

## SAFETY DATA SHEET

Preparation Date: 05/02/2019

Revision date 05/02/2019

Revision Number: G1

### 1. IDENTIFICATION

#### Product identifier

**Product code:** T1221  
**Product Name:** TRIOCTYLPHOSPHINE OXIDE

#### Other means of identification

**Synonyms:** TOPO  
 Tri-n-octylphosphine oxide  
**CAS #:** 78-50-2  
**RTECS #** SZ1662500  
**CI#:** Not available

#### Recommended use of the chemical and restrictions on use

**Recommended use:** No information available.  
**Uses advised against** No information available

**Supplier:** Spectrum Chemical Mfg. Corp  
 14422 South San Pedro St.  
 Gardena, CA 90248  
 (310) 516-8000

**Order Online At:** <https://www.spectrumchemical.com>  
**Emergency telephone number** Chemtrec 1-800-424-9300  
**Contact Person:** Tom Tyner (USA - West Coast)  
**Contact Person:** Ibad Tirmiz (USA - East Coast)

### 2. HAZARDS IDENTIFICATION

#### Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

|  |            |
|--|------------|
| Skin corrosion/irritation                        | Category 2 |
| Serious eye damage/eye irritation                | Category 1 |
| Specific target organ toxicity (single exposure) | Category 3 |

#### Label elements

**Danger**

#### **Hazard statements**

Causes skin irritation  
 Causes serious eye damage  
 May cause respiratory irritation



**Hazards not otherwise classified (HNOC)**

Not Applicable

**Other hazards**

May be harmful in contact with skin

**Precautionary Statements - Prevention**

Wash face, hands and any exposed skin thoroughly after handling  
Wear protective gloves/protective clothing/eye protection/face protection  
Avoid breathing dust  
Use only outdoors or in a well-ventilated area

**Precautionary Statements - Response**

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.  
IF ON SKIN: Wash with plenty of water  
If skin irritation occurs: Get medical attention  
Take off contaminated clothing and wash it before reuse  
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.

**Precautionary Statements - Storage**

Store in a well-ventilated place. Keep container tightly closed  
Store locked up

**Precautionary Statements - Disposal**

Dispose of contents and container to an approved waste disposal plant in accordance with local, regional, national and international regulations as applicable

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

| Component               | CAS No  | Weight-% |
|-------------------------|---------|----------|
| Trioctylphosphine Oxide | 78-50-2 | 100      |

**4. FIRST AID MEASURES**

**First aid measures**

**General Advice:** National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

**Skin Contact:** Wash off immediately with soap and plenty of water removing all contaminated clothing and

shoes. Get medical attention if irritation develops.

**Eye Contact:** Flush eyes with water for 15 minutes. Immediate medical attention is required. Call a physician immediately.

**Inhalation:** Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Ingestion:** Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Obtain medical attention.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** Causes serious eye irritation  
Causes skin irritation  
Irritating to respiratory system  
Causes serious eye damage  
May cause digestive (gastrointestinal) tract irritation  
May affect the liver  
May affect the urinary system  
May cause musculoskeletal side effects

**Indication of any immediate medical attention and special treatment needed**

**Notes to Physician:** Treat symptomatically.

**Protection of first-aiders**

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

**5. FIRE-FIGHTING MEASURES**

**Extinguishing Media**

**Suitable Extinguishing Media:** Dry chemical. Carbon dioxide (CO<sub>2</sub>). Water spray mist or foam.

**Unsuitable Extinguishing Media:** No information available.

**Specific hazards arising from the chemical**

**Hazardous combustion products** Carbon monoxide. Carbon dioxide (CO<sub>2</sub>). Phosphorus oxides.

**Specific hazards** May be combustible at high temperatures.

**Special Protective Actions for Firefighters**

**Specific Methods:** No information available

**Special Protective Equipment for Firefighters:** As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

## 6. ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

**Personal Precautions:** Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid contact with skin, eyes and clothing. Remove all sources of ignition.

**Environmental precautions** Do not let product enter drains. Prevent further leakage or spillage if safe to do so. Prevent entry into waterways, sewers, basements or confined areas.

### Methods and material for containment and cleaning up

**Methods for containment** Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

**Methods for cleaning up** Use appropriate tools to put the spilled solid in a suitable waste disposal container. Clean contaminated surface thoroughly.

## 7. HANDLING AND STORAGE

### Precautions for safe handling

#### **Technical Measures/Precautions:**

Provide sufficient air exchange and/or exhaust in work rooms. All equipment used when handling the product must be grounded. Keep away from incompatible materials. Remove all sources of ignition.

