

N-(HYDROXYETHYL)-N,N-BIS(TRIMETHOXYSILYLPROPYL)AMINE, 65% in methanol

Safety Data Sheet SIH6171.5

Date of issue: 19/03/2015

Revision date: 01/11/2018

Version: 1.1

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

1.1. Product identifier

Product form	: Mixture
Physical state	: Liquid
Product name	: N-(HYDROXYETHYL)-N,N-BIS(TRIMETHOXYSILYLPROPYL)AMINE, 65% in methanol
Product code	: SIH6171.5
Formula	: C ₁₄ H ₃₅ NO ₇ Si ₂
Synonyms	: HYDROXY FUNCTIONAL SILANE
Chemical family	: ORGANOMETHOXYSILANE

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Chemical intermediate

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

GELEST, INC.

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1.4. Emergency telephone number

Emergency number : CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids, Category 2	H225
Acute toxicity (oral), Category 3	H301
Acute toxicity (dermal), Category 3	H311
Acute toxicity (inhalation:vapour) Category 3	H331
Serious eye damage/eye irritation, Category 2	H319
Specific target organ toxicity — single exposure, Category 1	H370
Full text of H statements : see section 16	

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS02



GHS06



GHS08

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Signal word (CLP)	: Danger
Hazard statements (CLP)	: H225 - Highly flammable liquid and vapour. H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled H319 - Causes serious eye irritation. H370 - Causes damage to organs.
Precautionary statements (CLP)	: P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 - Keep container tightly closed. P240 - Ground/bond container and receiving equipment. P241 - Use explosion-proof ventilating equipment. P260 - Do not breathe vapours. P264 - Wash hands thoroughly after handling.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
N-(Hydroxyethyl)-N,N-bis(trimethoxysilyl)propylamine	(CAS-No.) 264128-94-1	> 60	Skin Irrit. 2, H315 Eye Irrit. 2, H319
Methanol	(CAS-No.) 67-56-1 (EC-No.) 200-659-6 (EC Index-No.) 603-001-00-X	< 40	Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation:vapour), H331 STOT SE 1, H370
2-Methoxyethanol substance listed as REACH Candidate	(CAS-No.) 109-86-4 (EC-No.) 203-713-7 (EC Index-No.) 603-011-00-4	< 5	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Repr. 1B, H360FD

Specific concentration limits:

Name	Product identifier	Specific concentration limits
Methanol	(CAS-No.) 67-56-1 (EC-No.) 200-659-6 (EC Index-No.) 603-001-00-X	(3 =<C < 10) STOT SE 2, H371 (10 =<C < 100) STOT SE 1, H370

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). If possible show this sheet; if not available show packaging or label. Call a POISON CENTER/doctor.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
First-aid measures after skin contact	: Remove/take off immediately all contaminated clothing. Wash with plenty of water/.... Immediately call a POISON CENTER/doctor. Wash contaminated clothing before reuse.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Immediately call a POISON CENTER/doctor.

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

Symptoms/effects	: Causes damage to organs.
Symptoms/effects after inhalation	: Toxic if inhaled. Danger of serious damage to health by prolonged exposure through inhalation. May cause drowsiness or dizziness. Overexposure may cause: Nausea. Headache. Visual disturbances. Cough.

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Symptoms/effects after skin contact	: Toxic in contact with skin. Causes skin irritation. Repeated exposure to this material can result in absorption through skin causing significant health hazard.
Symptoms/effects after eye contact	: Causes serious eye damage.
Symptoms/effects after ingestion	: Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard. Oral toxicity is associated with methanol, the solvent and a hydrolysis product which causes nausea, vomiting, headache, visual effects including blindness. Onset of symptoms may be delayed up to 48 hours.
Chronic symptoms	: Methanol may affect the central nervous system resulting in persistent or recurring headaches or impaired vision.

