

**TRIS(DIMETHYLAMINO)SILANE**

Safety Data Sheet SIT8714.0

Date of issue: 05/08/2014

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Version: 2.1

SECTION 1: Identification**1.1. Identification**

Product name	: TRIS(DIMETHYLAMINO)SILANE
Product code	: SIT8714.0
Product form	: Substance
Physical state	: Liquid
Formula	: C ₆ H ₁₉ N ₃ Si
Synonyms	: TRIS(DIMETHYLAMIDO)SILYLHYDRIDE; N,N,N',N',N",N"-HEXAMETHYLSILANETRIAMINE
Chemical family	: ORGANOAMINOSILANE

1.2. Recommended use and restrictions on use

Recommended use : Chemical intermediate

1.3. Supplier**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: Hazard(s) identification**2.1. Classification of the substance or mixture****GHS-US classification**

Flammable liquids Category 3	H226 Flammable liquid and vapor
Acute toxicity (oral) Category 4	H302 Harmful if swallowed
Acute toxicity (dermal) Category 3	H311 Toxic in contact with skin
Acute toxicity (inhalation:vapor) Category 4	H332 Harmful if inhaled
Skin corrosion/irritation Category 1B	H314 Causes severe skin burns and eye damage
Serious eye damage/eye irritation Category 1	H318 Causes serious eye damage
Specific target organ toxicity (single exposure) Category 3	H335 May cause respiratory irritation
Full text of H statements : see section 16	

2.2. GHS Label elements, including precautionary statements**GHS US labeling**

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Danger

Hazard statements (GHS US) :

H226 - Flammable liquid and vapor
H302+H332 - Harmful if swallowed or if inhaled
H311 - Toxic in contact with skin
H314 - Causes severe skin burns and eye damage
H318 - Causes serious eye damage
H335 - May cause respiratory irritation

Precautionary statements (GHS US) :

P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P264 - Wash hands thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P260 - Do not breathe vapors.
P310 - Immediately call a doctor
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.
P243 - Take precautionary measures against static discharge.
P370+P378 - In case of fire: Use water spray, foam, carbon dioxide, dry chemical to extinguish.
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell
P302+P352 - If on skin: Wash with plenty of water

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P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P361 - Take off immediately all contaminated clothing.
P363 - Wash contaminated clothing before reuse.
P271 - Use only outdoors or in a well-ventilated area.
P233 - 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. Hazards not otherwise classified (HNOC)

Other hazards not contributing to the classification : Additional dimethylamine may be formed by reaction with moisture and water. The US OSHA PEL (TWA) for dimethylamine is 10 ppm.

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Mono-constituent
Name : TRIS(DIMETHYLAMINO)SILANE
CAS-No. : 15112-89-7

Name	Product identifier	%	GHS-US classification
Tris(dimethylamino)silane	(CAS-No.) 15112-89-7	95 - 100	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Acute Tox. 3 (Dermal), H311 Acute Tox. 4 (Inhalation:vapour), H332 Skin Corr. 1B, H314 Eye Dam. 1, H318 STOT SE 3, H335

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

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. Immediately call a poison center or doctor/physician.

First-aid measures after skin contact : Wash with plenty of soap and water. 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.

First-aid measures after ingestion : Never give anything by mouth to an unconscious person. Immediately call a poison center or doctor/physician.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects : Causes severe skin burns and eye damage.

Symptoms/effects after inhalation : Harmful if inhaled. Danger of serious damage to health by prolonged exposure through inhalation. May cause respiratory irritation. Overexposure may cause: Cough. Headache. Nausea.

Symptoms/effects after skin contact : Toxic in contact with skin. Repeated exposure to this material can result in absorption through skin causing significant health hazard. Causes (severe) skin burns.

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

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

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

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

5.2. Specific hazards arising from the chemical

Fire hazard : Flammable liquid and vapor. Irritating fumes of dimethylamine and organic acid vapors may develop when material is exposed to water or open flame.

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

5.3. Special protective equipment and precautions for fire-fighters

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

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.

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

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

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 : Acids. Alcohols. Oxidizing agent. Moisture. Water.

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Appropriate engineering controls

Appropriate engineering controls : Provide local exhaust or general room ventilation.

