

Safety Data Sheet SIB1834.0
Date of issue: 01/07/2015 Version: 1.0

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,N'-BIS[3-(TRIMETHOXYSILYL)PROPYL] ETHYLENEDIAMINE, 62% in methanol

Product code : SIB1834.0
Formula : C14H36N2O6Si2

Synonyms : BIS(TRIMETHOXYSILYLPROPYL)ETHYLENEDIAMINE; 1,2-BIS[(3-

TRIMETHOXYSILYL)PROPYLAMÍNO]ETHANE

Chemical family : ORGANOMETHOXYSILANE

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

Use of the substance/mixture : Chemical intermediate

For research and industrial use only

1.3. Details of the supplier of the safety data sheet

GELEST, INC.

11 East Steel Road Morrisville, PA 19067

USA

T 215-547-1015 - F 215-547-2484 - (M-F): 8:00 AM - 5:30 PM EST

info@gelest.com - www.gelest.com

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 (GHS-US)

Flam. Liq. 2 H225 Acute Tox. 3 (Oral) H301 Acute Tox. 3 (Dermal) H311 Acute Tox. 3 (Inhalation:vapour) H331 Skin Irrit. 2 H315 Eye Dam. 1 H318 Skin Sens. 1 H317 STOT SE 1 H370 STOT SE 3 H335 STOT SE 3 H336 Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Signal word (GHS-US)

Hazard pictograms (GHS-US)









GHS07



: Danger

Hazard statements (GHS-US) : H225 - Highly flammable liquid and vapor

H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled

H315 - Causes skin irritation

H317 - May cause an allergic skin reaction H318 - Causes serious eye damage H335 - May cause respiratory irritation H336 - May cause drowsiness or dizziness

H370 - Causes damage to organs

Precautionary statements (GHS-US) : P280 - Wear protective gloves/protective clothing/eye protection/face protection

P210 - Keep away from heat, open flames, sparks. - No smoking

P240 - Ground/bond container and receiving equipment P241 - Use explosion-proof electrical equipment

P242 - Use only non-sparking tools

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P243 - Take precautionary measures against static discharge

P260 - Do not breathe vapors

P264 - Wash hands 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

P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing

P330 - Rinse mouth

P301+P310 - If swallowed: Immediately call a POISON CENTER

P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

P333+P313 - If skin irritation or rash occurs: Get medical advice/attention

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove

contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER

P362 - Take off contaminated clothing and wash before reuse

P370+P378 - In case of fire: Use water spray, foam, carbon dioxide, dry chemical to extinguish

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

P403+P235 - Keep in a cool place

P405 - Store locked up

P501 - Dispose of contents/container to licensed waste disposal facility.

2.3. Other hazards

No additional information available

Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

Substance

Not applicable

3.2. **Mixture**

Name	Product identifier	%	Classification (GHS-US)
N,N'-Bis[(3-trimethoxysilyl)propyl]ethylenediamine	(CAS No) 68845-16-9	> 60	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1B, H317 STOT SE 3, H335
Methanol	(CAS No) 67-56-1	< 40	Flam. Liq. 2, H225 Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 3 (Inhalation:vapour), H331 Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 1, H370 STOT SE 3, H336

SECTION 4: First aid measures

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.

First-aid measures after inhalation Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel

unwell, seek medical advice.

Wash with plenty of soap and water. If skin irritation or rash occurs: Get immediate medical First-aid measures after skin contact advice/attention.

: Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if

First-aid measures after eye contact present and easy to do. Continue rinsing. Get medical advice/attention.

First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Get medical advice/attention.

Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : May cause respiratory irritation. Overexposure may cause: Nausea. Headache. Coughing.

Symptoms/injuries after skin contact : Causes skin irritation. May cause an allergic skin reaction.

Symptoms/injuries after eye contact : Causes serious eye damage.

Symptoms/injuries after ingestion Toxic if swallowed. Swallowing a small quantity of this material will result in serious health

hazard.

Chronic symptoms On contact with water this compound liberates methanol which is known to have a chronic effect on the central nervous system. Methanol may effect the central nervous system resulting in persistent or recurring headaches or impaired vision.

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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 mls/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

Extinguishing media

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

Special hazards arising from the substance or mixture 5.2.

Fire hazard : Highly flammable liquid and vapor. Irritating fumes and organic acid vapors may develop when

material is exposed to elevated temperatures or open flame.

