# DIPHENYLPHOSPHINE

**Safety Data Sheet**

**OMPH029**  
**Date of issue:** 12/06/2016  
**Version:** 1.0

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## SECTION 1: Identification

### 1.1. Product identifier

- **Product name:** DIPHENYLPHOSPHINE  
- **Product code:** OMPH029  
- **Product form:** Substance  
- **Physical state:** Liquid  
- **Formula:** C\(_{12}\)H\(_{11}\)P  
- **Synonyms:** PHOSPHINE, DIPHENYL-  
- **Chemical family:** ORGANOPHOSPHORUS COMPOUND

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

- **Recommended use:** Chemical intermediate  
  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 - 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:**  
  - Pyrophoric liquids Category 1: H250  
  - Skin corrosion/irritation Category 2: H315  
  - Serious eye damage/eye irritation Category 2A: H319  
  - Specific target organ toxicity (single exposure) Category 3: H335  

Full text of H statements: see section 16

### 2.2. Label elements

- **GHS-US labeling:**  
  - **Hazard pictograms (GHS-US):**
    - GHS02
    - GHS07

- **Signal word (GHS-US):** Danger
- **Hazard statements (GHS-US):**  
  - H250 - Catches fire spontaneously if exposed to air  
  - H315 - Causes skin irritation  
  - H319 - Causes serious eye irritation  
  - H335 - May cause respiratory irritation
- **Precautionary statements (GHS-US):**  
  - P210 - Keep away from heat, open flames, sparks. - No smoking  
  - P222 - Do not allow contact with air  
  - P261 - Avoid breathing vapors  
  - P264 - Wash hands thoroughly after handling  
  - P271 - Use only outdoors or in a well-ventilated area  
  - P280 - Wear protective gloves/protective clothing/eye protection/face protection  
  - P302+P334 - If on skin: Immerse in cool water/wrap with wet bandages  
  - P302+P352 - If on skin: Wash with plenty of water/…  
  - P304+P315+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
  - P312 - Call a doctor if you feel unwell  
  - P321 - Specific treatment (see first aid instructions on this label)  
  - P332+P313 - If skin irritation occurs: Get medical advice/attention  
  - P337+P313 - If eye irritation persists: Get medical advice/attention  
  - P362+P364 - Take off contaminated clothing and wash it before reuse
2.3. Hazards not otherwise classified (HNOC)

No additional information available

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/Information on ingredients

3.1. Substances

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>GHS-US classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diphenylphosphine</td>
<td>(CAS No) 829-85-6</td>
<td>95 - 100</td>
<td>Pyr. Liq. 1, H250</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin Irrit. 2, H315</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eye Irrit. 2A, H319</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>STOT SE 3, H335</td>
</tr>
</tbody>
</table>

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 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 medical advice/attention.

First-aid measures after ingestion: Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

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

Symptoms/injuries after inhalation: May cause respiratory irritation.

Symptoms/injuries after skin contact: Causes skin irritation.

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

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: Dry chemical powder followed by sand or dolomite.

Unsuitable extinguishing media: Do not use straight streams.

5.2. Special hazards arising from the substance or mixture

Fire hazard: Catches fire spontaneously if exposed to air. Pyrophoric liquid. Irritating fumes and organic acid vapors may develop when material is exposed to elevated temperatures or open flame.

Explosion hazard: In contact with combustible materials such as paper and textiles, ignites spontaneously in air. Bulk liquid does not ignite spontaneously.

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 all eye and skin contact and do not breathe vapor and mist.

Other information: PYROPHORIC- MAY IGNITE SPONTANEOUSLY ON CONTACT WTH AIR.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures: Eliminate every possible source of ignition.
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 liquid 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.

