



## TRIOCTYLPHOSPHINE, 95%

Safety Data Sheet OMPH080

Date of issue: 02/07/2017

Version: 1.0

### SECTION 1: Identification

#### 1.1. Product identifier

|                 |                                                       |
|-----------------|-------------------------------------------------------|
| Product name    | : TRIOCTYLPHOSPHINE, 95%                              |
| Product code    | : OMPH080                                             |
| Product form    | : Substance                                           |
| Physical state  | : Liquid                                              |
| Formula         | : C <sub>24</sub> H <sub>51</sub> P                   |
| Synonyms        | : TOP<br>PHOSPHINE, TRIOCTYL-<br>TRI-n-OCTYLPHOSPHINE |
| Chemical family | : ORGANOPHOSPHORUS COMPOUND                           |

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

|                 |                                                                 |
|-----------------|-----------------------------------------------------------------|
| Recommended use | : Chemical intermediate<br>For research and industrial 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](mailto:info@gelest.com) - [www.gelest.com](http://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

|                                              |      |
|----------------------------------------------|------|
| Skin corrosion/irritation Category 1B        | H314 |
| Serious eye damage/eye irritation Category 1 | H318 |
| Full text of H statements : see section 16   |      |

#### 2.2. Label elements

##### GHS-US labeling

Hazard pictograms (GHS-US)



GHS05

|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Signal word (GHS-US)              | : Danger                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Hazard statements (GHS-US)        | : H314 - Causes severe skin burns and eye damage<br>H318 - Causes serious eye damage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Precautionary statements (GHS-US) | : P280 - Wear protective gloves/protective clothing/eye protection/face protection<br>P260 - Do not breathe vapors<br>P264 - Wash hands thoroughly after handling<br>P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting<br>P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. rinse skin with water/shower<br>P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing<br>P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing<br>P310 - Immediately call a doctor<br>P321 - Specific treatment (see first aid instructions on this label)<br>P363 - Wash contaminated clothing before reuse<br>P405 - Store locked up<br>P501 - Dispose of contents/container to licensed waste disposal facility |

#### 2.3. Hazards not otherwise classified (HNOC)

No additional information available

# TRIOCTYLPHOSPHINE, 95%

## Safety Data Sheet

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

No data available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Substance type : Mono-constituent  
Name : TRIOCTYLPHOSPHINE, 95%  
CAS No : 4731-53-7

| Name                 | Product identifier | %        | GHS-US classification                   |
|----------------------|--------------------|----------|-----------------------------------------|
| Tri-n-octylphosphine | (CAS No) 4731-53-7 | 95 - 100 | Skin Corr. 1B, H314<br>Eye Dam. 1, H318 |

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

### 3.2. Mixtures

Not applicable

### 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 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. Get medical advice/attention.

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

Symptoms/injuries after inhalation : May cause irritation to the respiratory tract.

Symptoms/injuries after skin contact : Causes (severe) skin burns. May be harmful in contact with skin.

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

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 : Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

### 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

#### 6.1.1. For non-emergency personnel

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

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 product 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.

# TRIOCTYLPHOSPHINE, 95%

## Safety Data Sheet

### 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

|                               |                                                                                                                                                                  |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Precautions for safe handling | : Avoid all eye and skin contact and do not breathe vapor and mist. Provide good ventilation in process area to prevent accumulation of vapors.                  |
| 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.         |
| Incompatible materials | : Air. Oxidizing agent.                                   |
| 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. 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                                  | : Viscous liquid. Fumes form on contact with air. |
| Molecular mass                              | : 370.6 g/mol                                     |
| Color                                       | : Light yellow.                                   |
| Odor                                        | : No data available                               |
| Odor threshold                              | : No data available                               |
| Refractive index                            | : 1.468                                           |
| pH                                          | : No data available                               |
| Relative evaporation rate (butyl acetate=1) | : No data available                               |
| Melting point                               | : < 0 °C                                          |
| Freezing point                              | : No data available                               |
| Boiling point                               | : 175 °C @ 0.3 mm Hg                              |
| Flash point                                 | : 147 °C                                          |
| Auto-ignition temperature                   | : 168 °C                                          |
| Decomposition temperature                   | : No data available                               |
| Flammability (solid, gas)                   | : No data available                               |
| Vapor pressure                              | : < 0.1 mm Hg @ 20°C                              |
| Relative vapor density at 20 °C             | : > 1                                             |
| Relative density                            | : 0.831                                           |
| VOC content                                 | : < 3 %                                           |
| Solubility                                  | : Insoluble in water. 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                               |

# TRIOCTYLPHOSPHINE, 95%

## Safety Data Sheet

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 under 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

Air. Oxidizing agent.

