

# Tris(trimethylsilylmethyl)phosphine

## Safety Data Sheet 5180111

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

Date of issue: 10/13/2017

Version: 1.0

### SECTION 1: Identification

#### 1.1. Identification

|                               |                                                    |
|-------------------------------|----------------------------------------------------|
| Product form                  | : Substance                                        |
| Substance name                | : Tris(trimethylsilylmethyl)phosphine              |
| CAS No                        | : 18077-42-4                                       |
| Product code                  | : 5180-1-11                                        |
| Formula                       | : C <sub>12</sub> H <sub>33</sub> PSi <sub>3</sub> |
| Synonyms                      | : Tris[(trimethylsilyl)methyl]phosphine            |
| Other means of identification | : Tris[(trimethylsilyl)methyl]phosphine            |

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

|                              |                                                                                            |
|------------------------------|--------------------------------------------------------------------------------------------|
| Use of the substance/mixture | : Laboratory chemicals<br>Manufacture of substances<br>Scientific research and development |
|------------------------------|--------------------------------------------------------------------------------------------|

#### 1.3. Details of the supplier of the safety data sheet

SynQuest Laboratories, Inc.  
P.O. Box 309  
Alachua, FL 32615 - United States of America  
T (386) 462-0788 - F (386) 462-7097  
[info@synquestlabs.com](mailto:info@synquestlabs.com) - [www.synquestlabs.com](http://www.synquestlabs.com)

#### 1.4. Emergency telephone number

|                  |                                               |
|------------------|-----------------------------------------------|
| Emergency number | : (844) 523-4086 (3E Company - Account 10069) |
|------------------|-----------------------------------------------|

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### Classification (GHS-US)

|                           |                                                       |
|---------------------------|-------------------------------------------------------|
| Pyr. Sol. 1               | H250 - Catches fire spontaneously if exposed to air   |
| Water-react. 2            | H261 - In contact with water releases flammable gases |
| Acute Tox. 4 (Oral)       | H302 - Harmful if swallowed                           |
| Acute Tox. 3 (Inhalation) | H331 - Toxic if inhaled                               |
| Skin Irrit. 2             | H315 - Causes skin irritation                         |
| Eye Irrit. 2A             | H319 - Causes serious eye irritation                  |
| STOT SE 3                 | H335 - May cause respiratory irritation               |

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)

: H250 - Catches fire spontaneously if exposed to air  
H261 - In contact with water releases flammable gases  
H302 - Harmful if swallowed  
H315 - Causes skin irritation  
H319 - Causes serious eye irritation  
H331 - Toxic if inhaled  
H335 - May cause respiratory irritation

Precautionary statements (GHS-US)

: P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking  
P222 - Do not allow contact with air  
P223 - Do not allow contact with water  
P231+P232 - Handle under inert gas. Protect from moisture  
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
P264 - Wash skin thoroughly after handling  
P270 - Do not eat, drink or smoke when using this product  
P271 - Use only outdoors or in a well-ventilated area

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P280 - Wear protective gloves/protective clothing/eye protection/face protection  
P301+P312 - If swallowed: Call a POISON CENTER or doctor/ physician if you feel unwell  
P302+P352 - If on skin: Wash with plenty of soap and water  
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  
P311 - Call a POISON CENTER or doctor/physician  
P312 - Call a POISON CENTER or doctor/physician if you feel unwell  
P321 - Specific treatment (see supplemental first aid instructions on this label)  
P330 - Rinse mouth  
P332+P313 - If skin irritation occurs: Get medical advice/attention  
P335+P334 - Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages  
P337+P313 - If eye irritation persists: Get medical advice/attention  
P362+P364 - Take off contaminated clothing and wash it before reuse  
P370+P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish  
P402+P404 - Store in a dry place. Store in a closed container  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed  
P405 - Store locked up  
P422 - Store contents under ...  
P501 - Dispose of contents/container to an approved waste disposal plant

