single Treatment: 6 h
Frequency of Treatment: 7 days/week
General Toxicity Maternal: NOAEL: 300 ppm
Teratogenicity: NOAEL: > 700 ppm
Symptoms: Maternal effects
Method: OECD Test Guideline 414
Result: No teratogenic effects, Some evidence of adverse effects on development, based on animal experiments.

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, based on animal experiments.
Did not show teratogenic effects in animal experiments.

STOT - single exposure

Product:

Exposure routes : Inhalation
Target Organs : Respiratory Tract
Assessment : May cause respiratory irritation.

Components:

phenol:

Exposure routes	:	Inhalation
Target Organs	:	Narcotic effects
Assessment	:	The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

Diethylenetriamine:

Target Organs	:	Respiratory Tract
Assessment	:	May cause respiratory irritation.

4,4'-isopropylidenediphenol:

Assessment	:	The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

2-aminoethanol:

Exposure routes	:	Inhalation
Target Organs	:	Respiratory Tract
Assessment	:	May cause respiratory irritation.

STOT - repeated exposure

Product:

Target Organs	:	Adrenal gland, Gastrointestinal tract, Liver, Thyroid
Assessment	:	May cause damage to organs through prolonged or repeated exposure.

Exposure routes	:	Ingestion
Target Organs	:	Brain
Assessment	:	May cause damage to organs through prolonged or repeated exposure.

Exposure routes	:	Skin contact
Target Organs	:	Central nervous system
Assessment	:	May cause damage to organs through prolonged or repeated exposure.

Components:

phenol:

Target Organs	:	Central nervous system
Assessment	:	May cause damage to organs through prolonged or repeated exposure.

trimethoxy(methyl)silane:

Target Organs	:	Liver, Thyroid, Adrenal gland, Gastrointestinal tract
Assessment	:	May cause damage to organs through prolonged or repeated exposure.

ethylbenzene:

Exposure routes	:	Inhalation
Target Organs	:	Lungs, Liver, Kidney, Central nervous system
Assessment	:	May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

phenol:

Species	:	Monkey, male
NOEC	:	1.8 mg/kg, > 19.6 mg/m3
Application Route	:	Ingestion
Test atmosphere	:	dust/mist
Exposure time	:	672 h
Number of exposures	:	8 h
Method	:	Subacute toxicity

Species	:	Rabbit
LOEL	:	260 mg/kg
Application Route	:	Skin contact
Exposure time	:	432 h
Method	:	Subacute toxicity

Species	:	Rat, male and female
NOAEL	:	450 mg/kg
Application Route	:	Ingestion
Exposure time	:	103 Weeks
Number of exposures	:	7 d
Method	:	Chronic toxicity

Glass, oxide, chemicals:

Species	:	Rat, male
LOEC	:	2.4 mg/m3
Test atmosphere	:	dust/mist
Exposure time	:	2,160 h
Number of exposures	:	6 h
Method	:	Directive 67/548/EEC, Annex, B.29

Diethylenetriamine:

Species	:	Rat, male and female
NOEC	:	70 - 80 mg/m3
Application Route	:	Ingestion
Test atmosphere	:	vapour
Exposure time	:	360 h
Number of exposures	:	7 d
Method	:	Subchronic toxicity

Species	:	Rat, male and female
NOAEL	:	114 mg/kg/d
Application Route	:	Skin contact
Exposure time	:	9,600 h
Number of exposures	:	6 d
Method	:	Chronic toxicity

diethyl bis(2-hydroxyethyl)aminomethylphosphonate:

Species	:	Rat, male and female
NOAEL	:	>= 500 mg/kg
LOAEL	:	> 500 mg/kg
Application Route	:	oral (gavage)
Exposure time	:	13 weeks
Number of exposures	:	7 days/week
Dose	:	20, 100, 500 mg/kg bw/day
Method	:	OECD Test Guideline 408

2,4,6-tris(dimethylaminomethyl)phenol:

Species	:	Rat, male and female
NOEL	:	15 mg/kg
Application Route	:	Ingestion
Exposure time	:	1,032 h
Number of exposures	:	7 d
Method	:	Subacute toxicity

4,4'-isopropylidenediphenol:

Species	:	Dog, male and female
NOEC	:	75 mg/kg, 10 mg/m3
Application Route	:	Ingestion
Test atmosphere	:	dust/mist
Exposure time	:	2,160 h
Number of exposures	:	7 d
Method	:	Subchronic toxicity

Species	:	Rat, male and female
LOAEL	:	600 mg/kg
Application Route	:	Ingestion
Exposure time	:	672 h
Number of exposures	:	7 d
Method	:	Subchronic toxicity

trimethoxy(methyl)silane:

Species	:	Rat, male and female
NOEC	:	50 mg/kg, 100 ppm
Application Route	:	Ingestion
Test atmosphere	:	vapour
Exposure time	:	672 h
Number of exposures	:	7 d
Method	:	OECD Test Guideline 413

2-aminoethanol:

Species	:	Rat, male and female
NOEC	:	300 mg/m3
Application Route	:	Ingestion
Test atmosphere	:	vapour
Exposure time	:	672 h
Number of exposures	:	7 d
Method	:	OECD Test Guideline 412

bis[(dimethylamino)methyl]phenol:

Species	:	Rat, male and female
NOEL	:	15 mg/kg
Application Route	:	Ingestion
Exposure time	:	1,032 h
Number of exposures	:	7 d
Method	:	Subacute toxicity

ethylbenzene:

Species	:	Rat, male and female
NOAEL	:	75 mg/kg bw
Application Route	:	oral (gavage)
Exposure time	:	28 d
Dose	:	75/250/750 mg/kg bw
Control Group	:	yes
Method	:	OECD Test Guideline 407
Target Organs	:	Liver
Remarks	:	Subacute toxicity

Species	:	Rat, male and female
NOAEL	:	75 mg/kg bw
Application Route	:	oral (gavage)
Exposure time	:	90 d
Dose	:	75/250/750 mg/kg bw
Control Group	:	yes
Method	:	OECD Test Guideline 408

Species	:	Mouse, male and female
NOAEL	:	3.4 mg/l
Application Route	:	Inhalation
Exposure time	:	28 d
Dose	:	0,4/1,7/3,4 mg/L
Control Group	:	yes
Method	:	OECD Test Guideline 412

Species	:	Rat, male and female
NOAEL	:	1084
NOAEL	:	mg/m3
Application Route	:	inhalation (vapour)
Exposure time	:	104 week
Dose	:	325/1084/3251 mg/m3
Control Group	:	yes
Method	:	OECD Test Guideline 453

Species	:	Rat, male and female
NOAEL	:	4.74 mg/l
Application Route	:	Inhalation
Exposure time	:	13 week
Dose	:	0,47/1,18/2,37/3,55/4,74 mg/L
Control Group	:	yes
Method	:	OECD Test Guideline 413
Target Organs	:	Liver

Species	:	Mouse, male and female

NOAEL	:	3251
NOAEL	:	mg/m3
Application Route	:	Inhalation
Exposure time	:	104 week
Dose	:	325/1084/3251 mg/m3
Control Group	:	yes
Method	:	OECD Test Guideline 453

Species	:	Rabbit, male and female
NOAEL	:	6.8 mg/l
Application Route	:	Inhalation
Exposure time	:	28 d
Dose	:	1,7/3,4/6,8 mg/L
Control Group	:	yes
Method	:	OECD Test Guideline 412

melamine:

Species	:	Rat, male and female
LOAEL	:	72 mg/kg
Application Route	:	Ingestion
Exposure time	:	13 Weeks
Method	:	Subchronic toxicity

octamethylcyclotetrasiloxane:

Species	:	Rat, male and female
NOAEL	:	150 ppm
Application Route	:	Inhalation
Test atmosphere	:	vapour
Exposure time	:	24 Months
Number of exposures	:	6 hours/day, 5 days/week
Dose	:	10, 30, 150, 700 ppm
Control Group	:	no
Method	:	OECD Test Guideline 453
Remarks	:	Not classified due to data which are conclusive although insufficient for classification.

Species	:	Rabbit, male and female
NOAEL	:	>=1 ml/kg
Application Route	:	Dermal
Exposure time	:	3 Weeks
Number of exposures	:	6 hours/day, 5 days/week
Dose	:	0.1, 0.3, 1 ml/kg bw
Control Group	:	yes
Method	:	OECD Test Guideline 410
Remarks	:	No significant adverse effects were reported

Aspiration toxicity

Components:

ethylbenzene:

May be fatal if swallowed and enters airways.

