## 1 Identification

**Product identifier**

**Product name:** Tris(2-tolyl)phosphine  
**Stock number:** L01858  
**CAS Number:** 6163-58-2  
**EC number:** 228-193-9

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

**Identified use:** SU24 Scientific research and development

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

**Manufacturer/Supplier:**  
Alfa Aesar  
Thermo Fisher Scientific Chemicals, Inc.  
30 Bond Street  
Ward Hill, MA 01835-8099  
Tel: 800-343-0660  
Fax: 800-322-4757  
Email: tech@alfa.com  
www.alfa.com

**Emergency telephone number:**  
During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

## 2 Hazard(s) identification

**Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)**

![GHS07]

- **Skin Irrit. 2** H315 Causes skin irritation.
- **Eye Irrit. 2A** H319 Causes serious eye irritation.
- **STOT SE 3** H335 May cause respiratory irritation.

**Hazard not otherwise classified** No information known.

### Label elements

**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

**Hazard pictograms**

![GHS07]

- **Signal word** Warning
- **Hazard statements**
  - H315 Causes skin irritation.
  - H319 Causes serious eye irritation.
  - H335 May cause respiratory irritation.

**Precautionary statements**

- **P261** Avoid breathing dust/fume/gas/mist/vapours/spray.
- **P280** Wear protective gloves/protective clothing/eye protection/face protection.
- **P305+P351+P338** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **P304+P340** IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- **P405** Store locked up.
- **P501** Dispose of contents/container in accordance with local/regional/national/international regulations.

### WHMIS classification

- **D2B** - Toxic material causing other toxic effects

### Classification system

- **HMIS ratings (scale 0-4)**  
  - **Health (acute effects)** = 1  
  - **Flammability** = 1  
  - **Physical Hazard** = 1

### Other hazards

**Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## 3 Composition/information on ingredients

**Chemical characterization:** Substances

- **CAS# Description:** 6163-58-2 Tris(2-tolyl)phosphine  
- **Identification number(s):**  
  - **EC number:** 228-193-9

## 4 First-aid measures

**Description of first aid measures**

**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm. Seek immediate medical advice.

**After skin contact**

Immediately wash with water and soap and rinse thoroughly.

(Contd. on page 2)
5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents: Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

- Carbon monoxide and carbon dioxide
- Phosphorus oxides

Advice for firefighters

Protective equipment:

- Wear self-contained respirator.
- Wear fully protective impervious suit.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation.

Environmental precautions:

Do not allow material to be released to the environment without proper governmental permits.

Methods and material for containment and cleaning up:

Ensure adequate ventilation.

Prevention of secondary hazards:

No special measures required.

Reference to other sections

- See Section 7 for information on safe handling
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.

7 Handling and storage

Handling

Precautions for safe handling:

- Keep container tightly sealed.
- Store in cool, dry place in tightly closed containers.
- Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

No information known.

Conditions for safe storage, including any incompatibilities

Storage

Requirements to be met by storerooms and receptacles:

- No special requirements.

Information about storage in one common storage facility:

- Store away from oxidizing agents.
- Store in the dark.

Further information about storage conditions:

- Keep container tightly sealed.
- Store in cool, dry conditions in well sealed containers.
- Protect from exposure to light.

Specific end use(s):

No further relevant information available.

8 Exposure controls/personal protection

Additional control and protective equipment:

- Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters

Components with limit values that require monitoring at the workplace:

- Not required.

Additional information:

- No data

Exposure controls

Personal protective equipment

General protective and hygienic measures:

- The usual precautionary measures for handling chemicals should be followed.
- Keep away from foodstuffs, beverages and feed.
- Remove all soiled and contaminated clothing immediately.
- Wash hands before breaks and at the end of work.
- Avoid contact with the eyes and skin.
- Maintain an ergonomically appropriate working environment.

Breathing equipment:

- Use suitable respirator when high concentrations are present.

Protection of hands:

- Impervious gloves
- Check protective gloves prior to each use for their proper condition.

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Eye protection:

- Safety glasses

Body protection:

- Protective work clothing

9 Physical and chemical properties

Information on basic physical and chemical properties

General information

Appearance:

- Form: Powder
- Color: White
- Odor: Not determined
- Odor threshold: Not determined
- pH-value: Not applicable.

