

Safety Data Sheet SIA0589.0
Date of issue: 12/23/2014 Version: 1.0

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

#### 1.1. Product identifier

Product form : Substance
Physical state : Liquid

Substance name : N-(2-AMINOETHYL)-3-AMINOPROPYLMETHYLDIMETHOXYSILANE, tech-95

Product code : SIA0589.0
Formula : C8H22N2O2Si

Synonyms : DIAMINOMETHYLDIMETHOXYSILANE; N-[3-

(DIMETHOXYMETHYLSILYL)PROPYLJETHYLENEDIAMINE; (3-

TRIMETHOXYSILYLPROPYL)DIETHYLENETRIAMINE

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. 4 H227 Skin Irrit. 2 H315 Eye Dam. 1 H318 Skin Sens. 1 H317 STOT SE 3 H335 Aquatic Acute 2 H401

Full text of H-phrases: see section 16

#### 2.2. Label elements

#### **GHS-US** labeling

Hazard pictograms (GHS-US)





GHS05 GHS07

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H227 - Combustible liquid H315 - Causes skin irritation

H317 - May cause an allergic skin reaction

H318 - Causes serious eye damage H335 - May cause respiratory irritation

H401 - Toxic to aquatic life

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

P261 - Avoid breathing mist, vapors

P264 - Wash hands thoroughly after handling

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

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

P302+P352 - If on skin: Wash with plenty of water

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

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

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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 doctor

P362 - Take off contaminated clothing and wash before reuse

P362+P364 - Take off contaminated clothing and wash it 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.

#### Other hazards

No additional information available

#### 24 **Unknown acute toxicity (GHS-US)**

No data available

#### **SECTION 3: Composition/information on ingredients**

#### **Substance**

Substance type : Multi-constituent

Name : N-(2-AMINOETHYL)-3-AMINOPROPYLMETHYLDIMETHOXYSILANE, tech-95

CAS No : 3069-29-2 EC no : 221-336-6

Name	Product identifier	%	Classification (GHS-US)
N-(2-aminoethyl)-3-aminopropylmethyldimethoxysilane	(CAS No) 3069-29-2	> 95	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335 Aquatic Acute 2, H401
N,N'-Bis(methyldimethoxysilylpropyl)ethane diamine	(CAS No) 175394-72-6	< 2	Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335
Methanol	(CAS No) 67-56-1		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

#### **Mixture**

Not applicable

#### **SECTION 4: First aid measures**

#### **Description of first aid measures**

: Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek First-aid measures general

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 to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell,

seek medical advice.

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

advice/attention.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Remove contact lenses, if

present and easy to do. Continue rinsing. Get immediate medical advice/attention.

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

#### Most important symptoms and effects, both acute and delayed

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

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 : May be harmful if swallowed.

On contact with water this compound liberates methanol which is known to have a chronic Chronic symptoms 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: This product reacts with water in the acid contents of the stomach to form methanol. 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

: Combustible liquid. Irritating fumes and organic acid vapors may develop when material is Fire hazard

exposed to elevated temperatures or open flame.

5.3. Advice for firefighters

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

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

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.

#### **Environmental precautions**

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

#### 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.

#### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

#### **SECTION 7: Handling and storage**

### Precautions for safe handling

: Keep away from heat, sparks, open flames, hot surfaces. - No smoking. Additional hazards when processed

: 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 non-sparking tools.

Wash hands and other exposed areas with mild soap and water before eating, drinking or Hygiene measures

smoking and when leaving work. 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.

Storage conditions Keep container tightly closed.

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

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

#### 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		
USA NIOSH	NIOSH REL (TWA) (ppm)	200 ppm		

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Methanol (67-56-1)				
USA NIOSH	NIOSH REL (STEL) (mg/m³)	325 mg/m³		
USA NIOSH	NIOSH REL (STEL) (ppm)	250 ppm		
USA OSHA	OSHA PEL (TWA) (mg/m³)	260 mg/m³		
USA OSHA	OSHA PEL (TWA) (ppm)	200 ppm		
USA IDLH	US IDLH (ppm)	6000 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 or face shield. 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 : Clear liquid.