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

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 vapor and mist.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

: Eliminate every possible source of ignition. Use special care to avoid static electric charges. General measures

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

: Equip cleanup crew with proper protection. Protective equipment

Environmental precautions 6.2

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

Clean up any spills as soon as possible, using an absorbent material to collect it. Sweep or Methods for cleaning up

shovel spills into appropriate container for disposal. Use only non-sparking tools.

Reference to other sections 6.4.

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

Precautions for safe handling

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

Avoid all eye and skin contact and do not breathe vapor and mist. Provide good ventilation in Precautions for safe handling process area to prevent accumulation of vapors. Use only in well ventilated areas. Use only

non-sparking tools. Take precautionary measures against static discharge.

Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Hygiene measures Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed

out of the workplace.

Conditions for safe storage, including any incompatibilities

Technical measures : Ground/bond container and receiving equipment. Proper grounding procedures to avoid static

electricity should be followed. Use explosion-proof electrical equipment.

Storage conditions Keep container tightly closed.

Incompatible materials Acids. Alcohols. Moisture. Oxidizing agent. Peroxides. Water. Storage area Store in a well-ventilated place. Store away from heat.

Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

Control parameters

Methanol (67-56-1)		
USA ACGIH	ACGIH TWA (ppm)	200 ppm
USA ACGIH	ACGIH STEL (ppm)	250 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m³)	260 mg/m³

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NIOSH REL (TWA) (ppm)	200 ppm
NIOSH REL (STEL) (mg/m³)	325 mg/m³
NIOSH REL (STEL) (ppm)	250 ppm
OSHA PEL (TWA) (mg/m³)	260 mg/m³
OSHA PEL (TWA) (ppm)	200 ppm
US IDLH (ppm)	6000 ppm
	NIOSH REL (STEL) (mg/m³) NIOSH REL (STEL) (ppm) OSHA PEL (TWA) (mg/m³) OSHA PEL (TWA) (ppm)

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 : 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 : Liquid.
Molecular mass : 384.62 g/mol
Color : Straw. Amber.

Odor : Mild. Amine. Ammonia-like.

Odor threshold : No data available
Refractive index : No data available
pH : No data available
Relative evaporation rate (butyl acetate=1) : No data available

Melting point : No data available Freezing point : < 0 °C

Boiling point : 68 °C (initial, methanol)

Flash point : 20 °C

Auto-ignition temperature : No data available Decomposition temperature : No data available

Flammability (solid, gas) : Highly flammable liquid and vapor

Vapor pressure : 50 mm Hg @ 25° C

Relative vapor density at 20 °C : 5.9
Relative density : 0.89
VOC content : 40 %

Solubility : Reacts with water.

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

Oxidizing properties : No data available

Explosive limits : 6 - 36.5 vol % (lower; upper)

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 in sealed containers.

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10.3. Possibility of hazardous reactions

Reacts with water and moisture in air, liberating methanol.

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

Acids. Alcohols. Moisture. Oxidizing agent. Peroxides. Water.

10.6. Hazardous decomposition products

Methanol. Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Oral: Toxic if swallowed. Dermal: Toxic in contact with skin. Inhalation:vapour: Toxic if inhaled.

N,N'-BIS[3-(TRIMETHOXYSILYL)PROPYL] ETHYLENEDIAMINE, 62% in methanol (68845-16-9)		
ATE US (oral)	250.000 mg/kg body weight	
ATE US (dermal)	750.000 mg/kg body weight	
ATE US (vapors)	7.500 mg/l/4h	

Methanol (67-56-1)		
LD50 oral rat	6200 mg/kg	
LD50 dermal rabbit	20 g/kg	
LC50 inhalation rat (ppm)	22500 ppm (Exposure time: 8 h)	
ATE US (oral)	100.000 mg/kg body weight	
ATE US (dermal)	300.000 mg/kg body weight	
ATE US (vapors)	3.000 mg/l/4h	

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye damage.

Respiratory or skin sensitization : May cause an allergic skin reaction.

Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Causes damage to organs. May cause respiratory irritation. May cause drowsiness or

dizziness.

Specific target organ toxicity (repeated

exposure)

: Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : May cause respiratory irritation. Overexposure may cause: Nausea. Headache. Coughing.

Symptoms/injuries after skin contact : Causes skin irritation. May cause an allergic skin reaction.

Symptoms/injuries after eye contact : Causes serious eye damage.