#### **Safe Handling Advice**

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Do not ingest. Do not breathe dust. Keep away from heat and sources of ignition. Use only in well-ventilated areas. Handle in accordance with good industrial hygiene and safety practice.

### Conditions for safe storage, including any incompatibilities

#### **Technical Measures/Storage Conditions:**

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

#### **Incompatible Materials:**

Strong oxidizing agents

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control parameters

#### **National occupational exposure limits**

##### **United States**

| Component               | CAS No  | OSHA | NIOSH | ACGIH | AIHA WEEL |
|-------------------------|---------|------|-------|-------|-----------|
| Trioctylphosphine Oxide | 78-50-2 | None | None  | None  | None      |

##### **Canada**

| Component               | CAS No  | Canada - Alberta | Canada - British Columbia | Canada - Ontario | Canada - Quebec |
|-------------------------|---------|------------------|---------------------------|------------------|-----------------|
| Trioctylphosphine Oxide | 78-50-2 | None             | None                      | None             | None            |

##### **Australia and Mexico**

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| Component               | CAS No  | Australia | Mexico |
|-------------------------|---------|-----------|--------|
| Trioctylphosphine Oxide | 78-50-2 | None      | None   |

### Appropriate engineering controls

#### Engineering measures to reduce exposure:

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

### Individual protection measures, such as personal protective equipment

#### Personal Protective Equipment

|                                  |  |
|----------------------------------|--|
| <b>Eye protection:</b>           | Goggles or Safety glasses with side-shields.   |
| <b>Skin and body protection:</b> | Long sleeved clothing<br>Chemical resistant apron<br>Gloves  |
| <b>Respiratory protection:</b>   | Effective dust mask. Use a dust respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentration of dust (dust clouds) , inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent. |
| <b>Hygiene measures:</b>         | Avoid contact with skin, eyes and clothing. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product  |

## 9. PHYSICAL AND CHEMICAL PROPERTIES

|   |  |  |
|---|--|--|
| <b>Physical state:</b><br>Solid                               | <b>Appearance:</b><br>Crystalline powder.                  | <b>Color:</b><br>White.  |
| <b>Odor:</b><br>Sweetish.                                     | <b>Taste</b><br>No information available.                  | <b>Formula</b><br>C <sub>24</sub> H <sub>51</sub> OP                 |
| <b>Molecular/Formula weight (g/mole):</b><br>386.64           | <b>Flammability (solid, gas)</b><br>no data available      | <b>Flashpoint (°C/°F):</b><br>110°C/ 230°F                           |
| <b>Flash Point Tested according to:</b><br>Closed cup         | <b>Autoignition Temperature (°C/°F):</b><br>281°C/ 537.8°F | <b>Lower Explosion Limit (%):</b><br>No information available        |
| <b>Upper Explosion Limit (%):</b><br>No information available | <b>Melting point/range(°C/°F):</b><br>50-54°C/ 122-129°F   | <b>Decomposition temperature(°C/°F):</b><br>No information available |
| <b>Boiling point/range(°C/°F):</b><br>238°C/ 460°F            | <b>Bulk density:</b><br>No information available           | <b>Density (g/cm<sup>3</sup>):</b><br>No information available       |
| <b>Specific gravity:</b><br>No information available          | <b>pH</b><br>No information available                      | <b>Vapor pressure @ 20°C (kPa):</b><br>No information available      |
| <b>Evaporation rate:</b><br>No information available          | <b>Vapor density:</b><br>No information available          | <b>VOC content (g/L):</b><br>No information available                |

**Odor threshold (ppm):**  
No information available

**Partition coefficient  
(n-octanol/water):**  
No information available

**Viscosity:**  
No information available

**Miscibility:**  
No information available

**Solubility:**  
Soluble in Methanol  
Soluble in many organic solvents  
Insoluble in water

## 10. STABILITY AND REACTIVITY

**Reactivity**  
No information available

### Chemical stability

**Stability:** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions:** Hazardous polymerization does not occur

**Conditions to avoid:** Heat. Ignition sources. Incompatible materials.

**Incompatible Materials:** Strong oxidizing agents

**Hazardous decomposition products:** Carbon oxides. Oxides of phosphorus.

### Other Information

**Corrosivity:** No information available

**Special Remarks on Corrosivity:** No information available

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

**Principal Routes of Exposure:**  
Skin. Eyes. Inhalation. Ingestion.

### Acute Toxicity

### Component Information

|                         |         |
|-------------------------|---------|
| Trioctylphosphine Oxide |         |
| CAS No                  | 78-50-2 |

