

TRIS(TRIMETHYLSILYL)PHOSPHINE

Safety Data Sheet SIT8723.3

Date of issue: 08/12/2016

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 : TRIS(TRIMETHYLSILYL)PHOSPHINE
 Product code : SIT8723.3
 Formula : C₉H₂₇PSi₃
 Synonyms : PHOSPHINE, TRIS(TRIMETHYLSILYL)-
 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 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****GHS-US classification**

Pyr. Liq. 1 H250
 Skin Irrit. 2 H315
 Eye Irrit. 2A H319
 STOT SE 3 H335

Full text of H statements : see section 16

2.2. Label elements**GHS-US labeling**

Hazard pictograms (GHS-US) :



GHS02

GHS07

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H250 - Catches fire spontaneously if exposed to air
 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
 P312 - Call a doctor if you feel unwell
 P210 - Keep away from heat, open flames, sparks. - No smoking
 P222 - Do not allow contact with air
 P261 - Avoid breathing vapors
 P264 - Wash hands thoroughly after handling
 P271 - Use only outdoors or in a well-ventilated area
 P302+P334 - If on skin: Immerse in cool water/wrap with wet bandages
 P332+P313 - If skin irritation occurs: Get medical advice/attention
 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
 P337+P313 - If eye irritation persists: Get medical advice/attention
 P321 - Specific treatment (see first aid instructions on this label)
 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

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P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P422 - Store contents under nitrogen or argon in sealed containers below 25°C
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

Substance type : Mono-constituent
Name : TRIS(TRIMETHYLSILYL)PHOSPHINE
CAS No : 15573-38-3

Name	Product identifier	%	GHS-US classification
Tris(trimethylsilyl)phosphine	(CAS No) 15573-38-3	97 - 100	Pyr. Liq. 1, H250 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H335

3.2. Mixture

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. 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 if you feel unwell.

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

Symptoms/injuries after inhalation : May cause respiratory irritation. May be harmful if inhaled.

Symptoms/injuries after skin contact : Causes skin irritation. May be harmful in contact with skin.

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. Foam. Carbon dioxide. Dry chemical.

Unsuitable extinguishing media : Do not use straight streams.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Catches fire spontaneously if exposed to air. Pyrophoric liquid. Irritating fumes and vapors may develop when material is exposed to water 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 to cool exposed surfaces.

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.

6.1.1. For non-emergency personnel

Protective equipment : Wear protective equipment as described in Section 8.

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Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Equip cleanup crew with proper protection. For further information refer to section 8: "Exposure controls/personal 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

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

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.

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 : Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Product may ignite spontaneously if exposed to air.

Precautions for safe handling : Avoid all eye and skin contact and do not breathe vapor and mist. Do not allow contact with air. Use only outdoors or in a well-ventilated area.

Hygiene measures : Wash contaminated clothing before reuse. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed. Store locked up. Store under dry nitrogen or argon in sealed containers below 25°C.

Incompatible materials : Acids. Alcohols. Moisture. Oxygen. 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

Tris(trimethylsilyl)phosphine (15573-38-3)		
USA ACGIH	ACGIH TWA (ppm)	0.3 ppm Phosphine
USA OSHA	OSHA PEL (TWA) (ppm)	0.3 ppm Phosphine

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 : 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. Oxidizes rapidly and can ignite on contact with air.

Molecular mass : 250.54 g/mol

Color : Straw.

Odor : Disagreeable.

Odor threshold : No data available

Refractive index : 1.5077

pH : No data available

Relative evaporation rate (butyl acetate=1) : No data available

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Melting point	: No data available
Freezing point	: 24 - 26 °C neat
Boiling point	: 102 - 105 °C - initial (hexane)
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Catches fire spontaneously if exposed to air,Pyrophoric liquid
Vapor pressure	: < 0.5 mm Hg @ 25°C
Relative vapor density at 20 °C	: > 1
Relative density	: 0.867
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

No additional information available

10.4. Conditions to avoid

Heat. Open flame. Sparks.

10.5. Incompatible materials

Acids. Alcohols. Moisture. Oxidizing agent. Oxygen. Water.

10.6. Hazardous decomposition products

Organic acid vapors. Phosphines. Phosphine oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
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
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: May cause respiratory irritation.
Specific target organ toxicity (repeated exposure)	: Not classified May cause damage to organs through prolonged or repeated exposure
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: This material is expected to have health effects similar to phosphine, but no studies have been conducted.
Symptoms/injuries after inhalation	: May cause respiratory irritation. May be harmful if inhaled.
Symptoms/injuries after skin contact	: Causes skin irritation. May be harmful in contact with skin.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
Symptoms/injuries after ingestion	: May be harmful if swallowed.
Reason for classification	: Expert judgment

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SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Toxic to aquatic life with long lasting effects.

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 ozone layer : No additional information available

Effect on the global warming : No known effects from this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Sewage disposal recommendations : Do not dispose of waste into sewer.

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) : 2845

DOT NA no. UN2845

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Pyrophoric liquids, organic, n.o.s.
(TRIS(TRIMETHYLSILYL)PHOSPHINE)

Class (DOT) : 4.2 - Class 4.2 - Spontaneously combustible material 49 CFR 173.124

Hazard labels (DOT) : 4.2 - Spontaneously combustible



DOT Symbols : G - Identifies PSN requiring a technical name

Packing group (DOT) : I - Great Danger

DOT Packaging Exceptions (49 CFR 173.xxx) : None

DOT Packaging Non Bulk (49 CFR 173.xxx) : 181

DOT Packaging Bulk (49 CFR 173.xxx) : 244

14.3. Additional information

Emergency Response Guide (ERG) Number : 135

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 : 13 - Keep as dry as reasonably practicable, 78 - Stow "separated longitudinally by an intervening complete compartment or hold from" explosives

Air transport

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

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

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SECTION 15: Regulatory information

15.1. US Federal regulations

TRIS(TRIMETHYLSILYL)PHOSPHINE (15573-38-3)

TSCA Exemption/Exclusion	CAUTION: This material is supplied for research and development purposes subject to the R&D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a "technically qualified individual" as defined by 40 CFR 720.3(ee). The use of this material for "commercial purposes" as defined by 40 CFR 720.3(r) is not permitted in the United States
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Tris(trimethylsilyl)phosphine (15573-38-3)

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

15.2. International regulations

No additional information available

15.3. US State regulations

TRIS(TRIMETHYLSILYL)PHOSPHINE(15573-38-3)

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

Tris(trimethylsilyl)phosphine (15573-38-3)

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	Non-significant risk level (NSRL)
No	No	No	No	

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::

H250	Catches fire spontaneously if exposed to air
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation

HMIS III Rating

Health : 4 Severe Hazard - Life-threatening, major or permanent damage may result from single or repeated overexposures
Flammability : 4 Severe Hazard
Physical : 2 Moderate Hazard

Prepared by safety and environmental affairs.

Date of issue: 08/12/2016 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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