### 2.3. Other hazards

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/information on ingredients

### 3.1. Substance

Substance type : Mono-constituent

| Name                                                      | Product identifier  | %      | Classification (GHS-US)                                                                                                                                                    |
|-----------------------------------------------------------|---------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tris(trimethylsilylmethyl)phosphine<br>(Main constituent) | (CAS No) 18077-42-4 | <= 100 | Pyr. Sol. 1, H250<br>Water-react. 2, H261<br>Acute Tox. 4 (Oral), H302<br>Acute Tox. 3 (Inhalation), H331<br>Skin Irrit. 2, H315<br>Eye Irrit. 2A, H319<br>STOT SE 3, H335 |

Full text of H-phrases: see section 16

### 3.2. Mixture

Not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

First-aid measures general : In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Move the affected personnel away from the contaminated area.

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration. Get immediate medical advice/attention.

First-aid measures after skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. 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 : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth out with water. Get immediate medical advice/attention.

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

Symptoms/injuries : The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

Symptoms/injuries after inhalation : Material is destructive to tissue of the mucuous membranes and upper respiratory tract. Cough, shortness of breath, headache, nausea.

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

Treat symptomatically.

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### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media : Alcohol resistant foam. Carbon dioxide. Dry powder. Water spray. Use extinguishing media appropriate for surrounding fire.

#### 5.2. Special hazards arising from the substance or mixture

Fire hazard : Thermal decomposition generates: Carbon oxides. Phosphorus oxides.  
Explosion hazard : When mixed with air and exposed to an ignition source, dust may burn in the open air or explode if confined.

#### 5.3. Advice for firefighters

Firefighting instructions : In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.  
Protection during firefighting : Wear gas tight chemically protective clothing in combination with self contained breathing apparatus. For further information refer to section 8: "Exposure controls/personal protection".

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate unnecessary personnel. Ensure adequate air ventilation. Do not breathe dust.

##### 6.1.1. For non-emergency personnel

Emergency procedures : Only qualified personnel equipped with suitable protective equipment may intervene.

##### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".  
Emergency procedures : Avoid raising dust. When mixed with air and exposed to an ignition source, dust may burn in the open air or explode if confined. Eliminate every possible source of ignition.

#### 6.2. Environmental precautions

Avoid release to the environment. Notify authorities if product enters sewers or public waters.

#### 6.3. Methods and material for containment and cleaning up

For containment : Stop leak if safe to do so.  
Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Minimize generation of dust.  
Other information : For disposal of solid materials or residues refer to section 13 : "Disposal considerations".

#### 6.4. Reference to other sections

No additional information available

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

Additional hazards when processed : When mixed with air and exposed to an ignition source, dust may burn in the open air or explode if confined.  
Precautions for safe handling : Do not handle until all safety precautions have been read and understood. Ensure good ventilation of the work station. Do not breathe dust, mist, spray. Wear personal protective equipment. Avoid contact with skin and eyes. Keep away from ignition sources (including static discharges). Proper grounding procedures to avoid static electricity should be followed. Use only non-sparking tools.  
Hygiene measures : Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

#### 7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.  
Storage conditions : Keep container closed when not in use. Keep away from ignition sources. Air sensitive. Moisture sensitive. Keep contents under inert gas.  
Incompatible materials : Refer to Section 10 on Incompatible Materials.  
Storage temperature : 2 - 8 °C Use explosion proof refrigerator  
Storage area : Store in dry, well-ventilated area.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

No additional information available

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### 8.2. Exposure controls

|                                  |                                                                                                                                                                         |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Appropriate engineering controls | : Ensure good ventilation of the work station. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. |
| Hand protection                  | : Protective gloves. 29 CFR 1910.138: Hand Protection.                                                                                                                  |
| Eye protection                   | : Chemical goggles or safety glasses. Face shield. 29 CFR 1910.133: Eye and Face Protection.                                                                            |
| Skin and body protection         | : Wear suitable protective clothing.                                                                                                                                    |
| Respiratory protection           | : In case of inadequate ventilation wear respiratory protection. 29 CFR 1910.134: Respiratory Protection.                                                               |
| Other information                | : Safety shoes. 29 CFR 1910.136: Foot Protection.                                                                                                                       |