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

NOTE TO PHYSICIAN: The combination of visual disturbances, metabolic acidosis and formic acid in urine is evidence of methanol poisoning. The therapeutic intravenous administration of ethanol (10 ml/hour) allows methanol to be preferentially oxidized and reduces production of methanol metabolites. Acidosis must be treated with intravenous administration of sodium bicarbonate and methanol elimination may be increased by hemodialysis, as indicated. Treatment should be based on blood methanol levels and acid-base balance.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Foam. Carbon dioxide. Dry chemical.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Highly flammable liquid and vapour. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

Explosion hazard : May form flammable/explosive vapour-air mixture.

5.3. Advice for firefighters

Firefighting instructions : Use water spray to cool exposed surfaces. Exercise caution when fighting any chemical fire.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Avoid all eye and skin contact and do not breathe vapour and mist.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Remove ignition sources. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection. Avoid breathing vapours.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or shovel spills into appropriate container for disposal. Use only non-sparking tools.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapours are flammable.

Precautions for safe handling : Use only outdoors or in a well-ventilated area. Avoid all eye and skin contact and do not breathe vapour and mist. Provide good ventilation in process area to prevent formation of vapour. Take precautionary measures against static discharge. Containers must be properly grounded before beginning transfer. Use only non-sparking tools.

Hygiene measures : Wash contaminated clothing before reuse. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical equipment.

Storage conditions : Keep container tightly closed.

Incompatible materials : Oxidizing agent. Peroxides. alcohols. Acids. Moisture. Water :

Storage area : Store in a well-ventilated place. Store away from heat.

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7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Methanol (67-56-1)		
EU	IOELV TWA (mg/m ³)	260 mg/m ³
EU	IOELV TWA (ppm)	200 ppm
Austria	MAK (mg/m ³)	260 mg/m ³
Austria	MAK (ppm)	200 ppm
Austria	MAK Short time value (mg/m ³)	1040 mg/m ³
Austria	MAK Short time value (ppm)	800 ppm
Belgium	Limit value (mg/m ³)	266 mg/m ³
Belgium	Limit value (ppm)	200 ppm
Belgium	Short time value (mg/m ³)	333 mg/m ³
Belgium	Short time value (ppm)	250 ppm
Bulgaria	OEL TWA (mg/m ³)	260 mg/m ³
Bulgaria	OEL TWA (ppm)	200 ppm
Cyprus	OEL TWA (mg/m ³)	260 mg/m ³
Cyprus	OEL TWA (ppm)	200 ppm
France	VLE (mg/m ³)	1300 mg/m ³
France	VLE (ppm)	1000 ppm
France	VME (mg/m ³)	260 mg/m ³ (restrictive limit)
France	VME (ppm)	200 ppm (restrictive limit)
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	270 mg/m ³ (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Germany	TRGS 900 Occupational exposure limit value (ppm)	200 ppm (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed)
Germany	TRGS 903 Biological limit value	30 mg/l (Medium: urine - Time: end of shift - Parameter: Methanol) 30 mg/l (Medium: urine - Time: end of several shifts - Parameter: Methanol (for long-term exposures))
Gibraltar	Eight hours mg/m ³	260 mg/m ³
Gibraltar	Eight hours ppm	200 ppm
Greece	OEL TWA (mg/m ³)	260 mg/m ³
Greece	OEL TWA (ppm)	200 ppm
Greece	OEL STEL (mg/m ³)	325 mg/m ³
Greece	OEL STEL (ppm)	250 ppm
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	200 ppm
Italy - Portugal - USA ACGIH	ACGIH STEL (ppm)	250 ppm
Italy	OEL TWA (mg/m ³)	260 mg/m ³
Italy	OEL TWA (ppm)	200 ppm
Latvia	OEL TWA (mg/m ³)	260 mg/m ³
Latvia	OEL TWA (ppm)	200 ppm
USA IDLH	US IDLH (ppm)	6000 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	260 mg/m ³
USA NIOSH	NIOSH REL (TWA) (ppm)	200 ppm
USA NIOSH	NIOSH REL (STEL) (mg/m ³)	325 mg/m ³
USA NIOSH	NIOSH REL (STEL) (ppm)	250 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	260 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	200 ppm
Spain	VLA-ED (mg/m ³)	266 mg/m ³ (indicative limit value)
Spain	VLA-ED (ppm)	200 ppm (indicative limit value)
Switzerland	KZGW (mg/m ³)	1040 mg/m ³
Switzerland	KZGW (ppm)	800 ppm

