



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

1.1. Product identifier

Product form	: Mixture
Physical state	: Liquid
Product name	: GLASSCLAD® 18
Product code	: PP1-GC18
Synonyms	: Octadecyl functional silane, 20% in t-butanol/diacetone alcohol
Chemical family	: ORGANOSILANE

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
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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)
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

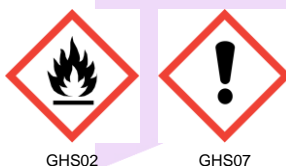
Classification (GHS-US)

Flam. Liq. 2 H225
 Skin Irrit. 2 H315
 Eye Irrit. 2A H319
 STOT SE 3 H335
 Full text of H-phrases: see section 16

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US)	: Danger
Hazard statements (GHS-US)	: H225 - Highly flammable liquid and vapor H315 - Causes skin irritation H319 - Causes serious eye irritation H335 - May cause respiratory irritation
Precautionary statements (GHS-US)	: P280 - Wear protective gloves/protective clothing/eye protection/face protection P261 - Avoid breathing vapors P243 - Take precautionary measures against static discharge 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 P264 - Wash hands thoroughly after handling P271 - Use only outdoors or in a well-ventilated area P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower P332+P313 - If skin irritation 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 P337+P313 - If eye irritation persists: Get medical advice/attention P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing P312 - Call a doctor if you feel unwell

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P362 - Take off contaminated clothing and wash before reuse
P370+P378 - In case of fire: Use water spray or fog, foam, carbon dioxide, dry chemical to extinguish
P403+P235 - Keep in a cool place
P405 - Store locked up
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/container to licensed waste disposal facility.

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	Classification (GHS-US)
2-Methyl-2-propan-2-ol	(CAS No) 75-65-0	> 35	Flam. Liq. 2, H225 Eye Irrit. 2A, H319 STOT SE 3, H335
4-Hydroxy-4-methyl-2-pentanone	(CAS No) 123-42-2	> 35	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319
Octadecyl functional silane*		> 20	Not classified

*The specific chemical identity, CAS number and/or exact concentration is withheld as a trade secret per applicable regulations and statutes.

Full text of H-phrases: 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.

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.

First-aid measures after skin contact : Wash with plenty of soap and water. Get 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 medical advice/attention.

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

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

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after skin contact : Causes skin irritation.

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

Symptoms/injuries after ingestion : May be harmful if swallowed.

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

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

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

5.2. Special hazards arising from the substance or mixture

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.

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

5.3. Advice for firefighters

Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray or fog for cooling exposed containers.

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

6.1. Personal precautions, protective equipment and emergency procedures

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

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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.

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 vapors are flammable.
Precautions for safe handling : Avoid all eye and skin contact and do not breathe vapor and mist. Containers and transfer lines require grounding during use. Provide good ventilation in process area to prevent accumulation of vapors. Use only non-sparking tools. Use only outdoors or in a well-ventilated area.
Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. 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 : Moist air. Oxidizing agent. Water.
Storage area : Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

2-Methyl-2-propan-2-ol (75-65-0)		
USA ACGIH	ACGIH TWA (ppm)	100 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	300 mg/m ³
USA NIOSH	NIOSH REL (TWA) (ppm)	100 ppm
USA NIOSH	NIOSH REL (STEL) (mg/m ³)	450 mg/m ³
USA NIOSH	NIOSH REL (STEL) (ppm)	150 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	300 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	100 ppm
USA IDLH	US IDLH (ppm)	1600 ppm
4-Hydroxy-4-methyl-2-pentanone (123-42-2)		
USA ACGIH	ACGIH TWA (ppm)	50 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	240 mg/m ³
USA NIOSH	NIOSH REL (TWA) (ppm)	50 ppm
USA OSHA	OSHA PEL (TWA) (mg/m ³)	240 mg/m ³
USA OSHA	OSHA PEL (TWA) (ppm)	50 ppm
USA IDLH	US IDLH (ppm)	1800 ppm (10% LEL)

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.

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Respiratory protection : NIOSH-certified organic vapor (black cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Hazy liquid.
Color : Amber.
Odor : No data available
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 : -30 °C (Solidification Point)
Boiling point : 100 °C (initial)
Flash point : 10 °C
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : Highly flammable liquid and vapor
Vapor pressure : 45 mm Hg @ 25°C
Relative vapor density at 20 °C : > 1
Relative density : 0.88
VOC content : > 75 °C
Solubility : Insoluble in water. 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 : No data available

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 bottles under a dry nitrogen for six months.

10.3. Possibility of hazardous reactions

Undergoes non-hazardous polymerization.

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

Moist air. Oxidizing agent. Water.