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

|                                             |                     |
|---------------------------------------------|---------------------|
| Physical state                              | : Solid             |
| Color                                       | : No data available |
| Odor                                        | : No data available |
| Odor threshold                              | : No data available |
| pH                                          | : No data available |
| Melting point                               | : 66 - 70 °C        |
| Freezing point                              | : No data available |
| Boiling point                               | : 70 °C (@ 1 mm Hg) |
| Flash point                                 | : No data available |
| Relative evaporation rate (butyl acetate=1) | : No data available |
| Flammability (solid, gas)                   | : No data available |
| Explosion limits                            | : No data available |
| Explosive properties                        | : No data available |
| Oxidizing properties                        | : No data available |
| Vapor pressure                              | : No data available |
| Relative density                            | : No data available |
| Relative vapor density at 20 °C             | : No data available |
| Molecular mass                              | : 292.62 g/mol      |
| Solubility                                  | : No data available |
| Log Pow                                     | : No data available |
| Auto-ignition temperature                   | : No data available |
| Decomposition temperature                   | : No data available |
| Viscosity                                   | : No data available |
| Viscosity, kinematic                        | : No data available |
| Viscosity, dynamic                          | : 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

The product is stable at normal handling and storage conditions.

### 10.3. Possibility of hazardous reactions

No additional information available

### 10.4. Conditions to avoid

Keep away from heat, sparks and flame.

### 10.5. Incompatible materials

Strong oxidizing agents.

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### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced. Hazardous decomposition products in case of fire, see Section 5.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

|                                                    |                                                                                                                                         |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Acute toxicity                                     | : Oral: Harmful if swallowed. Inhalation: Toxic if inhaled.                                                                             |
| 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                                                                                                                        |
| Aspiration hazard                                  | : Not classified                                                                                                                        |
| Symptoms/injuries after inhalation                 | : Material is destructive to tissue of the mucuous membranes and upper respiratory tract. Cough, shortness of breath, headache, nausea. |

## 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

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

|                                |                                                                                               |
|--------------------------------|-----------------------------------------------------------------------------------------------|
| Waste treatment methods        | : Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber.   |
| Waste disposal recommendations | : Dispose of contents/container in accordance with licensed collector's sorting instructions. |
| Additional information         | : Recycle the material as far as possible.                                                    |

## SECTION 14: Transport information

### Department of Transportation (DOT)

In accordance with DOT

|                                  |                                                                       |
|----------------------------------|-----------------------------------------------------------------------|
| Transport document description   | : UN3128 Self-heating solid, toxic, organic, n.o.s., 4.2, II          |
| UN-No.(DOT)                      | : UN3128                                                              |
| Proper Shipping Name (DOT)       | : Self-heating solid, toxic, organic, n.o.s.                          |
| Transport hazard class(es) (DOT) | : 4.2 - Class 4.2 - Spontaneously combustible material 49 CFR 173.124 |

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### Hazard labels (DOT)

: 4.2 - Spontaneously combustible  
6.1 - Poison



### Packing group (DOT)

: II - Medium Danger

### DOT Packaging Non Bulk (49 CFR 173.xxx)

: 212

### DOT Packaging Bulk (49 CFR 173.xxx)

: 242

### DOT Symbols

: G - Identifies PSN requiring a technical name

### DOT Special Provisions (49 CFR 172.102)

: IB5 - Authorized IBCs: Metal (11A, 11B, 11N, 21A, 21B, 21N, 31A, 31B and 31N); Rigid plastics (11H1, 11H2, 21H1, 21H2, 31H1 and 31H2); Composite (11HZ1, 21HZ1 and 31HZ1).  
IP2 - When IBCs other than metal or rigid plastics IBCs are used, they must be offered for transportation in a closed freight container or a closed transport vehicle.  
T3 - 2.65 178.274(d)(2) Normal..... 178.275(d)(2)  
TP33 - The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and transported as a solid mass. Solid substances transported or offered for transport above their melting point are authorized for transportation in portable tanks conforming to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II, unless a tank with more stringent requirements for minimum shell thickness, maximum allowable working pressure, pressure-relief devices or bottom outlets are assigned in which case the more stringent tank instruction and special provisions shall apply. Filling limits must be in accordance with portable tank special provision TP3. Solids meeting the definition of an elevated temperature material must be transported in accordance with the applicable requirements of this subchapter.