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Methanol (67-56-1)		
Switzerland	MAK (mg/m ³)	260 mg/m ³
Switzerland	MAK (ppm)	200 ppm
Netherlands	Grenswaarde TGG 8H (mg/m ³)	133 mg/m ³
Netherlands	Grenswaarde TGG 8H (ppm)	100 ppm
United Kingdom	WEL TWA (mg/m ³)	266 mg/m ³
United Kingdom	WEL TWA (ppm)	200 ppm
United Kingdom	WEL STEL (mg/m ³)	333 mg/m ³
United Kingdom	WEL STEL (ppm)	250 ppm
Czech Republic	Expoziční limity (PEL) (mg/m ³)	250 mg/m ³
Denmark	Grænseværdie (langvarig) (mg/m ³)	260 mg/m ³
Denmark	Grænseværdie (langvarig) (ppm)	200 ppm
Finland	HTP-arvo (8h) (mg/m ³)	270 mg/m ³
Finland	HTP-arvo (8h) (ppm)	200 ppm
Finland	HTP-arvo (15 min)	330 mg/m ³
Finland	HTP-arvo (15 min) (ppm)	250 ppm
Hungary	AK-érték	260 mg/m ³
Ireland	OEL (8 hours ref) (mg/m ³)	260 mg/m ³
Ireland	OEL (8 hours ref) (ppm)	200 ppm
Ireland	OEL (15 min ref) (mg/m ³)	780 mg/m ³ (calculated)
Ireland	OEL (15 min ref) (ppm)	600 ppm (calculated)
Lithuania	IPRV (mg/m ³)	260 mg/m ³
Lithuania	IPRV (ppm)	200 ppm
Malta	OEL TWA (mg/m ³)	260 mg/m ³
Malta	OEL TWA (ppm)	200 ppm
Norway	Grenseverdier (AN) (mg/m ³)	130 mg/m ³
Norway	Grenseverdier (AN) (ppm)	100 ppm
Norway	Grenseverdier (Korttidsverdi) (mg/m ³)	130 mg/m ³
Norway	Grenseverdier (Korttidsverdi) (ppm)	100 ppm
Poland	NDS (mg/m ³)	100 mg/m ³
Poland	NDSch (mg/m ³)	300 mg/m ³
Romania	OEL TWA (mg/m ³)	260 mg/m ³
Romania	OEL TWA (ppm)	200 ppm
Romania	OEL STEL (ppm)	5 ppm
Slovakia	NPHV (priemerná) (mg/m ³)	260 mg/m ³
Slovakia	NPHV (priemerná) (ppm)	200 ppm
Sweden	nivågränsvärde (NVG) (mg/m ³)	250 mg/m ³
Sweden	nivågränsvärde (NVG) (ppm)	200 ppm
Sweden	kortidsvärde (KTV) (mg/m ³)	350 mg/m ³
Sweden	kortidsvärde (KTV) (ppm)	250 ppm
Canada (Quebec)	VECD (mg/m ³)	328 mg/m ³
Canada (Quebec)	VECD (ppm)	250 ppm
Canada (Quebec)	VEMP (mg/m ³)	262 mg/m ³
Canada (Quebec)	VEMP (ppm)	200 ppm
Australia	TWA (mg/m ³)	262 mg/m ³
Australia	TWA (ppm)	200 ppm
Australia	STEL (mg/m ³)	328 mg/m ³
Australia	STEL (ppm)	250 ppm
Portugal	OEL TWA (mg/m ³)	260 mg/m ³ (indicative limit value)
Portugal	OEL TWA (ppm)	200 ppm (indicative limit value)
Portugal	OEL STEL (ppm)	250 ppm