Symptoms/injuries after ingestion : Toxic if swallowed. Swallowing a small quantity of this material will result in serious health

hazard.

Chronic symptoms : On contact with water this compound liberates methanol which is known to have a chronic

effect on the central nervous system. Methanol may effect the central nervous system resulting

in persistent or recurring headaches or impaired vision.

Reason for classification : Expert judgment

SECTION 12: Ecological information

12.1. Toxicity

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])

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	

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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

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

Effect on ozone layer : No additional information available

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Dispose of

contents/container to licensed waste disposal facility.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number

UN-No.(DOT) : 2924 DOT NA no. UN2924

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Flammable liquids, corrosive, n.o.s.

(N,N'-BIS[(3-TRIMETHOXYSILYL)PROPYL]ETHYLENEDIAMINE)

Department of Transportation (DOT) Hazard

Classes

: 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT) : 3 - Flammable liquid

8 - Corrosive





DOT Symbols : G - Identifies PSN requiring a technical name

Packing group (DOT) : II - Medium Danger

DOT Packaging Exceptions (49 CFR 173.xxx) : 150
DOT Packaging Non Bulk (49 CFR 173.xxx) : 202
DOT Packaging Bulk (49 CFR 173.xxx) : 243

14.3. Additional information

Other information : No supplementary information available.

Transport by sea

DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a

passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this

section is exceeded.

DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

Air transport

DOT Quantity Limitations Passenger aircraft/rail : 1 L

(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 5 L

CFR 175.75)

SECTION 15: Regulatory information

15.1. US Federal regulations

N,N'-Bis[(3-trimethoxysilyl)propyl]ethylenediamine (68845-16-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Methanol (67-56-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Listed on United States SARA Section 313

SARA Section 313 - Emission Reporting 1.0 %

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15.2. International regulations

N,N'-Bis[(3-trimethoxysilyl)propyl]ethylenediamine (68845-16-9)

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on the Canadian NDSL (Non-Domestic Substances List)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Methanol (67-56-1)

Listed on the AICS (Australian Inventory of Chemical Substances)

Listed on the Canadian DSL (Domestic Sustances List)

Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

Listed on the Korean ECL (Existing Chemicals List)

Listed on NZIoC (New Zealand Inventory of Chemicals)

Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)

Japanese Poisonous and Deleterious Substances Control Law

Listed on the Canadian IDL (Ingredient Disclosure List)

15.3. US State regulations

N,N'-BIS[3-(TRIMETHOXYSILYL)PROPYL] ETHYLENEDIAMINE, 62% in methanol(68845-16-9)			
U.S California - Proposition 65 - Carcinogens List	No		
U.S California - Proposition 65 - Developmental Toxicity	No		
U.S California - Proposition 65 - Reproductive Toxicity - Female	No		
U.S California - Proposition 65 - Reproductive Toxicity - Male	No		

N,N'-Bis[(3-trimethoxysilyl)propyl]ethylenediamine (68845-16-9)			845-16-9)
	U.S California -	U.S California -	U.S California -

Proposition 65 - Carcinogens List	Proposition 65 - Developmental Toxicity	Proposition 65 - Reproductive Toxicity - Female	Proposition 65 - Reproductive Toxicity - Male	(NSRL)
No	No	No	No	
Methanol (67-56-1)		·		
U.S California - Proposition 65 - Carcinogens List	U.S California - Proposition 65 - Developmental Toxicity	U.S California - Proposition 65 - Reproductive Toxicity - Female	U.S California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
No	Yes	No	No	

U.S. - California -

No significance risk level

N,N'-Bis[(3-trimethoxysilyl)propyl]ethylenediamine (68845-16-9)

- U.S. Texas Effects Screening Levels Long Term
- U.S. Texas Effects Screening Levels Short Term

Methanol (67-56-1)