Experience with human exposure

No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Product:

Remarks : No data available

Components:

trimethoxy(methyl)silane:

Remarks : Solvents may degrease the skin.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

phenol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 8.9 mg/l
Exposure time: 96 h
Test Type: flow-through test
Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 3.1 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids

Toxicity to fish (Chronic toxicity) : NOEC (Other): 0.077 mg/l
Exposure time: 60 d
Test Type: semi-static test
Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10 (Daphnia magna (Water flea)): 4.6 mg/l
Exposure time: 16 d
Test Type: semi-static test
Test substance: Fresh water

Glass, oxide, chemicals:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 1,000 mg/l
Exposure time: 96 h
Test Type: Other guidelines
Test substance: Fresh water
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 1,000 mg/l Exposure time: 72 h Test Type: semi-static test Test substance: Fresh water Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants	:	EgC50 (Selenastrum capricornutum (green algae)): > 1,000 mg/l Exposure time: 72 h Test Type: semi-static test Method: OECD Test Guideline 201

Diethylenetriamine:

Toxicity to fish	:	LC50: 430 mg/l Exposure time: 96 h Test Type: semi-static test Test substance: Fresh water Method: Directive 67/548/EEC, Annex V, C.1.
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 64.6 mg/l Exposure time: 48 h Test Type: static test Test substance: Fresh water Method: Regulation (EC) No. 440/2008, Annex, C.2 EC50 (Daphnia magna (Water flea)): 16 mg/l Exposure time: 48 h Test Type: static test Test substance: Fresh water Method: DIN 38412
Toxicity to algae/aquatic plants	:	EbC50 (Selenastrum capricornutum (green algae)): 1,164 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 201
Toxicity to fish (Chronic toxicity)	:	NOEC: 10 mg/l Exposure time: 28 d Test Type: semi-static test Test substance: Fresh water Method: OECD Test Guideline 210
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 5.6 mg/l Exposure time: 21 d Test Type: semi-static test Test substance: Fresh water Method: Directive 67/548/EEC, Annex V, C.20
Toxicity to soil dwelling organisms	:	EC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg Exposure time: 56 d Method: OECD Test Guideline 222

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

diethyl bis(2-hydroxyethyl)aminomethylphosphonate:

Toxicity to fish : NOEC (Oncorhynchus mykiss (rainbow trout)): 1,800 mg/l
Exposure time: 96 h
Test Type: static test
Analytical monitoring: no
Test substance: Fresh water
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : NOEC (Daphnia magna (Water flea)): 936 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: flow-through test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): > 86 mg/l
Exposure time: 96 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201
GLP: yes

NOECr (Pseudokirchneriella subcapitata (green algae)): 33 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201
GLP: yes

EyC50 (Pseudokirchneriella subcapitata (green algae)): > 86 mg/l
Exposure time: 96 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201
GLP: yes

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

2,4,6-tris(dimethylaminomethyl)phenol:

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 175 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates : LC50 (Palaeomonetes vulgaris (Grass shrimp)): 718 mg/l
End point: mortality
Exposure time: 96 h
Test Type: static test
Analytical monitoring: no
Test substance: Marine water

Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): 84 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201

NOEC (Desmodesmus subspicatus (green algae)): 6.25 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201

4,4'-isopropylidenediphenol:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 7.5 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50: 3.9 - 10.2 mg/l
Exposure time: 48 h

(Ceriodaphnia dubia (Water flea)):

Toxicity to algae/aquatic plants : EC50 (Selenastrum capricornutum (green algae)): 2.5 - 3.1 mg/l
Exposure time: 96 h

Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 0.016 mg/l
Exposure time: 444 d
Test Type: flow-through test
Test substance: Fresh water
Method: Fish Life Cycle Toxicity
Remarks: Toxic to aquatic organisms.

Ecotoxicology Assessment

Chronic aquatic toxicity : Toxic to aquatic life with long lasting effects.

trimethoxy(methyl)silane:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 110 mg/l
Exposure time: 96 h
Test Type: flow-through test
Test substance: Fresh water

Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 122 mg/l
Exposure time: 48 h
Test Type: flow-through test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EgC50 (Selenastrum capricornutum (green algae)): > 120 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 201

[(dimethylamino)methyl]phenol:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 73 mg/l
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Pseudokirchneriella subcapitata (green algae)): 10.3 mg/l
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201

2-aminoethanol:

Toxicity to fish : LC50 (Cyprinus carpio (Carp)): 349 mg/l
Exposure time: 96 h
Test Type: semi-static test
Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 65 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: Directive 67/548/EEC, Annex V, C.2.

Toxicity to algae/aquatic plants : ErC50: 2.8 mg/l
Exposure time: 72 h
Test substance: Fresh water
Method: OECD Test Guideline 201

NOECr: 1 mg/l
Exposure time: 72 h
Test substance: Fresh water
Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity) : NOEC (Oryzias latipes (Orange-red killifish)): 1.2 mg/l
Exposure time: 30 d
Test substance: Fresh water
Method: OECD Test Guideline 210

Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): 0.85 mg/l

aquatic invertebrates (Chronic toxicity)		Exposure time: 21 d Test substance: Fresh water Method: OECD Test Guideline 211

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Toxicity to fish	:	EC50 (Fish): 10 - 100 mg/l Remarks: Based on data from similar materials LC50 (Cyprinodon variegatus (sheepshead minnow)): > 1,080 mg/l Exposure time: 96 h Remarks: Based on data from similar materials LC50 (Oncorhynchus mykiss (rainbow trout)): 892 mg/l Exposure time: 96 h Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 1,040 mg/l Exposure time: 48 h Test Type: static test Remarks: Based on data from similar materials LC50 (Mysidopsis bahia (opossum shrimp)): 11 mg/l Exposure time: 96 h Test Type: static test Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	:	NOECr (Skeletonema costatum (marine diatom)): 3 mg/l Exposure time: 72 h Test Type: static test Remarks: Based on data from similar materials ErC50 (Skeletonema costatum (marine diatom)): 14 mg/l Exposure time: 72 h Test Type: static test Remarks: Based on data from similar materials ErC50 (Lemna gibba G3 (gibbous duckweed)): > 1,020 mg/l Exposure time: 7 d Test Type: static test Remarks: Based on data from similar materials
Toxicity to microorganisms	:	EC50 (activated sludge): 115 mg/l Exposure time: 3 h Remarks: Based on data from similar materials

bis[(dimethylamino)methyl]phenol:

Toxicity to fish	:	LC50 (Cyprinus carpio (Carp)): 175 mg/l Exposure time: 96 h Test Type: static test Test substance: Fresh water
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Palaeomonetes vulgaris (Grass shrimp)): 718 mg/l End point: mortality Exposure time: 96 h

Test Type: static test
Analytical monitoring: no
Test substance: Marine water

Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): 84 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201

NOEC (Desmodesmus subspicatus (green algae)): 6.25 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Test substance: Fresh water
Method: OECD Test Guideline 201

ethylbenzene:

Toxicity to fish : LC50: 4.2 mg/l
Exposure time: 96 h

LC50: 9.2 mg/l
Exposure time: 96 h

LC50: 12.1 mg/l
Exposure time: 96 h

LC50: 5.1 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50: 1.81 - 2.38 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : IC50: 4.6 mg/l
Exposure time: 72 h

EC50: 3.6 mg/l
Exposure time: 96 h

NOEC: 3.4 mg/l
Exposure time: 96 h

EC50: 7.7 mg/l
Exposure time: 96 h

Toxicity to fish (Chronic toxicity) : NOEL: 0.96 mg/l
Exposure time: 7 d

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

melamine:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): > 3,000 mg/l Exposure time: 96 h Test Type: semi-static test Test substance: Fresh water
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia magna (Water flea)): > 1,000 mg/l Exposure time: 48 h Test Type: static test Test substance: Fresh water Method: Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids
Toxicity to algae/aquatic plants	:	EC50 (Selenastrum capricornutum (green algae)): 325 mg/l Exposure time: 96 h Test Type: static test Test substance: Fresh water
Toxicity to fish (Chronic toxicity)	:	NOEC (Oncorhynchus mykiss (rainbow trout)): 1,500 mg/l Exposure time: 28 d Test Type: semi-static test Test substance: Fresh water
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 18 mg/l Exposure time: 21 d Test Type: semi-static test Test substance: Fresh water

octamethylcyclotetrasiloxane:

Toxicity to fish	:	NOEC (Oncorhynchus mykiss (rainbow trout)): >= 22 µg/l End point: mortality Exposure time: 96 h Test Type: flow-through test Analytical monitoring: yes Test substance: Fresh water Method: Fish Acute Toxicity Test Remarks: No toxicity at the limit of solubility
Toxicity to daphnia and other aquatic invertebrates	:	NOEC (Daphnia magna (Water flea)): >= 15 µg/l End point: Immobilization Exposure time: 48 h Test Type: flow-through test Analytical monitoring: yes Test substance: Fresh water Method: Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids Remarks: No toxicity at the limit of solubility
Toxicity to algae/aquatic plants	:	NOECr: < 0.022 mg/l Exposure time: 96 h
Toxicity to fish (Chronic toxicity)	:	NOEC (Fish): 0.0044 mg/l Exposure time: 14 d
Toxicity to daphnia and other	:	NOEC (Daphnia (water flea)): 0.0079 mg/l

aquatic invertebrates (Chronic toxicity)		Exposure time: 21 d
M-Factor (Chronic aquatic toxicity)	:	10
Sediment toxicity	:	NOEC: 13 mg/kg sediment dw Analytical monitoring: yes Solvent: yes Duration: 28 d Test Type: static test Water: Fresh water Sediment: Natural Exposure duration: 28 d Nominal / Measured: Measured

Ecotoxicology Assessment

Acute aquatic toxicity	:	This product has no known ecotoxicological effects., No toxicity at the limit of solubility
Chronic aquatic toxicity	:	Very toxic to aquatic life with long lasting effects.

Persistence and degradability

Components:

phenol:

Biodegradability	:	Inoculum: activated sludge Concentration: 30 mg/l Result: Readily biodegradable. Biodegradation: 62 % Exposure time: 4.16667 d Method: OECD Test Guideline 301C

Diethylenetriamine:

Biodegradability	:	Inoculum: activated sludge Result: Readily biodegradable. Biodegradation: 87 % Exposure time: 21 d Method: OECD Test Guideline 301D
Photodegradation	:	Test Type: Air Rate constant: 500000 Degradation (direct photolysis): 50 %

diethyl bis(2-hydroxyethyl)aminomethylphosphonate:

Biodegradability	:	Result: Not readily biodegradable.

2,4,6-tris(dimethylaminomethyl)phenol:

Biodegradability	:	aerobic Inoculum: activated sludge, non-adapted Concentration: 2 mg/l Result: Not biodegradable

Biodegradation: 4 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

4,4'-isopropylidenediphenol:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 1 - 2 %
Exposure time: 28 d

trimethoxy(methyl)silane:

Biodegradability : Inoculum: activated sludge
Concentration: 11.2 mg/l
Result: Not readily biodegradable.
Biodegradation: 54 %
Exposure time: 28 d

Stability in water : Degradation half life (DT50): 2.2 hrs (25 °C) pH: 7
Method: OECD Test Guideline 111
Remarks: Fresh water

[(dimethylamino)methyl]phenol:

Biodegradability : aerobic
Inoculum: Sewage (STP effluent)
Concentration: 22 mg/l
Result: Readily biodegradable.
Biodegradation: 72 %
Exposure time: 28 d
Method: OECD Test Guideline 301F

2-aminoethanol:

Biodegradability : Inoculum: activated sludge
Concentration: 20 mg/l
Result: Readily biodegradable.
Biodegradation: > 90 %
Exposure time: 21 d
Method: OECD Test Guideline 301A

Photodegradation : Test Type: Air
Rate constant: 35.844
Degradation (direct photolysis): 50 %

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 15.6 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
Remarks: Based on data from similar materials

bis[(dimethylamino)methyl]phenol:

Biodegradability : aerobic
Inoculum: activated sludge, non-adapted
Concentration: 2 mg/l

Result: Not biodegradable
Biodegradation: 4 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

ethylbenzene:

Biodegradability : Result: Readily biodegradable.
Biodegradation: > 60 %
Exposure time: 28 d

melamine:

Biodegradability : Inoculum: activated sludge
Concentration: 100 mg/l
Result: Not readily biodegradable.
Biodegradation: < 10 %
Exposure time: 28 d
Method: OECD Test Guideline 302B

octamethylcyclotetrasiloxane:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 10 mg/l
Result: Not readily biodegradable.
Biodegradation: 3.7 %
Exposure time: 29 d
Method: OECD Test Guideline 310

Stability in water : Degradation half life (DT50): 3.9 d (25 °C) pH: 7
Method: OECD Test Guideline 111

Photodegradation : Test Type: Air
Degradation (indirect photolysis): 50 % Degradation half life: 15.8 d

Bioaccumulative potential

Components:

phenol:

Partition coefficient: n-octanol/water : log Pow: 1.47 (86 °F / 30 °C)
pH: 3.8

Diethylenetriamine:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 0.3 - 6.3
Exposure time: 42 d
Test substance: Fresh water
Method: flow-through test
Remarks: Bioaccumulation is unlikely.

Partition coefficient: n-octanol/water : log Pow: -1.58 (68 °F / 20 °C)
pH: 7

diethyl bis(2-hydroxyethyl)aminomethylphosphonate:

Partition coefficient: n-octanol/water : log Pow: -1.938

2,4,6-tris(dimethylaminomethyl)phenol:

Partition coefficient: n-octanol/water : Pow: >= 0.219 (70.7 °F / 21.5 °C)
log Pow: -0.66 (70.7 °F / 21.5 °C)
Method: OPPTS 830.7550

trimethoxy(methyl)silane:

Partition coefficient: n-octanol/water : log Pow: 0.7 (68 °F / 20 °C)
pH: 7
Method: QSAR

2-aminoethanol:

Partition coefficient: n-octanol/water : log Pow: -1.31 (77 °F / 25 °C)

bis[(dimethylamino)methyl]phenol:

Partition coefficient: n-octanol/water : Pow: >= 0.219 (70.7 °F / 21.5 °C)
log Pow: -0.66 (70.7 °F / 21.5 °C)
Method: OPPTS 830.7550

ethylbenzene:

Bioaccumulation : Bioconcentration factor (BCF): 1.9

Partition coefficient: n-octanol/water : log Pow: 3.15

melamine:

Bioaccumulation : Bioconcentration factor (BCF): 0.05

Partition coefficient: n-octanol/water : log Pow: -1.22 (68 °F / 20 °C)
pH: 8
Method: Partition coefficient

octamethylcyclotetrasiloxane:

Bioaccumulation : Species: Pimephales promelas (fathead minnow)
Bioconcentration factor (BCF): 12,400
Exposure time: 28 d
Temperature: 68 °F / 20 °C
Concentration: 0.0005 mg/l
Test substance: Fresh water
Method: flow-through test

Species: Pimephales promelas (fathead minnow)
Bioconcentration factor (BCF): 13,400
Exposure time: 28 d
Temperature: 68 °F / 20 °C
Concentration: 0.0005 mg/l
Test substance: Fresh water

Method: flow-through test

Partition coefficient: n-octanol/water : log Pow: 6.488 (77.2 °F / 25.1 °C)
Method: OECD Test Guideline 123

Mobility in soil

Components:

Diethylenetriamine:

Distribution among environmental compartments : Koc: 19111

2-aminoethanol:

Distribution among environmental compartments : Koc: 1.167

ethylbenzene:

Distribution among environmental compartments : Koc: 520

melamine:

Distribution among environmental compartments : Koc: 1.7

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.
Toxic to aquatic life with long lasting effects.
Harmful to aquatic life with long lasting effects.