8.3. Individual protection measures/Personal protective equipment

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:

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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	: 161.32 g/mol
Color	: Straw.
Odor	: Acrid. Amine-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	: -90 °C
Freezing point	: No data available
Boiling point	: 145 - 148 °C
Flash point	: 25 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Flammable liquid and vapor
Vapor pressure	: 16 mm Hg @ 4°C
Relative vapor density at 20 °C	: > 1
Relative density	: 0.838
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
Explosion 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 containers stored under a dry inert atmosphere.

10.3. Possibility of hazardous reactions

Reacts with water and moisture in air, liberating dimethylamine.

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

Acids. Alcohols. Oxidizing agent. Moisture. Water.

10.6. Hazardous decomposition products

Dimethylamine. Hydrogen. Organic acid vapors.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

TRIS(DIMETHYLAMINO)SILANE (15112-89-7)

LD50 oral rat	594 mg/kg
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Tris(dimethylamino)silane (15112-89-7)

LD50 oral rat	594 mg/kg
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Tris(dimethylamino)silane (15112-89-7)	
LD50 dermal rabbit	477 mg/kg
LC50 inhalation rat (ppm)	38 ppm (Exposure time: 6 h)
ATE US (vapors)	11 mg/l/4h

Skin corrosion/irritation	: Causes severe skin burns and eye damage.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitization	: Not classified
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
Potential Adverse human health effects and symptoms	: Harmful if swallowed. Harmful if inhaled. Toxic in contact with skin.
Symptoms/effects after inhalation	: Harmful if inhaled. Danger of serious damage to health by prolonged exposure through inhalation. May cause respiratory irritation. Overexposure may cause: Cough. Headache. Nausea.
Symptoms/effects after skin contact	: Toxic in contact with skin. Repeated exposure to this material can result in absorption through skin causing significant health hazard. Causes (severe) skin burns.
Symptoms/effects after eye contact	: Causes serious eye damage.
Symptoms/effects after ingestion	: Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

SECTION 12: Ecological information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

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 the ozone layer	: No additional information available

SECTION 13: Disposal considerations

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

SECTION 14: Transport information

14.1. UN number

UN-No.(DOT)	: 3384
DOT NA no.	UN3384

14.2. UN proper shipping name

Transport document description	: UN3384 Toxic by inhalation liquid, flammable, n.o.s. (TRIS(DIMETHYLAMINO)SILANE), 6.1 (3), I
Proper Shipping Name (DOT)	: Toxic by inhalation liquid, flammable, n.o.s. (TRIS(DIMETHYLAMINO)SILANE)
Class (DOT)	: 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132
Packing group (DOT)	: I - Great Danger

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Hazard labels (DOT) : 6.1 - Poison inhalation hazard
3 - Flammable liquid



DOT Packaging Non Bulk (49 CFR 173.xxx) : 227
DOT Packaging Bulk (49 CFR 173.xxx) : 244
DOT Packaging Exceptions (49 CFR 173.xxx) : None
DOT Symbols : G - Identifies PSN requiring a technical name

14.3. Additional information

Emergency Response Guide (ERG) Number : 131

Other information : No supplementary information available.

Transport by sea

DOT Vessel Stowage Location : D - The material must be stowed "on deck only" 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, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.

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

Air transport

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

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

SECTION 15: Regulatory information

15.1. US Federal regulations

Tris(dimethylamino)silane (15112-89-7)

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

15.2. International regulations

CANADA

Tris(dimethylamino)silane (15112-89-7)

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

EU-Regulations

Tris(dimethylamino)silane (15112-89-7)

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

National regulations

Tris(dimethylamino)silane (15112-89-7)

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

Listed on the Japanese ISHL (Industrial Safety and Health Law)

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

Full text of H-phrases::

H226	Flammable liquid and vapor
H302	Harmful if swallowed
H311	Toxic in contact with skin
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H332	Harmful if inhaled
H335	May cause respiratory irritation

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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.

Hazard Rating

Health : 4 Severe Hazard - Life-threatening, major or permanent damage may result from single or repeated overexposures

Flammability : 3 Serious Hazard - Materials capable of ignition under almost all normal temperature conditions. Includes flammable liquids with flash points below 73 F and boiling points above 100 F. as well as liquids with flash points between 73 F and 100 F. (Classes IB & IC)

Physical : 2 Moderate Hazard - Materials that are unstable and may undergo violent chemical changes at normal temperature and pressure with low risk for explosion. Materials may react violently with water or form peroxides upon exposure to air.

Prepared by safety and environmental affairs.

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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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