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Methanol (67-56-1)		
Portugal	OEL chemical category (PT)	skin - potential for cutaneous exposure indicative limit value
2-Methoxyethanol (109-86-4)		
EU	IOELV TWA (ppm)	1 ppm
Austria	MAK (ppm)	1 ppm
Austria	MAK Short time value (ppm)	4 ppm
Belgium	Limit value (mg/m ³)	0.3 mg/m ³
Belgium	Limit value (ppm)	0.1 ppm
Bulgaria	OEL TWA (ppm)	1 ppm
Cyprus	OEL TWA (ppm)	1 ppm
France	VME (mg/m ³)	3.2 mg/m ³ (restrictive limit)
France	VME (ppm)	1 ppm (restrictive limit)
Germany	TRGS 900 Occupational exposure limit value (mg/m ³)	3.2 mg/m ³ (The risk of damage to the embryo or fetus cannot be excluded even when AGW and BGW values are observed)
Germany	TRGS 900 Occupational exposure limit value (ppm)	1 ppm (The risk of damage to the embryo or fetus cannot be excluded even when AGW and BGW values are observed)
Germany	TRGS 903 Biological limit value	15 mg/g (Medium: urine - Time: end of shift - Parameter: Methoxyacetic acid (measured as mg/g Creatinine))
Gibraltar	Eight hours ppm	1 ppm
Greece	OEL TWA (ppm)	1 ppm
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	0.1 ppm
Italy	OEL TWA (ppm)	0.5 ppm
Latvia	OEL TWA (ppm)	1 ppm
USA IDLH	US IDLH (ppm)	200 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.3 mg/m ³
USA NIOSH	NIOSH REL (TWA) (ppm)	0.1 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	80 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	25 ppm
Spain	VLA-ED (mg/m ³)	3 mg/m ³ (indicative limit value)
Spain	VLA-ED (ppm)	1 ppm (indicative limit value)
Switzerland	KZGW (mg/m ³)	25.6 mg/m ³
Switzerland	KZGW (ppm)	8 ppm
Switzerland	MAK (mg/m ³)	3.2 mg/m ³
Switzerland	MAK (ppm)	1 ppm
Netherlands	Grenswaarde TGG 8H (mg/m ³)	0.5 mg/m ³
United Kingdom	WEL TWA (mg/m ³)	3 mg/m ³
United Kingdom	WEL TWA (ppm)	1 ppm
United Kingdom	WEL STEL (mg/m ³)	9 mg/m ³ (calculated)
United Kingdom	WEL STEL (ppm)	3 ppm (calculated)
Czech Republic	Expoziční limity (PEL) (mg/m ³)	3 mg/m ³
Denmark	Grænseværdie (langvarig) (ppm)	1 ppm
Finland	HTP-arvo (8h) (mg/m ³)	1.6 mg/m ³
Finland	HTP-arvo (8h) (ppm)	0.5 ppm
Hungary	AK-érték	3.16 mg/m ³
Ireland	OEL (8 hours ref) (ppm)	1 ppm
Ireland	OEL (15 min ref) (ppm)	3 ppm (calculated)
Lithuania	IPRV (ppm)	1 ppm
Lithuania	TPRV (mg/m ³)	30 mg/m ³
Lithuania	TPRV (ppm)	10 ppm
Malta	OEL TWA (ppm)	1 ppm
Norway	Grenseverdier (AN) (mg/m ³)	3.1 mg/m ³

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2-Methoxyethanol (109-86-4)		
Norway	Grenseverdier (AN) (ppm)	1 ppm
Norway	Grenseverdier (Korttidsverdi) (mg/m ³)	3.1 mg/m ³
Norway	Grenseverdier (Korttidsverdi) (ppm)	1 ppm
Poland	NDS (mg/m ³)	3 mg/m ³
Romania	OEL TWA (mg/m ³)	3.2 mg/m ³
Romania	OEL TWA (ppm)	1 ppm
Slovakia	NPHV (priemerná) (mg/m ³)	16 mg/m ³
Slovakia	NPHV (priemerná) (ppm)	5 ppm
Slovakia	NPHV (Hraničná) (mg/m ³)	128 mg/m ³
Canada (Quebec)	VEMP (mg/m ³)	16 mg/m ³
Canada (Quebec)	VEMP (ppm)	5 ppm
Australia	TWA (mg/m ³)	16 mg/m ³
Australia	TWA (ppm)	5 ppm
Portugal	OEL TWA (ppm)	1 ppm (indicative limit value)
Portugal	OEL chemical category (PT)	skin - potential for cutaneous exposure indicative limit value

8.2. Exposure controls

Appropriate engineering controls:

Provide local exhaust or general room ventilation.

