### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

<table>
<thead>
<tr>
<th>Physical state</th>
<th>Substance name</th>
<th>Product code</th>
<th>Formula</th>
<th>Synonyms</th>
<th>Chemical family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid</td>
<td>TETRADECYL(TRIHEXYL)PHOSPHONIUM CHLORIDE</td>
<td>OMPH066</td>
<td>C32H68ClP</td>
<td>TRIHEXYLTETRADECYLPHOSPHONIUM CHLORIDE; PHOSPHONIUM, TRIHEXYLTETRADECYL-, CHLORIDE</td>
<td>PHOSPHORUS COMPOUND</td>
</tr>
</tbody>
</table>

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

- Use of the substance/mixture: Chemical intermediate
- For research use only

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

**GELEST, INC.**
11 East Steel Road
Morrisville, PA 19067
USA

T 215-547-1015  F 215-547-2484  (M-F): 8:00 AM - 5:30 PM EST
info@gelest.com  www.gelest.com

**1.4. Emergency telephone number**

- Emergency number: CHEMTREC: 1-800-424-9300 (USA); +1 703-527-3887 (International)

### SECTION 2: Hazards identification

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

**Classification (GHS-US)**

- Acute Tox. 4 (Oral) H302
- Skin Corr. 1B H314
- Eye Dam. 1 H318

Full text of H-phrases: see section 16

#### 2.2. Label elements

**GHS-US labeling**

- Hazard pictograms (GHS-US): ![GHS05](image1) ![GHS07](image2)

- Signal word (GHS-US): Danger
- Hazard statements (GHS-US): H302 - Harmful if swallowed
- Causes severe skin burns and eye damage

- Precautionary statements (GHS-US): P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P260 - Do not breathe dust
- P264 - Wash hands thoroughly after handling
- P270 - Do not eat, drink or smoke when using this product
- P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
- P301+P312 - If swallowed: Call a doctor if you feel unwell
- P303+P361+P353 - If on skin (or hair): take off immediately all contaminated clothing. Rinse skin with water/shower
- 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
- P310 - Immediately call a POISON CENTER
- P321 - Specific treatment (see first aid instructions on this label)
- P363 - Wash contaminated clothing before reuse
- P405 - Store locked up
- P501 - Dispose of contents/container to licensed waste disposal facility.
TETRADECYL(TRIHEXYL)PHOSPHONIUM CHLORIDE
Safety Data Sheet

2.3. Other hazards
No additional information available

2.4. Unknown acute toxicity (GHS US)
No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

<table>
<thead>
<tr>
<th>Substance type</th>
<th>Mono-constituent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>TETRADECYL(TRIHEXYL)PHOSPHONIUM CHLORIDE</td>
</tr>
<tr>
<td>CAS No</td>
<td>258864-54-9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification (GHS-US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tetradecyl(trihexyl)phosphonium chloride (CAS No) 258864-54-9</td>
<td>&gt; 95</td>
<td>Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Eye Dam. 1, H318</td>
<td></td>
</tr>
</tbody>
</table>

3.2. Mixture
Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

<table>
<thead>
<tr>
<th>First-aid measures general</th>
<th>Remove contaminated clothing and shoes. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Call a POISON CENTER or doctor/physician.</th>
</tr>
</thead>
<tbody>
<tr>
<td>First-aid measures after inhalation</td>
<td>Remove victim to fresh air and keep at rest in a position comfortable for breathing. If you feel unwell, seek medical advice.</td>
</tr>
<tr>
<td>First-aid measures after skin contact</td>
<td>Wash with plenty of soap and water. Get immediate medical advice/attention.</td>
</tr>
<tr>
<td>First-aid measures after eye contact</td>
<td>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.</td>
</tr>
<tr>
<td>First-aid measures after ingestion</td>
<td>Never give anything by mouth to an unconscious person. Get immediate medical advice/attention.</td>
</tr>
</tbody>
</table>