Components:

trimethoxy(methyl)silane:

Additional ecological information : There is no data available for this product.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Dispose of contents and container in accordance with all local, regional, national and international regulations. Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 2922
Proper shipping name	:	Corrosive liquid, toxic, n.o.s. (PHENOL, DIETHYLENETRIAMINE)
Class	:	8
Subsidiary risk	:	6.1
Packing group	:	II
Labels	:	Corrosive, Toxic
Packing instruction (cargo aircraft)	:	855
Packing instruction (passenger aircraft)	:	851

IMDG-Code

UN number	:	UN 2922
Proper shipping name	:	CORROSIVE LIQUID, TOXIC, N.O.S. (PHENOL, DIETHYLENETRIAMINE)
Class	:	8
Subsidiary risk	:	6.1
Packing group	:	II
Labels	:	8 (6.1)
EmS Code	:	F-A, S-B
Marine pollutant	:	yes(PHENOL, 4,4'-Isopropylidenediphenol)

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

UN/ID/NA number	:	UN 2922
Proper shipping name	:	Corrosive liquids, toxic, n.o.s. (PHENOL, DIETHYLENETRIAMINE)
Class	:	8
Subsidiary risk	:	6.1
Packing group	:	II
Labels	:	CORROSIVE, TOXIC
ERG Code	:	154

Marine pollutant : yes(PHENOL, 4,4'-Isopropylidenediphenol)

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
phenol	108-95-2	1000	6250
xylenes	1330-20-7	100	27247

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Acute toxicity (any route of exposure)
Respiratory or skin sensitisation
Germ cell mutagenicity
Reproductive toxicity
Specific target organ toxicity (single or repeated exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

phenol	108-95-2	>= 10 - < 20 %
4,4'-isopropylidenediphenol	80-05-7	>= 5 - < 10 %
ethylbenzene	100-41-4	>= 0.1 - < 1 %

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

phenol 108-95-2

California Prop. 65

WARNING: This product can expose you to chemicals including ethylbenzene, 2,2'-iminodiethanol, which is/are known to the State of California to cause cancer, and 4,4'-isopropylidenediphenol, methanol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

The components of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL

AIIC : On the inventory, or in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

ENCS	:	On the inventory, or in compliance with the inventory
KECI	:	Not in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
TCSI	:	Not in compliance with the inventory
TSCA	:	All substances listed as active on the TSCA inventory

Inventories

AIIC (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TECI (Thailand), TSCA (USA)

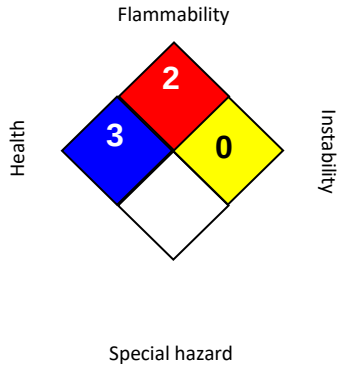
TSCA - 5(a) Significant New Use Rule List of Chemicals
No substances are subject to a Significant New Use Rule.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
No substances are subject to TSCA 12(b) export notification requirements.

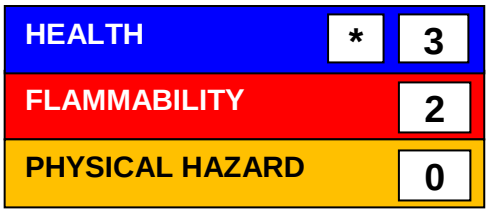
SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard

Revision Date	:	01/15/2022
ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)

OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
US WEEL	:	USA. Workplace Environmental Exposure Levels (WEEL)
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
NIOSH REL / C	:	Ceiling value not be exceeded at any time.
OSHA P0 / TWA	:	8-hour time weighted average
OSHA P0 / STEL	:	Short-term exposure limit
OSHA Z-1 / TWA	:	8-hour time weighted average
US WEEL / TWA	:	8-hr TWA

The information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

NO PERSON OR ORGANIZATION EXCEPT A DULY AUTHORIZED HUNTSMAN EMPLOYEE IS AUTHORIZED TO PROVIDE OR MAKE AVAILABLE DATA SHEETS FOR HUNTSMAN PRODUCTS. DATA SHEETS FROM UNAUTHORIZED SOURCES MAY CONTAIN INFORMATION THAT IS NO LONGER CURRENT OR ACCURATE.

EPOCAST® 1633 A US

Version	Revision Date:	SDS Number:	Date of last issue: 02/17/2017
1.1	01/18/2022	400001007739	Date of first issue: 02/17/2017

Print Date 03/17/2022

SECTION 1. IDENTIFICATION

Product name : EPOCAST® 1633 A US

Manufacturer or supplier's details

Company name of supplier : Huntsman Advanced Materials Americas LLC

Address : P.O. Box 4980
The Woodlands,
TX 77387
United States of America (USA)

Telephone : Non-Emergency: (800) 257-5547

E-mail address of person responsible for the SDS : Global_Product_EHS_AdMat@huntsman.com

Emergency telephone number : Chemtrec: (800) 424-9300 or (703) 527-3887

Recommended use of the chemical and restrictions on use

Recommended use : Epoxy constituents

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin irritation : Category 2

Eye irritation : Category 2A

Skin sensitisation : Category 1

Specific target organ toxicity - repeated exposure : Category 2 (Liver, Thyroid, Adrenal gland, Gastrointestinal tract)

Short-term (acute) aquatic hazard : Category 2

Chronic aquatic toxicity : Category 2

GHS label elements

Hazard pictograms :

Signal word : Warning

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

H373 May cause damage to organs (Liver, Thyroid, Adrenal gland, Gastrointestinal tract) through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements : **Prevention:**
P260 Do not breathe mist or vapours.
P264 Wash skin thoroughly after handling.
P272 Contaminated work clothing must not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.
Response:
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P314 Get medical advice/ attention 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.
P362 Take off contaminated clothing and wash before reuse.
P391 Collect spillage.
Storage:
Not available
Disposal:
P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Formaldehyde, oligomeric reaction products with 1-chloro-2,3-epoxypropane and phenol	9003-36-5	30 - 50
2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate	15625-89-5	10 - 20
Glass, oxide, chemicals	65997-17-3	10 - 20
trimethoxy(methyl)silane	1185-55-3	1 - 5
Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated	68937-54-2	1 - 5

ethylbenzene	100-41-4	0.1 - 1
melamine	108-78-1	0.1 - 1
octamethylcyclotetrasiloxane	556-67-2	< 0.1

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

SECTION 4. FIRST AID MEASURES

General advice	:	Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance. Treat symptomatically. Get medical attention if symptoms occur.
If inhaled	:	If inhaled, remove to fresh air. Get medical attention if symptoms occur.
In case of skin contact	:	If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.
In case of eye contact	:	Immediately flush eye(s) with plenty of water. Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	:	Induce vomiting immediately and call a physician. Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.
Most important symptoms and effects, both acute and delayed	:	None known.
Protection of first-aiders	:	First Aid responders should pay attention to self-protection and use the recommended protective clothing If potential for exposure exists refer to Section 8 for specific personal protective equipment. Avoid inhalation, ingestion and contact with skin and eyes. No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
Notes to physician	:	Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	:	Water spray Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical
Unsuitable extinguishing media	:	Exercise caution when using a high volume water jet as it may scatter and spread fire
Specific hazards during firefighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Carbon dioxide (CO2) Carbon monoxide Carbon oxides Silicon oxides
Specific extinguishing methods	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for firefighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Use personal protective equipment. Refer to protective measures listed in sections 7 and 8.
Environmental precautions	:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	:	Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.

Advice on safe handling	:	Repeated or prolonged skin contact may cause skin irritation and/or dermatitis and sensitisation of susceptible persons. Persons suffering from asthma, eczema or skin problems should avoid contact, including dermal contact, with this product. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations.
Conditions for safe storage	:	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep in properly labelled containers.
Materials to avoid	:	For incompatible materials please refer to Section 10 of this SDS.
Recommended storage temperature	:	36 - 104 °F / 2 - 40 °C
Further information on storage stability	:	Stable under normal conditions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate	15625-89-5	TWA	1 mg/m3	US WEEL
ethylbenzene	100-41-4	TWA	20 ppm	ACGIH
		TWA	100 ppm 435 mg/m3	NIOSH REL
		ST	125 ppm 545 mg/m3	NIOSH REL
		TWA	100 ppm 435 mg/m3	OSHA Z-1
		STEL	125 ppm 545 mg/m3	OSHA P0
		TWA	100 ppm 435 mg/m3	OSHA P0
melamine	108-78-1	TWA	3 mg/m3	US WEEL

octamethylcyclotetrasiloxane	556-67-2	TWA	10 ppm	US WEEL

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
ethylbenzene	100-41-4	Sum of mandelic acid and phenyl glyoxylic acid	Urine	End of shift (As soon as possible after exposure ceases)	0.15 g/g creatinine	ACGIH BEI

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines
Recommended Filter type:
Combined particulates and organic vapour type

Filter type : Filter type A-P

Hand protection
Material : butyl-rubber
Break through time : > 8 h

Material : Ethyl Vinyl Alcohol Laminate (EVAL)
Break through time : > 8 h

Material : Nitrile rubber
Break through time : 10 - 480 min

Remarks : Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water
Tightly fitting safety goggles
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.