Change in condition

- Melting point/Melting range: 123-125 °C (253-257 °F)
- Boiling point/Boiling range: Not determined
- Sublimation temperature/ start: Not determined
### 10 Stability and reactivity

**Reactivity:** No information known.

**Chemical stability:** Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:** Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions:** No dangerous reactions known.

**Conditions to avoid:** No further relevant information available.

**Incompatible materials:**
- Oxidizing agents
- Light

**Hazardous decomposition products:**
- Carbon monoxide and carbon dioxide
- Phosphorus oxides (e.g. P2O5)

### 11 Toxicological information

**Information on toxicological effects**

- **Acute toxicity:** No effects known.
- **LD/LC50 values that are relevant for classification:** No data
- **Skin irritation or corrosion:** Causes skin irritation.
- **Eye irritation or corrosion:** Causes serious eye irritation.
- **Sensitization:** No sensitizing effects known.
- **Germ cell mutagenicity:** No effects known.
- **Carcinogenicity:** No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.
- **Reproductive toxicity:** No effects known.
- **Specific target organ system toxicity - repeated exposure:** No effects known.
- **Specific target organ system toxicity - single exposure:** May cause respiratory irritation.
- **Aspiration hazard:** No effects known.
- **Subacute to chronic toxicity:** No effects known.
- **Subacute to chronic toxicity:**
  - Organic phosphorus compounds exhibit a wide range of toxicity. Most are skin and eye irritants with the more volatile also being respiratory irritants. Those exhibiting substantial water reactivity will have stronger irritating properties and may be corrosive enough to cause severe burns. Some organic phosphorus compounds are cholinesterase inhibitors. Symptoms associated with these include muscle twitching, convulsions, flaccid paralysis, coma, respiratory failure. They can be highly paralytic.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

### 12 Ecological information

**Toxicity**

- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability:** No further relevant information available.
- **Bioaccumulative potential:** No further relevant information available.
- **Mobility in soil:** No further relevant information available.

**Additional ecological information:**

- **General notes:**
  - Do not allow material to be released to the environment without proper governmental permits.
  - Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.
  - Avoid transfer into the environment.

**Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

**Other adverse effects:** No further relevant information available.

### 13 Disposal considerations

**Waste treatment methods**

**Recommendation:** Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

**Not a hazardous material for transportation.**

**UN-Number**

<table>
<thead>
<tr>
<th>DOT, IMDG, IATA</th>
<th>None</th>
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**UN proper shipping name**

<table>
<thead>
<tr>
<th>DOT, IMDG, IATA</th>
<th>None</th>
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</table>
Transport hazard class(es)
DOT, ADR, IMDG, IATA
Class None

Packing group
DOT, IMDG, IATA
None

Environmental hazards:
Not applicable.

Special precautions for user
Not applicable.

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
Not applicable.

Transport/Additional information:
Not dangerous according to the above specifications.

DOT
Marine Pollutant (DOT):
No

15 Regulatory information
Safety, health and environmental regulations/legislation specific for the substance or mixture
GHS label elements
The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

GHS07
Signal word Warning
Hazard statements
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
Precautionary statements
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P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
National regulations
All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
All components of this product are listed on the Canadian Non-Domestic Substances List (NDSL).
SARA Section 313 (specific toxic chemical listings) Substance is not listed.
California Proposition 65
Prop 65 - Chemicals known to cause cancer Substance is not listed.
Prop 65 - Developmental toxicity, female Substance is not listed.
Prop 65 - Developmental toxicity, male Substance is not listed.
Information about limitation of use: For use only by technically qualified individuals.
Other regulations, limitations and prohibitive regulations
Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.
The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.
Substance is not listed.
Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.
Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information
Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing SDS: Global Marketing Department
Date of preparation / last revision 11/23/2015 / -

Abbreviations and acronyms:
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
vPvB: very Persistent and very Bioaccumulative
ACGIH: American Conference of Governmental Industrial Hygienists (USA)
OSHA: Occupational Safety and Health Administration (USA)
NTP: National Toxicology Program (USA)
IARC: International Agency for Research on Cancer
EPA: Environmental Protection Agency (USA)