10.6. Hazardous decomposition products

Organic acid vapors. Silicon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

2-Methyl-2-propan-2-ol (75-65-0)	
LD50 oral rat	2200 mg/kg
LD50 dermal rabbit	> 2 g/kg
LC50 inhalation rat (ppm)	> 10000 ppm/4h
ATE US (oral)	2200.000 mg/kg body weight

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4-Hydroxy-4-methyl-2-pentanone (123-42-2)

LD50 oral rat	4 g/kg
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

2-Methyl-2-propan-2-ol (75-65-0)

National Toxicology Program (NTP) Status	1 - Evidence of Carcinogenicity
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.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Symptoms/injuries after ingestion	: May be harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

2-Methyl-2-propan-2-ol (75-65-0)

LC50 fish 1	6130 - 6700 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 Daphnia 1	933 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 Daphnia 2	4607 - 6577 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])

4-Hydroxy-4-methyl-2-pentanone (123-42-2)

LC50 fish 1	420 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])
LC50 fish 2	420 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus)

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

2-Methyl-2-propan-2-ol (75-65-0)

BCF fish 1	1.09
Log Pow	0.35

4-Hydroxy-4-methyl-2-pentanone (123-42-2)

Log Pow	1.03
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12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

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	: Incinerate. 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 vapors are flammable.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number

UN-No.(DOT)	: 1993
DOT NA no.	UN1993

14.2. UN proper shipping name

Proper Shipping Name (DOT)	: Flammable liquids, n.o.s. (2-METHYL-2-PROPAN-2-OL)
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Department of Transportation (DOT) Hazard Classes : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120

Hazard labels (DOT) : 3 - Flammable liquid



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) : 242

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.

Air transport

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 5 L

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L

SECTION 15: Regulatory information

15.1. US Federal regulations

2-Methyl-2-propan-2-ol (75-65-0)

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 %

4-Hydroxy-4-methyl-2-pentanone (123-42-2)

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

EPA TSCA Regulatory Flag : T - T - indicates a substance that is the subject of a Section 4 test rule under TSCA.

Octadecyl functional silane

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

15.2. International regulations

2-Methyl-2-propan-2-ol (75-65-0)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on the Canadian DSL (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 the Japanese ISHL (Industrial Safety and Health Law)
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)
Listed on the Canadian IDL (Ingredient Disclosure List)

4-Hydroxy-4-methyl-2-pentanone (123-42-2)

Listed on the AICS (Australian Inventory of Chemical Substances)
Listed on the Canadian DSL (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 the Japanese ISHL (Industrial Safety and Health Law)
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)
Listed on the Canadian IDL (Ingredient Disclosure List)

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15.3. US State regulations

GLASSCLAD® 18()				
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		
2-Methyl-2-propan-2-ol (75-65-0)				
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	
4-Hydroxy-4-methyl-2-pentanone (123-42-2)				
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	
Octadecyl functional silane				
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	
2-Methyl-2-propan-2-ol (75-65-0)				
U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)				
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)				
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)				
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. - Massachusetts - Drinking Water Guidelines				
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 - Toxics Use Reduction Act				
U.S. - Michigan - Occupational Exposure Limits - STELs				
U.S. - Michigan - Occupational Exposure Limits - TWAs				
U.S. - Minnesota - Hazardous Substance List				
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 - TWAs				
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour				
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. - 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 - STELs				
U.S. - Vermont - Permissible Exposure Limits - TWAs				
U.S. - Washington - Permissible Exposure Limits - STELs				
U.S. - Washington - Permissible Exposure Limits - TWAs				

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4-Hydroxy-4-methyl-2-pentanone (123-42-2)

U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
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. - 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. - Michigan - Occupational Exposure Limits - TWAs
U.S. - Minnesota - Hazardous Substance List
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 - Right to Know Hazardous Substance List
U.S. - New York - Occupational Exposure Limits - TWAs
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour
U.S. - Oregon - Permissible Exposure Limits - TWAs
U.S. - Pennsylvania - RTK (Right to Know) List
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 - TWAs
U.S. - Washington - Permissible Exposure Limits - STELs
U.S. - Washington - Permissible Exposure Limits - TWAs
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 25 Feet to Less Than 40 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 40 Feet to Less Than 75 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 75 Feet or Greater
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights Less Than 25 Feet

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.

Full text of H-phrases::

Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 2	Flammable liquids Category 2
Flam. Liq. 4	Flammable liquids Category 4
Skin Irrit. 2	Skin corrosion/irritation Category 2
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H225	Highly flammable liquid and vapor
H227	Combustible liquid
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation

HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur
Flammability : 4 Severe Hazard
Physical : 1 Slight Hazard

Prepared by safety and environmental affairs.

Date of issue: 01/06/2015 Version: 1.0

SDS US (GHS HazCom 2012) - Custom

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Safety Data Sheet

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

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