### DOT Packaging Exceptions (49 CFR 173.xxx)

: None

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

: 15 kg

### DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)

: 50 kg

### DOT Vessel Stowage Location

: C - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel.

### Other information

: No supplementary information available.

### TDG

No additional information available

### Transport by sea

#### UN-No. (IMDG)

: 3128

#### Proper Shipping Name (IMDG)

: SELF-HEATING SOLID, TOXIC, ORGANIC, N.O.S.

#### Class (IMDG)

: 4.2 - Substances liable to spontaneous combustion

#### Packing group (IMDG)

: II - substances presenting medium danger

### Air transport

#### UN-No. (IATA)

: 3128

#### Proper Shipping Name (IATA)

: Self-heating solid, toxic, organic, n.o.s.

#### Class (IATA)

: 4.2 - Substances Liable to Spontaneous Combustion

#### Packing group (IATA)

: II - Medium Danger

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory except for:

|                                     |                   |      |
|-------------------------------------|-------------------|------|
| Tris(trimethylsilylmethyl)phosphine | CAS No 18077-42-4 | 100% |
|-------------------------------------|-------------------|------|

This product or mixture does not contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

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### 15.2. International regulations

#### CANADA

No additional information available

#### EU-Regulations

No additional information available

#### National regulations

No additional information available

### 15.3. US State regulations

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

## SECTION 16: Other information

Full text of H-phrases:

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| Acute Tox. 3 (Inhalation) | Acute toxicity (inhalation) Category 3                                              |
| Acute Tox. 4 (Oral)       | Acute toxicity (oral) Category 4                                                    |
| Eye Irrit. 2A             | Serious eye damage/eye irritation Category 2A                                       |
| Pyr. Sol. 1               | Pyrophoric solids Category 1                                                        |
| Skin Irrit. 2             | Skin corrosion/irritation Category 2                                                |
| STOT SE 3                 | Specific target organ toxicity (single exposure) Category 3                         |
| Water-react. 2            | Substances and mixtures which in contact with water emit flammable gases Category 2 |
| H250                      | Catches fire spontaneously if exposed to air                                        |
| H261                      | In contact with water releases flammable gases                                      |
| H302                      | Harmful if swallowed                                                                |
| H315                      | Causes skin irritation                                                              |
| H319                      | Causes serious eye irritation                                                       |
| H331                      | Toxic if inhaled                                                                    |
| H335                      | May cause respiratory irritation                                                    |

NFPA health hazard

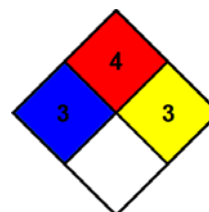
: 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard

: 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

NFPA reactivity

: 3 - Capable of detonation or explosive reaction, but requires a strong initiating source or must be heated under confinement before initiation, or reacts explosively with water.



HMIS III Rating

Health

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

Flammability

: 4 Severe Hazard - Flammable gases, or very volatile flammable liquids with flash points below 73 F, and boiling points below 100 F. Materials may ignite spontaneously with air. (Class IA)

Physical

: 3 Serious Hazard - Materials that may form explosive mixtures with water and are capable of detonation or explosive reaction in the presence of a strong initiating source. Materials may polymerize, decompose, self-react, or undergo other chemical change at normal temperature and pressure with moderate risk of explosion

SDS US (GHS HazCom 2012)

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is offered solely for your consideration, investigation, and verification. It does not represent any guarantee of the properties of the product nor that the hazard precautions or procedures described are the only ones which exist. SynQuest shall not be held liable for any damage resulting from handling or from contact with the above product.