When using do not smoke.
Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	paste
Colour	:	blue
Odour	:	slight
Odour Threshold	:	No data is available on the product itself.
pH	:	No data is available on the product itself.
Melting point/freezing point	:	No data is available on the product itself.
Boiling point	:	> 392 °F / > 200 °C
Flash point	:	> 392 °F / > 200 °C Method: Pensky-Martens closed cup
Evaporation rate	:	No data is available on the product itself.
Flammability (solid, gas)	:	No data is available on the product itself.
Flammability (liquids)	:	No data is available on the product itself.
Upper explosion limit / Upper flammability limit	:	No data is available on the product itself.
Lower explosion limit / Lower flammability limit	:	No data is available on the product itself.
Vapour pressure	:	No data is available on the product itself.
Relative vapour density	:	No data is available on the product itself.
Relative density	:	0.69 - 0.73
Density	:	0.7 g/cm3 (77 °F / 25 °C)
Solubility(ies)		
Water solubility	:	slightly soluble (68 °F / 20 °C)
Solubility in other solvents	:	No data is available on the product itself.
Partition coefficient: n-octanol/water	:	No data is available on the product itself.
Auto-ignition temperature	:	No data is available on the product itself.
Decomposition temperature	:	No data is available on the product itself.

Self-Accelerating decomposition temperature (SADT)	:	No data is available on the product itself.
Viscosity	:	No data is available on the product itself.
Explosive properties	:	No data is available on the product itself.
Oxidizing properties	:	No data is available on the product itself.
Particle size	:	No data is available on the product itself.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	No hazards to be specially mentioned.
Conditions to avoid	:	None known.
Incompatible materials	:	Strong acids Strong bases Strong oxidizing agents
Hazardous decomposition products	:	carbon dioxide carbon monoxide

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute dermal toxicity	:	Acute toxicity estimate: > 5,000 mg/kg Method: Calculation method

Components:

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

Acute oral toxicity	:	LD50 (Rat, male and female): > 5,000 mg/kg Method: OECD Test Guideline 401
Acute dermal toxicity	:	LD50 (Rat, male and female): > 2,000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity	:	LC50 (Rat, male and female): > 0.55 mg/l Exposure time: 6 h Test atmosphere: vapour Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rabbit): 5,170 mg/kg Assessment: The substance or mixture has no acute dermal toxicity

trimethoxy(methyl)silane:

Acute oral toxicity	:	LD50 (Rat, male): 11,685 mg/kg
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 7605 ppm Exposure time: 6 h Test atmosphere: vapour Method: OECD Test Guideline 403
Acute dermal toxicity	:	LD50 (Rabbit): > 9,500 mg/kg Method: OECD Test Guideline 402

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Acute oral toxicity	:	LD50 (Rat): > 5,000 mg/kg Method: estimated
Acute inhalation toxicity	:	LC50 (Rat, male and female): > 0.68 mg/l Exposure time: 4 h Test atmosphere: dust/mist Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	:	LD50 (Rabbit, male): > 5,000 mg/kg Method: estimated

ethylbenzene:

Acute oral toxicity	:	LD50 (Rat): 3,500 - 5,460 mg/kg Assessment: The substance or mixture has no acute oral toxicity
Acute inhalation toxicity	:	LC50 (Rat): 17.3 mg/l Exposure time: 4 h Test atmosphere: vapour Assessment: The component/mixture is moderately toxic after short term inhalation.
Acute dermal toxicity	:	LD50 (Rabbit): 15,400 mg/kg Assessment: The substance or mixture has no acute dermal toxicity

melamine:

Acute oral toxicity	:	LD50 (Rat, male and female): 3,161 - 3,828 mg/kg

Acute inhalation toxicity : LC50 (Rat, male and female): > 5190 mg/m3
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

octamethylcyclotetrasiloxane:

Acute oral toxicity : LD50 (Rat, male): > 4,800 mg/kg
Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity
Remarks: No mortality observed at this dose.

Acute inhalation toxicity : LC50 (Rat, male and female): 36 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Symptoms: Breathing difficulties

Acute dermal toxicity : LD50 (Rat, male and female): > 2,400 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity
Remarks: No mortality observed at this dose.

Skin corrosion/irritation

Components:

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

Species : Rabbit
Method : OECD Test Guideline 404
Result : Irritating to skin.

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Species : Rabbit
Exposure time : 4 h
Method : OECD Test Guideline 404
Result : Skin irritation
GLP : yes

Glass, oxide, chemicals:

Species : Rabbit
Assessment : No skin irritation
Method : OECD Test Guideline 404
Result : Normally reversible injuries

trimethoxy(methyl)silane:

Species : Rabbit
Assessment : No skin irritation
Method : OECD Test Guideline 404
Result : No skin irritation

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Result : slight irritation

melamine:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

octamethylcyclotetrasiloxane:

Species : Rabbit
Exposure time : 24 h
Method : OECD Test Guideline 404
Result : No skin irritation

Serious eye damage/eye irritation

Components:

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

Species : Rabbit
Result : No eye irritation
Method : OECD Test Guideline 405

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Species : Rabbit
Result : Eye irritation
Method : OECD Test Guideline 405

trimethoxy(methyl)silane:

Species : Rabbit
Result : No eye irritation
Assessment : No eye irritation
Method : OECD Test Guideline 405

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Result : slight irritation

melamine:

Species : Rabbit
Remarks : slight irritation

octamethylcyclotetrasiloxane:

Species : Rabbit
Result : No eye irritation
Method : OECD Test Guideline 405

Respiratory or skin sensitisation

Components:

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

Exposure routes	:	Skin
Species	:	Mouse
Method	:	OECD Test Guideline 429
Result	:	May cause sensitisation by skin contact.

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Result	:	Probability or evidence of high skin sensitisation rate in humans

Glass, oxide, chemicals:

Exposure routes	:	Skin
Species	:	Other
Result	:	Does not cause skin sensitisation.

trimethoxy(methyl)silane:

Exposure routes	:	Skin
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Causes sensitisation.

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Species	:	Guinea pig
Assessment	:	Did not cause sensitisation on laboratory animals.
Result	:	Did not cause sensitisation on laboratory animals.

melamine:

Exposure routes	:	Skin
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.

octamethylcyclotetrasiloxane:

Test Type	:	Maximisation Test
Exposure routes	:	Skin
Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

Components:

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

Genotoxicity in vitro	:	Metabolic activation: with and without metabolic activation Method: OECD Test Guideline 471 Result: positive

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: positive

Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: positive

Genotoxicity in vivo : Cell type: Somatic
Application Route: Oral
Exposure time: 48 h
Dose: 2000 mg/kg
Method: OECD Test Guideline 474
Result: negative

Cell type: Somatic
Application Route: Oral
Dose: 2000 mg/kg
Method: OECD Test Guideline 486
Result: negative

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Genotoxicity in vitro : Test Type: Chromosome aberration test in vitro
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: positive
GLP: yes

Test Type: reverse mutation assay
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Genotoxicity in vivo : Test Type: Micronucleus test
Species: Mouse (male and female)
Cell type: Bone marrow
Application Route: Oral
Dose: 437.5, 875 and 1750 mg/kg bw
Method: OECD Test Guideline 474
Result: negative

Test Type: comet assay
Method: OECD Test Guideline 489
Result: negative

trimethoxy(methyl)silane:

Genotoxicity in vivo : Application Route: Oral
Dose: 2000 mg/kg
Method: OECD Test Guideline 474
Result: negative

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Germ cell mutagenicity - Assessment : In vitro tests did not show mutagenic effects, Animal testing did not show any mutagenic effects.

ethylbenzene:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Genotoxicity in vivo : Method: OECD Test Guideline 474
Result: negative

Method: OECD Test Guideline 486
Result: negative

melamine:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation
Method: Chromosome aberration test in vitro
Result: negative

Metabolic activation: with and without metabolic activation
Method: In vitro mammalian cell gene mutation test
Result: negative

Genotoxicity in vivo : Application Route: Intraperitoneal injection
Method: Skin Sensitization
Result: negative

octamethylcyclotetrasiloxane:

Genotoxicity in vitro : Test Type: gene mutation test
Test system: Salmonella typhimurium
Concentration: 0.0003 - 5.0 mg/plate
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Concentration: 0.0003 - 0.03 mg/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Concentration: 0.0032 - 0.05 µl/ml
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 476
Result: negative

Genotoxicity in vivo : Test Type: In vivo micronucleus test
Species: Rat (male and female)
Cell type: Bone marrow
Application Route: Inhalation
Exposure time: 6 h/day for 5 days
Dose: 0, 720 ppm
Method: OECD Test Guideline 475

Result: negative

Test Type: dominant lethal test
Species: Rat (male and female)
Cell type: Bone marrow
Application Route: Oral
Exposure time: 5 days/week for 8 weeks
Dose: 100, 500, 1000 mg/kg bw/day
Method: OECD Test Guideline 478
Result: negative

Germ cell mutagenicity - Assessment : Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity

Components:

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Species : Mouse

Species : Rat

octamethylcyclotetrasiloxane:

Species	:	Rat, male and female
Application Route	:	Inhalation
Exposure time	:	24 month(s)
Dose	:	10, 30, 150, 700 ppm
Frequency of Treatment	:	6 hours/day, 5 days/week
	:	150 ppm
Method	:	OECD Test Guideline 453
Result	:	positive
Symptoms	:	female reproductive effects, carcinogenic effects
Remarks	:	Causes tumors in rodents. Research has shown that the mechanism of carcinogenicity is not relevant to humans.