Personal protective equipment:

Avoid all unnecessary exposure. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure.

Hand protection:

Neoprene or nitrile rubber gloves

Eye protection:

Chemical goggles. Contact lenses should not be worn

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

Where exposure through inhalation may occur from use, respiratory protection equipment is recommended. NIOSH-certified combination organic vapor - amine gas (brown cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear liquid.
Molecular mass	: 385.61 g/mol
Colour	: Straw.
Odour	: Amine-like. Ammonia-like.
Odour threshold	: No data available
Refractive index	: No additional information available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: < 0 °C
Boiling point	: 68 °C (initial, methanol)
Flash point	: 15 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Highly flammable liquid and vapour.

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Vapour pressure	: 50 mm Hg
Relative vapour density at 20 °C	: 5.9
Relative density	: 0.97
% Volatiles	: 40 %
Solubility	: Reacts with water. Dissolves.
Log Pow	: No data available
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: 6 - 36.5 vol %

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable when stored in sealed containers.

10.3. Possibility of hazardous reactions

Reacts with water and moisture in air, liberating methanol.

10.4. Conditions to avoid

Heat. Sparks. Open flame.

10.5. Incompatible materials

Peroxides. Oxidizing agent. alcohols. Acids. Moisture. Water :

10.6. Hazardous decomposition products

Organic acid vapors. Methanol.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled.

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ATE CLP (oral)	100 mg/kg bodyweight
ATE CLP (dermal)	300 mg/kg bodyweight
ATE CLP (vapours)	3 mg/l/4h

Methanol (67-56-1)

LC50 inhalation rat (ppm)	22500 ppm (Exposure time: 8 h)
ATE CLP (oral)	100 mg/kg bodyweight
ATE CLP (dermal)	300 mg/kg bodyweight
ATE CLP (vapours)	3 mg/l/4h

2-Methoxyethanol (109-86-4)

LD50 oral rat	2370 mg/kg 2460 mg/kg
LD50 dermal rabbit	1280 mg/kg
LC50 inhalation rat (ppm)	1478 ppm (Exposure time: 7 h)
ATE CLP (oral)	500 mg/kg bodyweight
ATE CLP (dermal)	1280 mg/kg bodyweight
ATE CLP (vapours)	11 mg/l/4h

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

None of the components in this product at concentrations >0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen.

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Reproductive toxicity	: Not classified
STOT-single exposure	: Causes damage to organs.
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential adverse human health effects and symptoms	: Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled.
Symptoms/effects after inhalation	: Toxic if inhaled. Danger of serious damage to health by prolonged exposure through inhalation. May cause drowsiness or dizziness. Overexposure may cause: Nausea. Headache. Visual disturbances. Cough.
Symptoms/effects after skin contact	: Toxic in contact with skin. Causes skin irritation. Repeated exposure to this material can result in absorption through skin causing significant health hazard.
Symptoms/effects after eye contact	: Causes serious eye damage.
Symptoms/effects after ingestion	: Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard. Oral toxicity is associated with methanol, the solvent and a hydrolysis product which causes nausea, vomiting, headache, visual effects including blindness. Onset of symptoms may be delayed up to 48 hours.
Chronic symptoms	: Methanol may affect the central nervous system resulting in persistent or recurring headaches or impaired vision.

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity	: Not classified
Chronic aquatic toxicity	: Not classified

Methanol (67-56-1)	
LC50 fish 1	28200 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
LC50 fish 2	> 100 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
2-Methoxyethanol (109-86-4)	
LC50 fish 1	10000 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
LC50 fish 2	9650 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Methanol (67-56-1)	
BCF fish 1	< 10
Log Pow	-0.77
2-Methoxyethanol (109-86-4)	
Log Pow	-0.85

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Component	
2-Methoxyethanol (109-86-4)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects

Other adverse effects : This substance may be hazardous to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations	: May be incinerated. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility.
Additional information	: Handle empty containers with care because residual vapours are flammable.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number