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

| Symptoms/injuries after skin contact | Causes severe skin burns and eye damage. |
| Symptoms/injuries after eye contact | Causes (severe) skin burns. Causes alkali burns. |
| Symptoms/injuries after ingestion | Causes serious eye damage. |

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 | Not combustible. |
| Unsuitable extinguishing media | None known. |

5.2. Special hazards arising from the substance or mixture

| Fire hazard | None known. |

5.3. Advice for firefighters

| Firefighting instructions | Exercise caution when fighting any chemical fire. |
| Protection during firefighting | Do not enter fire area without proper protective equipment, including respiratory protection. Avoid contact with skin and eyes. Do not breathe dust. |

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: Sweep or shovel spills into appropriate container for disposal.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling: Avoid contact with skin and eyes. Do not breathe dust. Provide local exhaust or general room ventilation to minimize exposure to dust.

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

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Keep container tightly closed. Store locked up.

Incompatible materials: None known.

Storage area: Store in a well-ventilated place. Store away from heat.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

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: Rubbers. Neoprene or nitrile rubber gloves.

Eye protection: Chemical goggles. 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 dust and mist (orange cartridge) respirator.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state: Solid

Appearance: Resinous or crystalline solid.

Molecular mass: 519.31 g/mol

Color: Pale yellow-gray.

Odor: No data available

Odor threshold: No data available

Refractive index: 1.4818

pH: No data available

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

Melting point: -40 °C

Freezing point: No data available

Boiling point: > 200 °C

Flash point: 118 °C

Auto-ignition temperature: 375 °C

Decomposition temperature: No data available

Flammability (solid, gas): No data available

Vapor pressure: No data available

Relative vapor density at 20 °C: No data available

Relative density: 0.895

Solubility: Slightly. Soluble in water.
**TETRADECYL(TRIHEXYL)PHOSPHONIUM CHLORIDE**

Safety Data Sheet

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**SECTION 10: Stability and reactivity**

10.1. **Reactivity**
No additional information available

10.2. **Chemical stability**
Stable.

10.3. **Possibility of hazardous reactions**
No additional information available

10.4. **Conditions to avoid**
None known.

10.5. **Incompatible materials**
None known.

10.6. **Hazardous decomposition products**

---

**SECTION 11: Toxicological information**

11.1. **Information on toxicological effects**

<table>
<thead>
<tr>
<th>Effect</th>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
<td>Oral: Harmful if swallowed.</td>
</tr>
<tr>
<td>Tetradecyl(trihexyl)phosphonium chloride</td>
<td></td>
</tr>
<tr>
<td>LD50 oral rat</td>
<td>~ 500 - 2000 mg/kg body weight</td>
</tr>
<tr>
<td>ATE US (oral)</td>
<td>526.316 mg/kg body weight</td>
</tr>
</tbody>
</table>

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. Negative Ames test for mutagenicity reported.

Carcinogenicity: Not classified.

Reproductive toxicity: Not classified.

Specific target organ toxicity (single exposure): Not classified.

Specific target organ toxicity (repeated exposure): Not classified.

Aspiration hazard: Not classified.

Potential Adverse human health effects and symptoms:
- Signs of toxicity include staggered gait, loss of righting reflex and decrease in spontaneous activity and reactivity.
- Causes (severe) skin burns. Causes alkali burns.
- Causes serious eye damage.
- Harmful if swallowed. Swallowing a small quantity of this material will result in serious health hazard.


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**SECTION 12: Ecological information**

12.1. **Toxicity**
No additional information available.

---

Log Pow: No data available

Log Kow: No data available

Viscosity, kinematic: 2250 cSt

Viscosity, dynamic: No data available

Explosive properties: No data available

Oxidizing properties: No data available

Explosion limits: No data available

9.2. **Other information**
No additional information available
### Persistence and degradability
There is no additional information available.