Carcinogenicity - Assessment : Weight of evidence does not support classification as a carcinogen

IARC

Group 2A: Probably carcinogenic to humans	
Glass, oxide, chemicals (glass)	65997-17-3
Group 2B: Possibly carcinogenic to humans	
2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate	15625-89-5
Group 2B: Possibly carcinogenic to humans	
Glass, oxide, chemicals (special-purpose fibres)	65997-17-3
Group 2B: Possibly carcinogenic to humans	
ethylbenzene	100-41-4
Group 2B: Possibly carcinogenic to humans	
melamine	108-78-1

OSHA No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

Components:

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

Effects on fertility : Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 416
Result: No effects on fertility and early embryonic development were detected.

Effects on foetal development : Species: Rabbit, female
Application Route: Dermal
General Toxicity Maternal: NOAEL: 30 mg/kg body weight
Result: No teratogenic effects

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Effects on fertility : Species: Rat, male and female
Application Route: Oral
Dose: 0, 30, 100, 300 milligram per kilogram
General Toxicity - Parent: NOAEL: 300 mg/kg body weight
Fertility: NOAEL: 300 mg/kg body weight
Method: OECD Test Guideline 422
Result: Animal testing did not show any effects on fertility.
GLP: yes

Effects on foetal development : Species: Rat, female
Application Route: Oral
Dose: 500 milligram per kilogram
Duration of Single Treatment: 10 d
General Toxicity Maternal: NOAEL: < 500 mg/kg body weight
Embryo-foetal toxicity: NOAEL: > 500 mg/kg body weight
Method: OECD Test Guideline 414
Result: No effects on fertility and early embryonic development were detected.
GLP: yes

Species: Rabbit
Application Route: Oral
General Toxicity Maternal: NOAEL: > 130 mg/kg body weight
Embryo-foetal toxicity: NOAEL: > 130 mg/kg body weight
Method: OECD Test Guideline 414
Result: No effects on fertility and early embryonic development were detected.
GLP: yes

trimethoxy(methyl)silane:

Effects on fertility : Species: Rat, male and female
Application Route: Oral
Method: OECD Test Guideline 422
Result: negative

Effects on foetal development	:	Species: Rat, male and female Application Route: Oral General Toxicity Maternal: NOAEL: 1,000 mg/kg body weight Method: OECD Test Guideline 422 Result: No teratogenic effects

ethylbenzene:

Effects on fertility	:	General Toxicity - Parent: NOAEL: 500 ppm Method: OECD Test Guideline 416
Effects on foetal development	:	General Toxicity Maternal: NOAEL: 500 ppm Teratogenicity: NOAEL: 2,000 ppm Developmental Toxicity: NOAEL: 500 ppm

melamine:

Effects on foetal development	:	Species: Rat, female Application Route: Oral General Toxicity Maternal: NOAEL: 600 mg/kg body weight Method: OECD Test Guideline 414 Result: No teratogenic effects

octamethylcyclotetrasiloxane:

Effects on fertility	:	Test Type: Two-generation study Species: Rat, male and female Application Route: Inhalation Dose: 70, 300, 500, 700 ppm Duration of Single Treatment: 6 h Frequency of Treatment: 7 days/week General Toxicity - Parent: NOAEC: 300 ppm General Toxicity F1: NOAEC: 300 ppm Method: OECD Test Guideline 416 Result: positive
Effects on foetal development	:	Species: Rat, female Application Route: Inhalation Dose: 100, 300, 700 ppm Duration of Single Treatment: 6 h Frequency of Treatment: 7 days/week General Toxicity Maternal: NOAEL: 300 ppm Teratogenicity: NOAEL: > 700 ppm Symptoms: Maternal effects Method: OECD Test Guideline 414 Result: No teratogenic effects, Some evidence of adverse effects on development, based on animal experiments.
Reproductive toxicity - Assessment	:	Some evidence of adverse effects on sexual function and fertility, based on animal experiments. Did not show teratogenic effects in animal experiments.

STOT - single exposure

No data available

STOT - repeated exposure

Components:

trimethoxy(methyl)silane:

Target Organs	:	Liver, Thyroid, Adrenal gland, Gastrointestinal tract
Assessment	:	May cause damage to organs through prolonged or repeated exposure.

ethylbenzene:

Exposure routes	:	Inhalation
Target Organs	:	Lungs, Liver, Kidney, Central nervous system
Assessment	:	May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

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

Species	:	Rat, male and female
NOAEL	:	250 mg/kg
Application Route	:	Ingestion
Exposure time	:	13 Weeks
Number of exposures	:	7 d
Method	:	Subchronic toxicity

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Species	:	Rat, male and female
NOAEL	:	300 mg/kg
Application Route	:	Oral
Exposure time	:	15 - 29 d 6 h
Number of exposures	:	7 days/week
Dose	:	0/30/100/300 mg/kg bw/day
Control Group	:	yes
Method	:	OECD Test Guideline 422
GLP	:	yes

Species	:	Mouse, male and female
NOAEL	:	0.3 mg/kg
Application Route	:	Dermal
Exposure time	:	105 - 106 weeks
Number of exposures	:	5 days/week
Dose	:	0.3/1/3 mg/kg
Method	:	OECD Test Guideline 453
GLP	:	yes

Species	:	Rat, male and female
LOAEL	:	0.3 mg/kg
Application Route	:	Dermal
Exposure time	:	104 - 105 weeks
Number of exposures	:	5 days/week
Dose	:	0.3/1/3 mg/kg
Method	:	OECD Test Guideline 453
GLP	:	yes

Species	:	Mouse, male and female
NOAEL	:	>= 200 mg/kg
Application Route	:	Dermal
Exposure time	:	16 d
Number of exposures	:	5 days/week
Dose	:	12.5/25/50/100/200 mg/kg

Species	:	Rat, male and female
NOAEL	:	>= 200 mg/kg
Application Route	:	Dermal
Exposure time	:	16 d
Number of exposures	:	5 days/week
Dose	:	12.5/25/50/100/200 mg/kg

Species	:	Mouse, male and female
NOAEL	:	> 12 mg/kg
Application Route	:	Dermal
Exposure time	:	14 weeks
Number of exposures	:	5 days/week
Dose	:	0.75/1.5/3/6/12 mg/kg
GLP	:	yes

Species	:	Rat, male and female
NOAEL	:	> 12 mg/kg
Application Route	:	Dermal
Exposure time	:	14 weeks
Number of exposures	:	5 days/week
Dose	:	0.75/1.5/3/6/12 mg/kg
GLP	:	yes

Glass, oxide, chemicals:

Species	:	Rat, male
LOEC	:	2.4 mg/m3
Test atmosphere	:	dust/mist
Exposure time	:	2,160 h
Number of exposures	:	6 h
Method	:	Directive 67/548/EEC, Annex, B.29

trimethoxy(methyl)silane:

Species	:	Rat, male and female
NOEC	:	50 mg/kg, 100 ppm
Application Route	:	Ingestion
Test atmosphere	:	vapour
Exposure time	:	672 h
Number of exposures	:	7 d
Method	:	OECD Test Guideline 413

ethylbenzene:

Species	:	Rat, male and female
NOAEL	:	75 mg/kg bw
Application Route	:	oral (gavage)
Exposure time	:	28 d
Dose	:	75/250/750 mg/kg bw
Control Group	:	yes