In accordance with ADR / RID / IMDG / IATA / ADN

N-(HYDROXYETHYL)-N,N-BIS(TRIMETHOXYSILYLPROPYL)AMINE, 65% in methanol

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14.1. UN number

UN-No. (ADR)	: 1993
UN-No. (IMDG)	: 1993
UN-No. (IATA)	: 1993
UN-No. (ADN)	: 1993
UN-No. (RID)	: 1993

14.2. UN proper shipping name

Proper Shipping Name (ADR)	: FLAMMABLE LIQUID, N.O.S.
Proper Shipping Name (IMDG)	: FLAMMABLE LIQUID, N.O.S.
Proper Shipping Name (IATA)	: Flammable liquid, n.o.s.
Proper Shipping Name (ADN)	: FLAMMABLE LIQUID, N.O.S.
Proper Shipping Name (RID)	: FLAMMABLE LIQUID, N.O.S.
Transport document description (ADR)	: UN 1993 FLAMMABLE LIQUID, N.O.S. (N-(HYDROXYETHYL)-N,N-BIS(TRIMETHOXYSILYLPROPYL)AMINE, 65% in methanol), 3, II, (D/E)
Transport document description (IMDG)	: UN 1993 FLAMMABLE LIQUID, N.O.S. (N-(HYDROXYETHYL)-N,N-BIS(TRIMETHOXYSILYLPROPYL)AMINE, 65% in methanol), 3, II
Transport document description (IATA)	: UN 1993 Flammable liquid, n.o.s. (N-(HYDROXYETHYL)-N,N-BIS(TRIMETHOXYSILYLPROPYL)AMINE, 65% in methanol), 3, II
Transport document description (ADN)	: UN 1993 FLAMMABLE LIQUID, N.O.S. (N-(HYDROXYETHYL)-N,N-BIS(TRIMETHOXYSILYLPROPYL)AMINE, 65% in methanol), 3, II
Transport document description (RID)	: UN 1993 FLAMMABLE LIQUID, N.O.S. (N-(HYDROXYETHYL)-N,N-BIS(TRIMETHOXYSILYLPROPYL)AMINE, 65% in methanol), 3, II

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR)	: 3
Danger labels (ADR)	: 3



IMDG

Transport hazard class(es) (IMDG)	: 3
Danger labels (IMDG)	: 3



IATA

Transport hazard class(es) (IATA)	: 3
Hazard labels (IATA)	: 3



ADN

Transport hazard class(es) (ADN)	: 3
Danger labels (ADN)	: 3

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RID

Transport hazard class(es) (RID) : 3

Danger labels (RID) : 3



14.4. Packing group

Packing group (ADR) : II

Packing group (IMDG) : II

Packing group (IATA) : II

Packing group (ADN) : II

Packing group (RID) : II

14.5. Environmental hazards

Dangerous for the environment : No

Marine pollutant : No

Other information : No supplementary information available

14.6. Special precautions for user

- Overland transport

Classification code (ADR) : F1

Special provisions (ADR) : 274, 601, 640C

Limited quantities (ADR) : 1I

Excepted quantities (ADR) : E2

Packing instructions (ADR) : P001

Mixed packing provisions (ADR) : MP19

Portable tank and bulk container instructions (ADR) : T7

Portable tank and bulk container special provisions (ADR) : TP1, TP8, TP28

Tank code (ADR) : L1.5BN

Vehicle for tank carriage : FL

Transport category (ADR) : 2

Special provisions for carriage - Operation (ADR) : S2, S20

Hazard identification number (Kemler No.) : 33

Orange plates :



Tunnel restriction code (ADR) : D/E

- Transport by sea

Special provisions (IMDG) : 274

Limited quantities (IMDG) : 1 L

Excepted quantities (IMDG) : E2

Packing instructions (IMDG) : P001

IBC packing instructions (IMDG) : IBC02

Tank instructions (IMDG) : T7

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Tank special provisions (IMDG) : TP1, TP8, TP28
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-E
Stowage category (IMDG) : B