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

Additional hazards when processed: Keep away from heat/sparks/open flames/hot surfaces. - No smoking. PYROPHORIC- MAY IGNITE SPONTANEOUSLY ON CONTACT WITH AIR. Product will ignite spontaneously if heated.
Precautions for safe handling: Avoid all eye and skin contact and do not breathe vapor and mist. Do not allow contact with air. Use only outdoors or in a well-ventilated area.
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. Store in sealed containers under inert atmosphere.
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. Full face shield with chemical workers goggles.
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: Clear liquid. Fumes slowly in air.
Molecular mass: 186.2 g/mol
Color: No data available
Odor threshold: No data available
Refractive index: 1.625
pH: No data available
Relative evaporation rate (butyl acetate=1): No data available
Melting point: < 0 °C
Freezing point : No data available
Boiling point : 280 °C
Flash point : 110 °C
Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : Catches fire spontaneously if exposed to air, Pyrophoric liquid
Vapor pressure : 2 mm Hg
Relative vapor density at 20 °C : > 1
Relative density : 1.07
Solubility : Insoluble in water. Reacts slowly 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
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 dry inert atmosphere. Oxidizes in air.

10.3. Possibility of hazardous reactions
Will ignite spontaneously in contact with high surface area combustibles such as paper and textiles.

10.4. Conditions to avoid
Heat. Open flame. Sparks.

10.5. Incompatible materials

10.6. Hazardous decomposition products
Organic acid vapors. Phosphine oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified
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

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 : May cause respiratory irritation.

Specific target organ toxicity – repeated exposure : Not classified
May cause damage to organs through prolonged or repeated exposure

Aspiration hazard : Not classified
Symptoms/injuries after inhalation : May cause respiratory irritation.
Symptoms/injuries after skin contact : Causes skin irritation.
Symptoms/injuries after eye contact : Causes serious eye irritation.
Symptoms/injuries after ingestion : May be harmful if swallowed.
Reason for classification : Expert judgment
DIPHENYLPHOSPHINE
Safety Data Sheet

SECTION 12: Ecological information

12.1. Toxicity
Ecology - water : Toxic to aquatic life with long lasting effects.

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
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 : Incinerate. Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to licensed waste disposal facility. This is a RCRA hazardous waste: 40 CFR 261.21 (i.e. ignitable) 40 CFR 261.23 (i.e. reactive).
Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

14.1. UN number
UN-No.(DOT) : 2845
DOT NA no. : UN2845

14.2. UN proper shipping name
Transport document description : UN2845 Pyrophoric liquids, organic, n.o.s. (DIPHENYLPHOSPHINE), 4.2, I
Proper Shipping Name (DOT) : Pyrophoric liquids, organic, n.o.s. (DIPHENYLPHOSPHINE)
Class (DOT) : 4.2 - Class 4.2 - Spontaneously combustible material 49 CFR 173.124
Packing group (DOT) : I - Great Danger
Hazard labels (DOT) : 4.2 - Spontaneously combustible

DOT Packaging Non Bulk (49 CFR 173.xxx) : 181
DOT Packaging Bulk (49 CFR 173.xxx) : 244
DOT Packaging Exceptions (49 CFR 173.xxx) : None
DOT Symbols : G - Identifies PSN requiring a technical name

14.3. Additional information
Emergency Response Guide (ERG) Number : 135
Other information : No supplementary information available.

Transport by sea
DOT Vessel Stowage Location : D - The material must be stowed “on deck only” 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, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded
DOT Vessel Stowage Other : 13 - Keep as dry as reasonably practicable, 78 - Stow “separated longitudinally by an intervening complete compartment or hold from” explosives
Air transport
DOT Quantity Limitations Passenger aircraft/rail : Forbidden (49 CFR 173.27)
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)

SECTION 15: Regulatory information

15.1. US Federal regulations

<table>
<thead>
<tr>
<th>Diphenylphosphine (829-85-6)</th>
</tr>
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<tbody>
<tr>
<td>Listed on the United States TSCA (Toxic Substances Control Act) inventory</td>
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</table>

15.2. International regulations

CANADA
No additional information available

EU-Regulations

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<td>Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)</td>
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</table>

National regulations
No additional information available

15.3. US State regulations
No additional information available

SECTION 16: Other information

<table>
<thead>
<tr>
<th>Full text of H-phrases:</th>
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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

<table>
<thead>
<tr>
<th>Health</th>
</tr>
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<tbody>
<tr>
<td>3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is given</td>
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</tbody>
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<tr>
<th>Flammability</th>
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<tbody>
<tr>
<td>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)</td>
</tr>
</tbody>
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<table>
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<th>Physical</th>
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<tbody>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

Prepared by safety and environmental affairs.

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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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