Method	:	OECD Test Guideline 407
Target Organs	:	Liver
Remarks	:	Subacute toxicity
Species	:	Rat, male and female
NOAEL	:	75 mg/kg bw
Application Route	:	oral (gavage)
Exposure time	:	90 d
Dose	:	75/250/750 mg/kg bw
Control Group	:	yes
Method	:	OECD Test Guideline 408
Species	:	Mouse, male and female
NOAEL	:	3.4 mg/l
Application Route	:	Inhalation
Exposure time	:	28 d
Dose	:	0,4/1,7/3,4 mg/L
Control Group	:	yes
Method	:	OECD Test Guideline 412
Species	:	Rat, male and female
NOAEL	:	1084
NOAEL	:	mg/m3
Application Route	:	inhalation (vapour)
Exposure time	:	104 week
Dose	:	325/1084/3251 mg/m3
Control Group	:	yes
Method	:	OECD Test Guideline 453
Species	:	Rat, male and female
NOAEL	:	4.74 mg/l
Application Route	:	Inhalation
Exposure time	:	13 week
Dose	:	0,47/1,18/2,37/3,55/4,74 mg/L
Control Group	:	yes
Method	:	OECD Test Guideline 413
Target Organs	:	Liver
Species	:	Mouse, male and female
NOAEL	:	3251
NOAEL	:	mg/m3
Application Route	:	Inhalation
Exposure time	:	104 week
Dose	:	325/1084/3251 mg/m3
Control Group	:	yes
Method	:	OECD Test Guideline 453
Species	:	Rabbit, male and female
NOAEL	:	6.8 mg/l
Application Route	:	Inhalation
Exposure time	:	28 d
Dose	:	1,7/3,4/6,8 mg/L
Control Group	:	yes
Method	:	OECD Test Guideline 412

melamine:

Species	:	Rat, male and female
LOAEL	:	72 mg/kg
Application Route	:	Ingestion
Exposure time	:	13 Weeks
Method	:	Subchronic toxicity

octamethylcyclotetrasiloxane:

Species	:	Rat, male and female
NOAEL	:	150 ppm
Application Route	:	Inhalation
Test atmosphere	:	vapour
Exposure time	:	24 Months
Number of exposures	:	6 hours/day, 5 days/week
Dose	:	10, 30, 150, 700 ppm
Control Group	:	no
Method	:	OECD Test Guideline 453
Remarks	:	Not classified due to data which are conclusive although insufficient for classification.

Species	:	Rabbit, male and female
NOAEL	:	>=1 ml/kg
Application Route	:	Dermal
Exposure time	:	3 Weeks
Number of exposures	:	6 hours/day, 5 days/week
Dose	:	0.1, 0.3, 1 ml/kg bw
Control Group	:	yes
Method	:	OECD Test Guideline 410
Remarks	:	No significant adverse effects were reported

Aspiration toxicity

Components:

ethylbenzene:

May be fatal if swallowed and enters airways.

Experience with human exposure

No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Components:

trimethoxy(methyl)silane:

Remarks	:	Solvents may degrease the skin.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

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

Toxicity to fish	:	LC50 (Fish): 2.54 mg/l Exposure time: 96 h Method: Calculation method
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 2.55 mg/l Exposure time: 48 h Method: Calculation method
Toxicity to algae/aquatic plants	:	EC50 (Selenastrum capricornutum (green algae)): 1.8 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 201
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia magna (Water flea)): 0.3 mg/l Exposure time: 21 d Test Type: semi-static test Test substance: Fresh water Method: OECD Test Guideline 211 Remarks: Information given is based on data obtained from similar substances.
Toxicity to microorganisms	:	IC50 (activated sludge): > 100 mg/l Exposure time: 3 h Test Type: static test Test substance: Fresh water

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Toxicity to fish	:	LC50 (Leuciscus idus (Golden orfe)): 1.47 mg/l Exposure time: 96 h Test Type: static test Method: DIN 38412 LC50 (Danio rerio (zebra fish)): 0.87 mg/l Exposure time: 96 h Test Type: semi-static test Method: OECD Test Guideline 203 GLP: yes
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia magna (Water flea)): 19.9 mg/l Exposure time: 48 h Test Type: static test Method: Other guidelines
Toxicity to algae/aquatic plants	:	EC50 (Desmodesmus subspicatus (green algae)): 4.86 mg/l Exposure time: 96 h Test Type: static test Method: Directive 67/548/EEC, Annex V, C.3.

GLP: no

EC10 (Desmodesmus subspicatus (green algae)): 0.57 mg/l
Exposure time: 96 h
Test Type: static test
Method: Directive 67/548/EEC, Annex V, C.3.

Toxicity to microorganisms : EC20 (activated sludge): 625 mg/l
Exposure time: 30 min
Test Type: static test
Method: ISO 8192

Ecotoxicology Assessment

Acute aquatic toxicity : Very toxic to aquatic life.

Chronic aquatic toxicity : Very toxic to aquatic life with long lasting effects.

Glass, oxide, chemicals:

Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): > 1,000 mg/l
Exposure time: 96 h
Test Type: Other guidelines
Test substance: Fresh water
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,000 mg/l
Exposure time: 72 h
Test Type: semi-static test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EgC50 (Selenastrum capricornutum (green algae)): > 1,000 mg/l
Exposure time: 72 h
Test Type: semi-static test
Method: OECD Test Guideline 201

trimethoxy(methyl)silane:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 110 mg/l
Exposure time: 96 h
Test Type: flow-through test
Test substance: Fresh water
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 122 mg/l
Exposure time: 48 h
Test Type: flow-through test
Test substance: Fresh water
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EgC50 (Selenastrum capricornutum (green algae)): > 120 mg/l
Exposure time: 72 h
Test Type: static test
Test substance: Fresh water

Method: OECD Test Guideline 201

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Toxicity to fish : EC50 (Fish): 10 - 100 mg/l
Remarks: Based on data from similar materials

LC50 (Cyprinodon variegatus (sheepshead minnow)): > 1,080 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

LC50 (Oncorhynchus mykiss (rainbow trout)): 892 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 1,040 mg/l
Exposure time: 48 h
Test Type: static test
Remarks: Based on data from similar materials

LC50 (Mysidopsis bahia (opossum shrimp)): 11 mg/l
Exposure time: 96 h
Test Type: static test
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : NOECr (Skeletonema costatum (marine diatom)): 3 mg/l
Exposure time: 72 h
Test Type: static test
Remarks: Based on data from similar materials

ErC50 (Skeletonema costatum (marine diatom)): 14 mg/l
Exposure time: 72 h
Test Type: static test
Remarks: Based on data from similar materials

ErC50 (Lemna gibba G3 (gibbous duckweed)): > 1,020 mg/l
Exposure time: 7 d
Test Type: static test
Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50 (activated sludge): 115 mg/l
Exposure time: 3 h
Remarks: Based on data from similar materials

ethylbenzene:

Toxicity to fish : LC50: 4.2 mg/l
Exposure time: 96 h

LC50: 9.2 mg/l
Exposure time: 96 h

LC50: 12.1 mg/l
Exposure time: 96 h

LC50: 5.1 mg/l

Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50: 1.81 - 2.38 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : IC50: 4.6 mg/l
Exposure time: 72 h

EC50: 3.6 mg/l
Exposure time: 96 h

NOEC: 3.4 mg/l
Exposure time: 96 h

EC50: 7.7 mg/l
Exposure time: 96 h

Toxicity to fish (Chronic toxicity) : NOEL: 0.96 mg/l
Exposure time: 7 d

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : Harmful to aquatic life with long lasting effects.

melamine:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): > 3,000 mg/l
Exposure time: 96 h
Test Type: semi-static test
Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): > 1,000 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Fresh water
Method: Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids

Toxicity to algae/aquatic plants : EC50 (Selenastrum capricornutum (green algae)): 325 mg/l
Exposure time: 96 h
Test Type: static test
Test substance: Fresh water

Toxicity to fish (Chronic toxicity) : NOEC (Oncorhynchus mykiss (rainbow trout)): 1,500 mg/l
Exposure time: 28 d
Test Type: semi-static test
Test substance: Fresh water

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 18 mg/l
Exposure time: 21 d
Test Type: semi-static test
Test substance: Fresh water

octamethylcyclotetrasiloxane:

Toxicity to fish	:	NOEC (Oncorhynchus mykiss (rainbow trout)): >= 22 µg/l End point: mortality Exposure time: 96 h Test Type: flow-through test Analytical monitoring: yes Test substance: Fresh water Method: Fish Acute Toxicity Test Remarks: No toxicity at the limit of solubility
Toxicity to daphnia and other aquatic invertebrates	:	NOEC (Daphnia magna (Water flea)): >= 15 µg/l End point: Immobilization Exposure time: 48 h Test Type: flow-through test Analytical monitoring: yes Test substance: Fresh water Method: Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids Remarks: No toxicity at the limit of solubility
Toxicity to algae/aquatic plants	:	NOECr: < 0.022 mg/l Exposure time: 96 h
Toxicity to fish (Chronic toxicity)	:	NOEC (Fish): 0.0044 mg/l Exposure time: 14 d
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Daphnia (water flea)): 0.0079 mg/l Exposure time: 21 d
Sediment toxicity	:	NOEC: 13 mg/kg sediment dw Analytical monitoring: yes Solvent: yes Duration: 28 d Test Type: static test Water: Fresh water Sediment: Natural Exposure duration: 28 d Nominal / Measured: Measured

Ecotoxicology Assessment

Acute aquatic toxicity	:	This product has no known ecotoxicological effects., No toxicity at the limit of solubility
Chronic aquatic toxicity	:	Very toxic to aquatic life with long lasting effects.