### 10.6. Hazardous decomposition products

Carbon dioxide. Phosphorus oxides.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Not classified

| Tri-n-octylphosphine (4731-53-7) |                            |
|----------------------------------|----------------------------|
| LD50 oral rat                    | 5600 mg/kg                 |
| LD50 dermal rabbit               | 5800 - 6600 mg/kg          |
| ATE US (oral)                    | 5600.000 mg/kg body weight |
| ATE US (dermal)                  | 5800.000 mg/kg body weight |

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

None of the components in this product at concentrations >0.1% are listed by IARC, NTP, OSHA or ACGIH as a carcinogen

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Not classified

Aspiration hazard : Not classified

Symptoms/injuries after inhalation : May cause irritation to the respiratory tract.

Symptoms/injuries after skin contact : Causes (severe) skin burns. May be harmful in contact with skin.

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

Symptoms/injuries after ingestion : May be harmful if swallowed.

Reason for classification : Expert judgment

## 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

# TRIOCTYLPHOSPHINE, 95%

## Safety Data Sheet

### 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.                 |
| GWPmix comment               | : 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) | : 1760 |
| DOT NA no.  | UN1760 |

### 14.2. UN proper shipping name

|                                |                                                               |
|--------------------------------|---------------------------------------------------------------|
| Transport document description | : UN1760 Corrosive liquids, n.o.s. (TRIOCTYLPHOSPHINE), 8, II |
| Proper Shipping Name (DOT)     | : Corrosive liquids, n.o.s.<br>(TRIOCTYLPHOSPHINE)            |
| Class (DOT)                    | : 8 - Class 8 - Corrosive material 49 CFR 173.136             |
| Packing group (DOT)            | : II - Medium Danger                                          |
| Hazard labels (DOT)            | : 8 - Corrosive                                               |



|                                           |                                                 |
|-------------------------------------------|-------------------------------------------------|
| DOT Packaging Non Bulk (49 CFR 173.xxx)   | : 202                                           |
| DOT Packaging Bulk (49 CFR 173.xxx)       | : 242                                           |
| DOT Packaging Exceptions (49 CFR 173.xxx) | : 154                                           |
| DOT Symbols                               | : G - Identifies PSN requiring a technical name |

### 14.3. Additional information

|                                       |                                           |
|---------------------------------------|-------------------------------------------|
| Emergency Response Guide (ERG) Number | : 154                                     |
| Other information                     | : No supplementary information available. |

### Transport by sea

|                             |                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DOT Vessel Stowage Location | : B - (i) The material may be stowed "on deck" or "under deck" 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; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded |
| DOT Vessel Stowage Other    | : 40 - Stow "clear of living quarters"                                                                                                                                                                                                                                                                                                                                                               |

### Air transport

|                                                                  |        |
|------------------------------------------------------------------|--------|
| DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) | : 1 L  |
| DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)     | : 30 L |

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### Tri-n-octylphosphine (4731-53-7)

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

# TRIOCTYLPHOSPHINE, 95%

## Safety Data Sheet

### 15.2. International regulations

#### CANADA

##### Tri-n-octylphosphine (4731-53-7)

Listed on the Canadian DSL (Domestic Substances List)

#### EU-Regulations

##### Tri-n-octylphosphine (4731-53-7)

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

#### National regulations

##### Tri-n-octylphosphine (4731-53-7)

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

Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory

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

### 15.3. US State regulations

No additional information available

## SECTION 16: Other information

Full text of H-phrases::

|      |                                         |
|------|-----------------------------------------|
| H314 | Causes severe skin burns and eye damage |
| H318 | Causes serious eye damage               |

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.

#### HMIS III Rating

|              |                                                                                                                                                                                                                                                |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Health       | : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given                                                                                                                                          |
| Flammability | : 2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II & IIIA)               |
| Physical     | : 1 Slight Hazard - Materials that are normally stable but can become unstable (self-react) at high temperatures and pressures. Materials may react non-violently with water or undergo hazardous polymerization in the absence of inhibitors. |

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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