- Air transport

PCA Excepted quantities (IATA) : E2
PCA Limited quantities (IATA) : Y341
PCA limited quantity max net quantity (IATA) : 1L
PCA packing instructions (IATA) : 353
PCA max net quantity (IATA) : 5L
CAO packing instructions (IATA) : 364
CAO max net quantity (IATA) : 60L
Special provisions (IATA) : A3
ERG code (IATA) : 3H

- Inland waterway transport

Classification code (ADN) : F1
Special provisions (ADN) : 274, 601, 640C
Limited quantities (ADN) : 1 L
Excepted quantities (ADN) : E2
Carriage permitted (ADN) : T
Equipment required (ADN) : PP, EX, A
Ventilation (ADN) : VE01
Number of blue cones/lights (ADN) : 1

- Rail transport

Classification code (RID) : F1
Special provisions (RID) : 274, 601, 640C
Limited quantities (RID) : 1L
Excepted quantities (RID) : E2
Packing instructions (RID) : P001
Mixed packing provisions (RID) : MP19
Portable tank and bulk container instructions (RID) : T7
Portable tank and bulk container special provisions (RID) : TP1, TP8, TP28
Tank codes for RID tanks (RID) : L1.5BN
Transport category (RID) : 2
Colis express (express parcels) (RID) : CE7
Hazard identification number (RID) : 33

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

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions

Contains a substance on the REACH candidate list in concentration $\geq 0.1\%$ or with a lower specific limit: 2-Methoxyethanol (EC 203-713-7, CAS 109-86-4)

Contains no REACH Annex XIV substances

Contains no substance subject to REGULATION (EU) No 649/2012 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 concerning the export and import of hazardous chemicals.

Substance(s) are not subject to Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC.

Contains no REACH Annex XIV substances

% Volatiles : 40 %

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15.1.2. National regulations

Germany

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : 2-Methoxyethanol is listed
SZW-lijst van mutagene stoffen : None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : None of the components are listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : 2-Methoxyethanol is listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : Methanol,2-Methoxyethanol are listed

Denmark

Class for fire hazard : Class I-1
Store unit : 1 liter
Classification remarks : F <Flam. Liq. 2>; Emergency management guidelines for the storage of flammable liquids must be followed
Danish National Regulations : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Abbreviations and acronyms:

Abbreviations: ND: Not Determined, No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development; GHS: The Globally Harmonized System of Classification and Labelling; APF: Assigned Protection Factor

Other information : Prepared by safety and environmental affairs.

Full text of H- and EUH-statements:

Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 3 (Inhalation:vapour)	Acute toxicity (inhalation:vapour) Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral), Category 3
Acute Tox. 4 (Dermal)	Acute toxicity (dermal), Category 4
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
Repr. 1B	Reproductive toxicity, Category 1B
Skin Irrit. 2	Skin corrosion/irritation, Category 2
STOT SE 1	Specific target organ toxicity — single exposure, Category 1
STOT SE 2	Specific target organ toxicity — Single exposure, Category 2
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.