Molecular mass : 206.36 g/mol

Color : Straw

Odor : Amine. Ammonia-like.
Odor threshold : No data available

Refractive index : 1.4447

pH : No data available

Relative evaporation rate (butyl acetate=1) : < 1

Melting point : No data available

Freezing point : < 0 °C Boiling point : 265 °C Flash point : 90 °C Auto-ignition temperature : 280 °C

Decomposition temperature : No data available
Flammability (solid, gas) : Combustible liquid
Vapor pressure : No data available

Relative vapor density at 20 °C : > 1
Relative density : 0.975

Solubility Reacts with water. Log Pow : No data available Log Kow : No data available Viscosity, kinematic : No data available No data available Viscosity, dynamic Explosive properties : No data available : No data available Oxidizing properties : No data available Explosive limits

#### 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.

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#### 10.4. Conditions to avoid

Open flame. Heat. Sparks.

#### 10.5. Incompatible materials

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

#### 10.6. Hazardous decomposition products

Methanol. Organic amine vapors.

#### **SECTION 11: Toxicological information**

#### 11.1. Information on toxicological effects

Acute toxicity : Not classified

N-(2-aminoethyl)-3-aminopropylmethyldimethoxysilane (3069-29-2)		
LD50 oral rat	> 2000 mg/kg	
LD50 dermal rabbit	15520 mg/kg	
ATE US (dermal)	15520.000 mg/kg body weight	
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) : May cause respiratory irritation.

Specific target organ toxicity (repeated

exposure)

: Not classified

Aspiration hazard : Not classified

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

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 : May be harmful if swallowed.

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

Ecology - general : Toxic to aquatic life.

N-(2-aminoethyl)-3-aminopropylmethyldimethoxysilane (3069-29-2)		
ErC50 (algae)	5.5 mg/l 72 hours	
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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#### **Mobility in soil**

No additional information available

#### 12.5. Other adverse effects

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

: No additional information available Effect on ozone layer

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

#### SECTION 13: Disposal considerations

#### 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**

#### **UN** number

Packing group (DOT)

DOT NA no. NA1993

#### 14.2. **UN proper shipping name**

Proper Shipping Name (DOT) : Combustible liquid, n.o.s.

(N-(2-AMINOETHYL)-3-AMINOPROPYLMETHYLDIMETHOXYSILANE)

Department of Transportation (DOT) Hazard

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

Classes

**DOT Symbols** 

: D - Proper shipping name for domestic use only, or to and from Canada, G - Identifies PSN requiring a technical name

: III - Minor Danger

DOT Packaging Exceptions (49 CFR 173.xxx) : 150 DOT Packaging Non Bulk (49 CFR 173.xxx) : 203 DOT Packaging Bulk (49 CFR 173.xxx) : 241

14.3. Additional information

Other information : No supplementary information available.

#### Transport by sea

**DOT Vessel Stowage Location** A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a

passenger vessel.

#### Air transport

DOT Quantity Limitations Passenger aircraft/rail : 60 L

(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 220 L

CFR 175.75)

#### **SECTION 15: Regulatory information**

#### 15.1. US Federal regulations

#### N-(2-aminoethyl)-3-aminopropylmethyldimethoxysilane (3069-29-2)

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

#### N,N'-Bis(methyldimethoxysilylpropyl)ethane diamine (175394-72-6)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

#### 15.2. International regulations

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#### N-(2-aminoethyl)-3-aminopropylmethyldimethoxysilane (3069-29-2)

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)

#### 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)

#### N,N'-Bis(methyldimethoxysilylpropyl)ethane diamine (175394-72-6)

Listed on NZIoC (New Zealand Inventory of Chemicals)

#### 15.3. US State regulations

N-(2-AMINOETHYL)-3-AMINOPROPYLMETHYLDIMETHOXYSILANE, tech-95(3069-29-2)			
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	004	

N-(2-aminoethyl)-3-aminopropylmethyldimethoxysilane (3069-29-2)				
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	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	
N,N'-Bis(methyldimethoxysilylpropyl)ethane diamine (175394-72-6)				
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	No	No	No	

#### 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

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#### Methanol (67-56-1) 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 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 U.S. - Washington - Permissible Exposure Limits - Skin Designations

#### **SECTION 16: Other information**

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

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Acute Tox. 3 (Oral)	Acute toxicity (oral) Category 3
Aquatic Acute 2	Hazardous to the aquatic environment - Acute Hazard Category 2
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Flam. Liq. 2	Flammable liquids Category 2
Flam. Liq. 4	Flammable liquids Category 4
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
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
H227	Combustible liquid
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
H401	Toxic to aquatic life

#### **HMIS III Rating**

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

given

Flammability : 2 Moderate Hazard
Physical : 1 Slight Hazard

Prepared by safety and environmental affairs.

Date of issue: 12/23/2014 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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