**LD50/oral/rat** = > 10000 mg/kg Oral LD50 Rat  
**LD50/oral/mouse** = No information available  
**LD50/dermal/rabbit** = 2830 mg/kg Dermal LD50 Rabbit  
**LD50/dermal/rat** = No information available  
**LC50/inhalation/rat** = No information available  
**LC50/inhalation/mouse** = No information available  
**Other LD50 or LC50 information** = No information available

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**LD50/oral/rat =**  
**Value - Acute Tox = 10000 mg/kg**

**LD50/oral/mouse =**  
**Value - Acute Tox Oral = No information available**

**LD50/dermal/rabbit**  
**Value - Acute Tox = 2830 mg/kg**

**LD50/dermal/rat**  
**VALUE - Acute Tox Dermal = No information available**

**LC50/inhalation/rat**  
**VALUE-Vapor = No information available**  
**VALUE-Gas = No information available**  
**VALUE-Dust/Mist = No information available**

**LC50/Inhalation/mouse**  
**VALUE-Vapor = No information available**  
**VALUE - Gas = No information available**  
**VALUE - Dust/Mist = No information available**

**Symptoms**

**Skin Contact:** Causes skin irritation. May be harmful in contact with skin.  
**Eye Contact:** Causes serious eye damage.  
**Inhalation** May cause respiratory irritation.  
**Ingestion** May cause digestive (gastrointestinal) tract irritation. May affect liver. It may affect the urinary system.  
**Aspiration hazard** No information available.

**Delayed and immediate effects as well as chronic effects from short and long-term exposure**

**Chronic Toxicity** No information available.

**Sensitization:** No information available.

**Mutagenic Effects:** No information available

**Carcinogenic effects:** Not considered carcinogenic.

| Component               | CAS No  | IARC       | ACGIH - Carcinogens | NTP        | OSHA HCS - Carcinogens | Australia - Notifiable Carcinogenic Substances | Australia - Prohibited Carcinogenic Substances |
|-------------------------|---------|------------|---------------------|------------|------------------------|--|--|
| Trioctylphosphine Oxide | 78-50-2 | Not listed | Not listed          | Not listed | Not listed             | Not listed                                     | Not listed                                     |

*ACGIH (American Conference of Governmental Industrial Hygienists)*

*IARC (International Agency for Research on Cancer)*

*NTP (National Toxicology Program)*

*OSHA (Occupational Safety and Health Administration of the US Department of Labor)*

**Reproductive toxicity** No data is available

**Reproductive Effects:** No information available  
**Developmental Effects:** No information available  
**Teratogenic Effects:** No information available

**Specific Target Organ Toxicity**

**STOT - single exposure** respiratory system.  
**STOT - repeated exposure** No information available.  
**Target Organs:** No information available.

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Ecotoxicity effects:** No data available.

**Persistence and degradability:** No information available

**Bioaccumulative potential:** No information available.

**Mobility in soil** No information available  
**Other adverse effects** No information available.

**13. DISPOSAL CONSIDERATIONS**

**Disposal Methods**

**Waste from residues / unused products:**  
Waste must be disposed of in accordance with Federal, State and Local regulation.

**Contaminated packaging:**  
Empty containers should be taken for local recycling, recovery or waste disposal

| Component               | CAS No  | RCRA - F Series Wastes | RCRA - K Series Wastes | RCRA - P Series Wastes | RCRA - U Series Wastes |
|-------------------------|---------|------------------------|------------------------|------------------------|------------------------|
| Trioctylphosphine Oxide | 78-50-2 | None                   | None                   | None                   | None                   |

**14. TRANSPORT INFORMATION**

**DOT**

**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class** No information available  
**Subsidiary Class** No information available  
**Packing group:** No information available  
**Emergency Response Guide Number** No information available  
**Marine Pollutant** No data available  
**DOT RQ (lbs):** No information available  
**Special Provisions** No Information available  
**Symbol(s):** No information available  
**Description:** No information available



**TDG (Canada)**  
**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Marine Pollutant** No Information available  
**Description:** No information available

**ADR**  
**UN Number** Not regulated  
**Proper Shipping Name:** No information available  
**Transport hazard class(es)** No information available  
**Packing group** No information available  
**Subsidiary Risk:** No information available

**IMDG**  
**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class:** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available  
**Marine Pollutant** No information available

**RID**  
**UN Number** Not Regulated  
**Proper Shipping Name:** No information available  
**Transport hazard class(es)** No information available  
**Subsidiary Risk:** No information available  
**Packing group** No information available