N-(HYDROXYETHYL)-N,N-BIS(TRIMETHOXYSILYL)PROPYL)AMINE, 65% in methanol

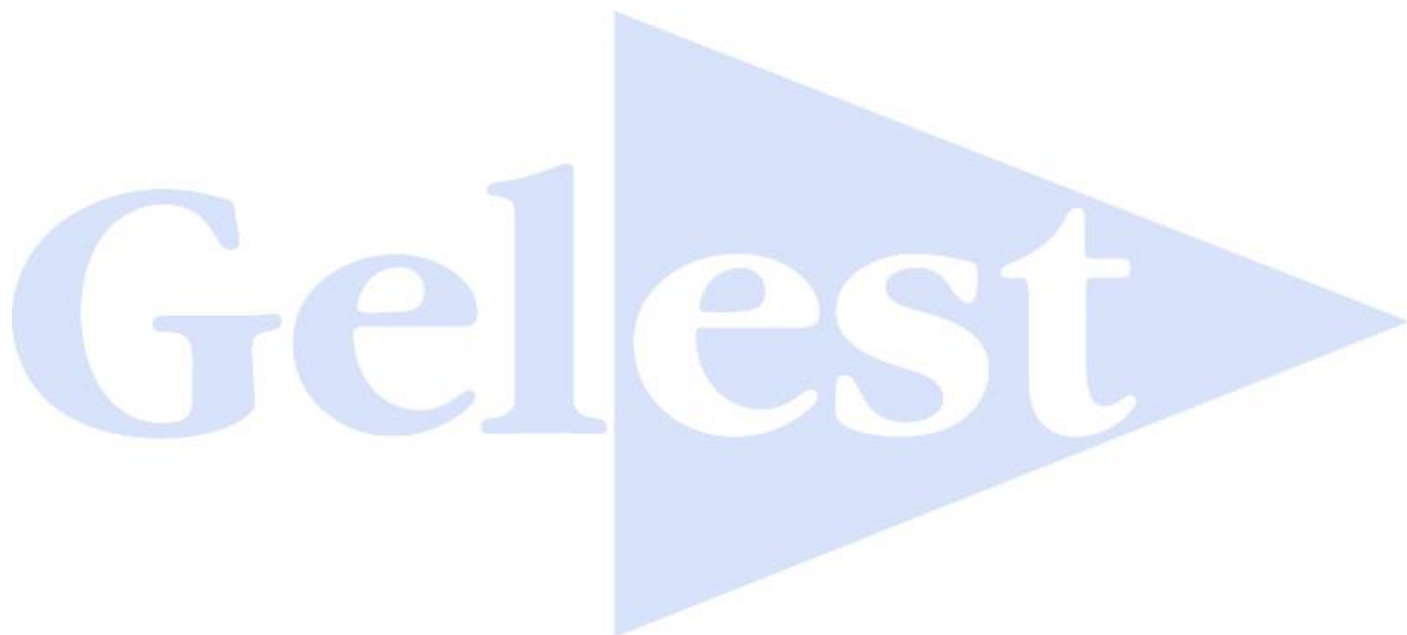
Safety Data Sheet

H332	Harmful if inhaled.
H360FD	May damage fertility. May damage the unborn child.
H370	Causes damage to organs.
H371	May cause damage to organs.

SDS EU (REACH Annex II) - Custom

The information contained in this document has been gathered from reference materials and/or Gelest, Inc. test data and is to the best knowledge and belief of Gelest, Inc. accurate and reliable. Such information is offered solely for your consideration, investigation and verification. It is not suggested or guaranteed that the hazard precautions or procedures described are the only ones which exist. Gelest, Inc. makes no warranties, express or implied, with respect to the use of such information and assumes no responsibility therefore. Information on this safety data sheet is not intended to constitute a basis for product specifications.

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**NOTICE OF TSCA USE RESTRICTIONS AND REQUIRED CONTROLS FOR
XG-0476
N-HYDROXYETHYL-N,N-BIS(TRI- METHOXYSILYLPROPYL)AMINE, 65% in methanol**

Dear Customer:

The chemical product purchased, XG-0476 has been granted a Low Volume Exemption by the U.S. Environmental Protection Agency (EPA) under the Toxic Substances Control Act (TSCA) regulations (40 CFR 723.50). Any manufacturer or processor who intends to use this chemical substance for commercial purposes must comply with the specific use restrictions and controls specified as follows:

USE OF THIS CHEMICAL SUBSTANCE IS RESTRICTED TO: Surface modification; cross-linker for silicones

CONTROLS: Workers must use personal protection equipment to limit dermal and inhalation exposures as described in Section 8: Exposure Controls/Personal Protection of the Safety Data Sheet (SDS). These exposure controls include:

Hand protection: Impervious gloves (neoprene or nitrile rubber gloves)

Eye Protection: Chemical goggles. Contact lenses should not be worn.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: Air-purifying respirator with organic vapor-amine gas cartridge.

WASTE DISPOSAL: Collect and containerize all waste, residues and wash solvents for off-site disposal by incineration. Do not release to POTW via sewer or to surface waters.

If you have questions or need more information related to allowable use of this substance, contact Gelest Regulatory Affairs at 215-547-1015.

Best Regards,

Gelest, Inc.
Regulatory Affairs Department