- U.S. California Proposition 65 Maximum Allowable Dose Levels (MADL)
- U.S. California SCAQMD Toxic Air Contaminants Non-Cancer Acute
- U.S. California SCAQMD Toxic Air Contaminants Non-Cancer Chronic
- U.S. California Toxic Air Contaminant List (AB 1807, AB 2728)
- U.S. Colorado Hazardous Wastes Discarded Chemical Products, Off-Specification Species, Container and Spill Residues
- U.S. Connecticut Hazardous Air Pollutants HLVs (30 min)
- U.S. Connecticut Hazardous Air Pollutants HLVs (8 hr)
- U.S. Connecticut Volatile Substances
- U.S. Delaware Pollutant Discharge Requirements Reportable Quantities
- U.S. Idaho Non-Carcinogenic Toxic Air Pollutants Acceptable Ambient Concentrations
- U.S. Idaho Non-Carcinogenic Toxic Air Pollutants Emission Levels (ELs)
- U.S. Idaho Occupational Exposure Limits TWAs
- U.S. Illinois Toxic Air Contaminants
- U.S. Louisiana Reportable Quantity List for Pollutants
- U.S. Maine Air Pollutants Hazardous Air Pollutants
- U.S. Maine Chemicals of High Concern
- U.S. Massachusetts Allowable Ambient Limits (AALs)
- U.S. Massachusetts Allowable Threshold Concentrations (ATCs)
- U.S. Massachusetts Oil & Hazardous Material List Groundwater Reportable Concentration Reporting Category 1

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N,N'-Bis[(3-trimethoxysilyl)propyl]ethylenediamine (68845-16-9) U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2 U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1 U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2 U.S. - Massachusetts - Right To Know List U.S. - Massachusetts - Threshold Effects Exposure Limits (TELs) U.S. - Massachusetts - Toxics Use Reduction Act U.S. - Michigan - Occupational Exposure Limits - Skin Designations U.S. - Michigan - Occupational Exposure Limits - STELs U.S. - Michigan - Occupational Exposure Limits - TWAs U.S. - Michigan - Polluting Materials List U.S. - Minnesota - Chemicals of High Concern U.S. - Minnesota - Groundwater Health Risk Limits U.S. - Minnesota - Hazardous Substance List U.S. - Minnesota - Permissible Exposure Limits - Skin Designations U.S. - Minnesota - Permissible Exposure Limits - STELs U.S. - Minnesota - Permissible Exposure Limits - TWAs U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances U.S. - New Jersey - Environmental Hazardous Substances List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - New Jersey - Special Health Hazards Substances List U.S. - New Jersey - Water Quality - Ground Water Quality Criteria U.S. - New Jersey - Water Quality - Practical Quantitation Levels (PQLs) U.S. - New York - Occupational Exposure Limits - Skin Designations U.S. - New York - Occupational Exposure Limits - TWAs U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 1-Hour U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour U.S. - North Dakota - Hazardous Wastes - Discarded Chemical Products, Off-Specification Species, Container and Spill Residues U.S. - Oregon - Permissible Exposure Limits - TWAs U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 1-Hour U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - Annual U.S. - South Carolina - Toxic Air Pollutants - Maximum Allowable Concentrations U.S. - South Carolina - Toxic Air Pollutants - Pollutant Categories U.S. - Tennessee - Occupational Exposure Limits - Skin Designations U.S. - Tennessee - Occupational Exposure Limits - STELs U.S. - Tennessee - Occupational Exposure Limits - TWAs U.S. - Texas - Effects Screening Levels - Long Term U.S. - Texas - Effects Screening Levels - Short Term U.S. - Vermont - Permissible Exposure Limits - Skin Designations U.S. - Vermont - Permissible Exposure Limits - STELs U.S. - Vermont - Permissible Exposure Limits - TWAs U.S. - Washington - Dangerous Waste - Discarded Chemical Products List

SECTION 16: Other information

U.S. - Washington - Permissible Exposure Limits - Skin Designations

U.S. - Washington - Permissible Exposure Limits - STELs U.S. - Washington - Permissible Exposure Limits - TWAs

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.: Chemcial 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.

Full text of H-phrases::

Acute Tox. 3 (Dermal)	Acute toxicity (dermal) Category 3
Acute Tox. 3 (Inhalation:vapour)	Acute toxicity (inhalation:vapor) Category 3
Acute Tox. 3 (Oral)	Acute toxicity (oral) Category 3
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Flam. Liq. 2	Flammable liquids Category 2
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1

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Skin Sens. 1B	Skin sensitization Category 1B
STOT SE 1	Specific target organ toxicity (single exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H225	Highly flammable liquid and vapor
H301	Toxic if swallowed
H311	Toxic in contact with skin
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H331	Toxic if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H370	Causes damage to organs

HMIS III Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is

given

Flammability : 4 Severe Hazard
Physical : 1 Slight Hazard

Prepared by safety and environmental affairs.

Date of issue: 01/07/2015 Version: 1.0

SDS US (GHS HazCom 2012) - Custom

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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