**ICAO (air)**  
**UN-No:** Not Regulated  
**Proper Shipping Name:** No information available  
**Hazard Class** No information available  
**Subsidiary Risk:** No information available  
**Packing Group:** No information available

**IATA**  
**UN Number** Not Regulated  
**Proper Shipping Name:** No information available  
**Transport hazard class(es)** No information available  
**Subsidiary Risk:** No information available  
**Packing group** No information available  
**Precautionary Statements - Response** No information available  
**Special Provisions** No information available

**15. REGULATORY INFORMATION**

**International Inventories**

| Component                      | CAS No  | U.S. TSCA     | KOREA KECL       | Philippines (PICCS) | Japan ENCS                | China IECSC | Australia (AICS) | EINECS-No.        |
|--------------------------------|---------|---------------|------------------|---------------------|---------------------------|-------------|------------------|-------------------|
| <i>Trioctylphosphine Oxide</i> | 78-50-2 | PresentACTIVE | Present KE-34720 | Present             | Present (3)-2937,(2)-2937 | Present     | Present          | Present 201-121-3 |

## U.S. Regulations

### California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

#### Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

#### Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

| Component               | CAS No  | Carcinogen | Developmental Toxicity | Male Reproductive Toxicity | Female Reproductive Toxicity: |
|-------------------------|---------|------------|------------------------|----------------------------|-------------------------------|
| Trioctylphosphine Oxide | 78-50-2 | Not Listed | Not Listed             | Not Listed                 | Not Listed                    |

### CERCLA/SARA

| Component               | CAS No  | CERCLA - Hazardous Substances and their Reportable Quantities | Section 302 Extremely Hazardous Substances and TPQs | Section 302 Extremely Hazardous Substances and RQs | Section 313 - Chemical Category | Section 313 - Reporting de minimis |
|-------------------------|---------|---|---|--|---------------------------------|------------------------------------|
| Trioctylphosphine Oxide | 78-50-2 | None  | None  | None   | None                            | None                               |

### U.S. TSCA

| Component               | CAS No  | TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS) | TSCA 8(d) -Health and Safety Reporting |
|-------------------------|---------|---|--|
| Trioctylphosphine Oxide | 78-50-2 | Not Applicable  | Not Applicable                         |

### Canada

#### WHMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information:

The WHMIS 2015 classification of this product has not been validated or reviewed yet.

**Canada Hazardous Products Regulation** This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

### DSL/NDSL

| Component               | CAS No  | Canada (DSL) | Canada (NDSL) |
|-------------------------|---------|--------------|---------------|
| Trioctylphosphine Oxide | 78-50-2 | Present      | Not Listed    |

| Component               | CAS No  | CEPA Schedule I - Toxic Substances                          |
|-------------------------|---------|---|
| Trioctylphosphine Oxide | 78-50-2 | Not listed  |
| Component               | CAS No  | CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting |
| Trioctylphosphine Oxide | 78-50-2 | Not listed  |

### EU Classification

Product code: T1221

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|                         |         |                               |
|-------------------------|---------|-------------------------------|
| Component               | CAS No  | EU GHS - SV - CLP (1272/2008) |
| Trioctylphosphine Oxide | 78-50-2 |                               |

## EU - CLP (1272/2008)

**R-phrase(s)**

R41 - Risk of serious damage to eyes

R38 - Irritating to skin

**S -phrase(s)**

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

S36 - Wear suitable protective clothing

S39 - Wear eye/face protection

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)

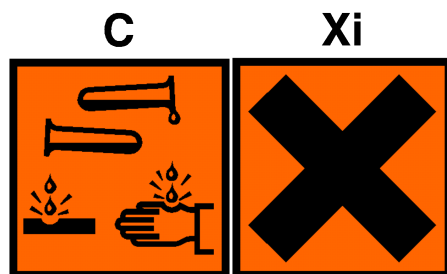
| Component               | CAS No  | Classification | Concentration Limits: | Safety Phrases |
|-------------------------|---------|----------------|-----------------------|----------------|
| Trioctylphosphine Oxide | 78-50-2 |                | No information        |                |

The product is classified in accordance with Annex VI to Directive 67/548/EEC

**Indication of danger:**

C - Corrosive

Xi - Irritant

**16. OTHER INFORMATION**

Preparation Date: 05/02/2019  
Revision date: 05/02/2019  
Prepared by: Sonia Owen

**Disclaimer:**

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the

completeness or accuracy of the information contained herein.

**End of Safety Data Sheet**