Persistence and degradability

Components:

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

Biodegradability	:	Inoculum: activated sludge Concentration: 3 mg/l Result: Not biodegradable Biodegradation: ca. 0 % Exposure time: 28 d Method: Directive 67/548/EEC Annex V, C.4.E.

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 33 mg/l
Result: Readily biodegradable.
Biodegradation: 82 - 90 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
GLP: yes

trimethoxy(methyl)silane:

Biodegradability : Inoculum: activated sludge
Concentration: 11.2 mg/l
Result: Not readily biodegradable.
Biodegradation: 54 %
Exposure time: 28 d

Stability in water : Degradation half life (DT50): 2.2 hrs (25 °C) pH: 7
Method: OECD Test Guideline 111
Remarks: Fresh water

Siloxanes and Silicones, di-Me, 3-hydroxypropyl Me, ethoxylated:

Biodegradability : Result: Not readily biodegradable.
Biodegradation: 15.6 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
Remarks: Based on data from similar materials

ethylbenzene:

Biodegradability : Result: Readily biodegradable.
Biodegradation: > 60 %
Exposure time: 28 d

melamine:

Biodegradability : Inoculum: activated sludge
Concentration: 100 mg/l
Result: Not readily biodegradable.
Biodegradation: < 10 %
Exposure time: 28 d
Method: OECD Test Guideline 302B

octamethylcyclotetrasiloxane:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 10 mg/l
Result: Not readily biodegradable.
Biodegradation: 3.7 %
Exposure time: 29 d
Method: OECD Test Guideline 310

Stability in water : Degradation half life (DT50): 3.9 d (25 °C) pH: 7

Method: OECD Test Guideline 111

Photodegradation : Test Type: Air
Degradation (indirect photolysis): 50 % Degradation half life: 15.8 d

Bioaccumulative potential

Components:

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

Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): 150
Remarks: Does not bioaccumulate.

Partition coefficient: n-octanol/water : log Pow: 2.7 - 3.6
Method: OECD Test Guideline 117

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Partition coefficient: n-octanol/water : log Pow: 4.35 (68 °F / 20 °C)
Method: Calculation method

trimethoxy(methyl)silane:

Partition coefficient: n-octanol/water : log Pow: 0.7 (68 °F / 20 °C)
pH: 7
Method: QSAR

ethylbenzene:

Bioaccumulation : Bioconcentration factor (BCF): 1.9

Partition coefficient: n-octanol/water : log Pow: 3.15

melamine:

Bioaccumulation : Bioconcentration factor (BCF): 0.05

Partition coefficient: n-octanol/water : log Pow: -1.22 (68 °F / 20 °C)
pH: 8
Method: Partition coefficient

octamethylcyclotetrasiloxane:

Bioaccumulation : Species: Pimephales promelas (fathead minnow)
Bioconcentration factor (BCF): 12,400
Exposure time: 28 d
Temperature: 68 °F / 20 °C
Concentration: 0.0005 mg/l
Test substance: Fresh water
Method: flow-through test

Species: Pimephales promelas (fathead minnow)
Bioconcentration factor (BCF): 13,400
Exposure time: 28 d
Temperature: 68 °F / 20 °C

Concentration: 0.0005 mg/l
Test substance: Fresh water
Method: flow-through test

Partition coefficient: n-octanol/water : log Pow: 6.488 (77.2 °F / 25.1 °C)
Method: OECD Test Guideline 123

Mobility in soil

Components:

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

Distribution among environmental compartments : Koc: 4460
Method: OECD Test Guideline 121

2-ethyl-2-[[(1-oxoallyl)oxy]methyl]-1,3-propanediyl diacrylate:

Distribution among environmental compartments : OECD Test Guideline 121
log Koc: 2.2
Method: OECD Test Guideline 121

ethylbenzene:

Distribution among environmental compartments : Koc: 520

melamine:

Distribution among environmental compartments : Koc: 1.7

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.

Components:

trimethoxy(methyl)silane:

Additional ecological information : There is no data available for this product.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Dispose of contents and container in accordance with all local, regional, national and international regulations. Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

UN/ID No.	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (TRIMETHYLOLPROPANE TRIACRYLATE, BISPHENOL F EPOXY RESIN)
Class	:	9
Packing group	:	III
Labels	:	Miscellaneous
Packing instruction (cargo aircraft)	:	964
Packing instruction (passenger aircraft)	:	964
Environmentally hazardous	:	yes

IMDG-Code

UN number	:	UN 3082
Proper shipping name	:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (TRIMETHYLOLPROPANE TRIACRYLATE, BISPHENOL F EPOXY RESIN)
Class	:	9
Packing group	:	III
Labels	:	9
EmS Code	:	F-A, S-F
Marine pollutant	:	yes

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

49 CFR

UN/ID/NA number	:	UN 3082
Proper shipping name	:	Environmentally hazardous substance, liquid, n.o.s. (TRIMETHYLOLPROPANE TRIACRYLATE, BISPHENOL F EPOXY RESIN)
Class	:	9
Packing group	:	III
Labels	:	CLASS 9

ERG Code : 171
Marine pollutant : yes
Remarks : Shipment by ground under DOT is non-regulated; however it may be shipped per the applicable hazard classification to facilitate multi-modal transport involving ICAO (IATA) or IMO.

Special precautions for user

Remarks : 49CFR: no dangerous good in non-bulk packaging

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
xylenes	1330-20-7	100	27247

SARA 311/312 Hazards : Respiratory or skin sensitisation
Specific target organ toxicity (single or repeated exposure)
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

ethylbenzene 100-41-4 >= 0.1 - < 1 %

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

California Prop. 65

WARNING: This product can expose you to chemicals including Glass, oxide, chemicals, ethylbenzene, pyrocatechol, which is/are known to the State of California to cause cancer, and methanol, toluene, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

The components of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL

AIIC : On the inventory, or in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

ENCS : On the inventory, or in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC	:	On the inventory, or in compliance with the inventory
TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	All substances listed as active on the TSCA inventory

Inventories

AIIC (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TECI (Thailand), TSCA (USA)

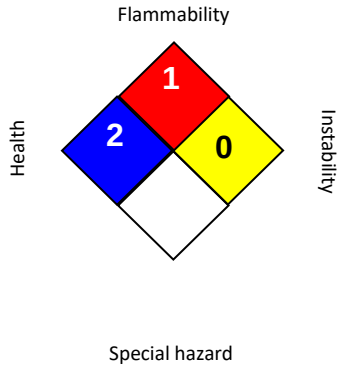
TSCA - 5(a) Significant New Use Rule List of Chemicals
No substances are subject to a Significant New Use Rule.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
No substances are subject to TSCA 12(b) export notification requirements.

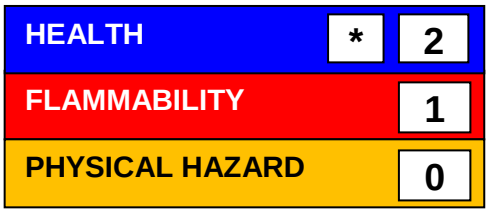
SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard

Revision Date	:	01/18/2022
ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI	:	ACGIH - Biological Exposure Indices (BEI)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
US WEEL	:	USA. Workplace Environmental Exposure Levels (WEEL)
ACGIH / TWA	:	8-hour, time-weighted average
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek

NIOSH REL / ST	:	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
OSHA P0 / TWA	:	8-hour time weighted average
OSHA P0 / STEL	:	Short-term exposure limit
OSHA Z-1 / TWA	:	8-hour time weighted average
US WEEL / TWA	:	8-hr TWA

The information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

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