### Bioaccumulative potential
There is no additional information available.

### Mobility in soil
There is no additional information available.

### 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 ecological damage caused by this product.

### Disposal considerations

#### Waste treatment methods

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

**Waste disposal recommendations:** Landfill. 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.

### Transport information

#### UN number

UN-No.(DOT) 1759
DOT NA no. UN1759

#### UN proper shipping name

**Proper Shipping Name (DOT):** Corrosive solids, n.o.s. (TETRADECYL(TRIHEXYL)PHOSPHONIUM CHLORIDE)

**Department of Transportation (DOT) Hazard Classes:** 8 - Class 8 - Corrosive material 49 CFR 173.136

**Hazard labels (DOT):** 8 - Corrosive

**DOT Symbols:** G - Identifies PSN requiring a technical name

**Packing group (DOT):** III - Minor Danger

**DOT Packaging Exceptions (49 CFR 173.xxx):** 154

**DOT Packaging Non Bulk (49 CFR 173.xxx):** 213

**DOT Packaging Bulk (49 CFR 173.xxx):** 240

### Additional information

Other information: No supplementary information available.

**Transport by sea**

**DOT Vessel Stowage Location:** A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

**Air transport**

**DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27):** 25 kg

**DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75):** 100 kg

### Regulatory information

#### US Federal regulations

**TSCA Exemption/Exclusion**

**CAUTION:** This material is supplied for research and development purposes subject to the R&D exemption under TSCA. 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a "technically qualified individual" as defined by 40 CFR 720.3(ee). The use of this material for "commercial purposes" as defined by 40 CFR 720.3(r) is not permitted in the United States.
Tetradecyl(trihexyl)phosphonium chloride (258864-54-9)

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

15.2. International regulations

No additional information available

15.3. US State regulations

<table>
<thead>
<tr>
<th>TETRADECYL(TRIHEXYL)PHOSPHONIUM CHLORIDE (258864-54-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. - California - Proposition 65 - Carcinogens List</td>
</tr>
<tr>
<td>U.S. - California - Proposition 65 - Developmental Toxicity</td>
</tr>
<tr>
<td>U.S. - California - Proposition 65 - Reproductive Toxicity - Female</td>
</tr>
<tr>
<td>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</td>
</tr>
</tbody>
</table>

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<tr>
<th>Tetradeyl(trihexyl)phosphonium chloride (258864-54-9)</th>
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<tr>
<td>U.S. - California - Proposition 65 - Reproductive Toxicity - Male</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No significance risk level (NSRL)</th>
</tr>
</thead>
</table>

SECTION 16: Other information

Abbreviations and acronyms:

- Abbreviations: ND: Not Determined; No Data; NA: Not Applicable; LD: Lethal Dose; LC: Lethal Concentration; ATE: Acute Toxicity Estimates; H: hour; °: °C unless otherwise stated; mm: millimeters Hg, torr; PEL: permissible exposure level; TWA: time weighted average; TLV: threshold limit value; TG: Test Guideline; NIOSH: National Institute for Occupational Safety and Health; IARC: International Agency for Research on Cancer; NTP: National Toxicology Program; HMIS: Hazardous Material Information System; CAS No.: Chemical Abstract Service Registration Number; EC No.: European Commission Registration Number; EC Index No.: European Commission Index Number; OECD: The Organisation for Economic Co-operation and Development.

<table>
<thead>
<tr>
<th>Acute Tox. 4 (Oral)</th>
<th>Acute toxicity (oral) Category 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye Dam: 1</td>
<td>Serious eye damage/eye irritation Category 1</td>
</tr>
<tr>
<td>Skin Corr. 1B</td>
<td>Skin corrosion/irritation Category 1B</td>
</tr>
<tr>
<td>H302</td>
<td>Harmful if swallowed</td>
</tr>
<tr>
<td>H314</td>
<td>Causes severe skin burns and eye damage</td>
</tr>
<tr>
<td>H318</td>
<td>Causes serious eye damage</td>
</tr>
</tbody>
</table>

HMIS III Rating

| Health               | 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given |
| Flammability         | 1 Slight Hazard |
| Physical             | 0 Minimal Hazard |

Prepared by safety and environmental affairs.

Date of issue: 08/20/2015

Version: 1.0

SDS US (GHS HazCom 2012) - Custom

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

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