# SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 01/27/2015 Version 1.2

## SECTION 1.Identification

### Product identifier

| | |
|---|---|
| Product number | 808270 |
| Product name | Triphenylphosphine for synthesis |
| CAS-No. | 603-35-0 |

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

| | |
|---|---|
| Identified uses | Chemical for synthesis |

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

| | |
|---|---|
| Company | EMD Millipore Corporation \| 290 Concord Road, Billerica, MA 01821, United States of America \| General Inquiries: +1-978-715-4321 \| Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5) |
| **Emergency telephone** | 800-424-9300 CHEMTREC (USA)<br>+1-703-527-3887 CHEMTREC (International)<br>24 Hours/day; 7 Days/week |

## SECTION 2. Hazards identification

### GHS Classification

Acute toxicity, Category 4, Oral, H302
Skin sensitization, Category 1, H317

For the full text of the H-Statements mentioned in this Section, see Section 16.

### GHS-Labeling

*Hazard pictograms*

*Signal Word*
Warning

*Hazard Statements*
H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.

*Precautionary Statements*
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves.
P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P321 Specific treatment (see supplemental first aid instructions on this label).
P330 Rinse mouth.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.
P501 Dispose of contents/ container to an approved waste disposal plant.

### Other hazards

None known.

## SECTION 3. Composition/information on ingredients

| | | |
|---|---|---|
| Formula | $(C_6H_5)_3P$ | $C_{18}H_{15}P$ (Hill) |
| Molar mass | 262.29 g/mol | |

### Hazardous ingredients

*Chemical Name (Concentration)*
CAS-No.
*triphenylphosphine (>= 90 % - <= 100 % )*
603-35-0

Exact percentages are being wihtheld as a trade secret.

## SECTION 4. First aid measures

### Description of first-aid measures

*Inhalation*
After inhalation: fresh air.

*Skin contact*
After skin contact: wash off with plenty of water. Remove contaminated clothing. Consult a physician.

*Eye contact*
After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist if necessary.

*Ingestion*
After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

Never give anything by mouth to an unconscious person.

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

Allergic reactions, CNS disorders

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

No information available.

## SECTION 5. Fire-fighting measures

### Extinguishing media

*Suitable extinguishing media*

Water, Carbon dioxide (CO2), Foam, Dry powder

*Unsuitable extinguishing media*

For this substance/mixture no limitations of extinguishing agents are given.

### Special hazards arising from the substance or mixture

Combustible.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air on intense heating.
Development of hazardous combustion gases or vapors possible in the event of fire.
Fire may cause evolution of:
phosphines, Oxides of phosphorus

### Advice for firefighters

*Special protective equipment for fire-fighters*

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

*Further information*

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

## SECTION 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Avoid inhalation of dusts. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

### Environmental precautions

Do not empty into drains.

### Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

## SECTION 7. Handling and storage

### Precautions for safe handling

Observe label precautions.

### Conditions for safe storage, including any incompatibilities

Tightly closed. Dry.

Store at +15°C to +25°C (+59°F to +77°F).

## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

Contains no substances with occupational exposure limit values.

### Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

### Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

*Hygiene measures*

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

*Eye/face protection*

Safety glasses

*Hand protection*

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

*Other protective equipment:*

protective clothing

*Respiratory protection*

required when dusts are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## SECTION 9. Physical and chemical properties

| | |
|---|---|
| Physical state | solid |
| Color | light yellow |
| Odor | characteristic |
| Odor Threshold | No information available. |
| pH | No information available. |
| Melting point | 78.5 - 81.5 °C |
| Boiling point/boiling range | 383 - 401 °F (195 - 205 °C)<br>at 7 hPa |
| Flash point | 356 °F (180 °C)<br>Method: open cup |

| | |
|---|---|
| | 360 °F (182 °C)<br>Method: c.c. |
| Evaporation rate | No information available. |
| Flammability (solid, gas) | May form combustible dust concentrations in air. |
| Lower explosion limit | No information available. |
| Upper explosion limit | No information available. |
| Vapor pressure | 0.01 hPa<br>at 190 °F (88 °C) |
| Relative vapor density | No information available. |
| Density | 1.194 g/cm³<br>at 68 °F (20 °C) |
| Relative density | No information available. |
| Water solubility | < 0.0001 g/l<br>at 77 °F (25 °C) |
| Partition coefficient: n-octanol/water | log Pow: > 2.587 (25 °C)<br>OECD Test Guideline 107<br>Bioaccumulation is not expected. |
| Autoignition temperature | No information available. |
| Decomposition temperature | > 698 °F (> 370 °C) |
| Viscosity, dynamic | No information available. |
| Explosive properties | Not classified as explosive. |
| Oxidizing properties | none |
| Ignition temperature | 797 °F (425 °C)<br>Method: DIN 51794 |
| Minimum ignition energy | 5 - 10 mJ |
| Bulk density | 500 - 600 kg/m³ |

## SECTION 10. Stability and reactivity

### Reactivity

Forms explosive mixtures with air on intense heating.

The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

### Chemical stability
The product is chemically stable under standard ambient conditions (room temperature) .

### Possibility of hazardous reactions
Violent reactions possible with:

Oxidizing agents, Strong acids

### Conditions to avoid
Strong heating.
A range from approx. 15 Kelvin below the flash point is to be rated as critical.

### Incompatible materials
no information available

### Hazardous decomposition products
in the event of fire: See section 5.

## SECTION 11. Toxicological information

### Information on toxicological effects

*Likely route of exposure*
Eye contact, Skin contact, Ingestion

*Acute oral toxicity*
LD50 Rat: 700 mg/kg (IUCLID)

absorption

*Acute inhalation toxicity*
LC50 Rat: 12 mg/l; 4 h (IUCLID)

*Acute dermal toxicity*
LD50 Rabbit: > 4,000 mg/kg
(IUCLID)

absorption

*Skin irritation*
Rabbit
Result: No irritation
(External MSDS)

*Eye irritation*
Rabbit
Result: No eye irritation
(External MSDS)

*Sensitization*
Sensitization test: Guinea pig
Result: positive
Method: OECD Test Guideline 406

May cause an allergic skin reaction.

*Genotoxicity in vitro*
Ames test
Result: negative
(IUCLID)

*Specific target organ systemic toxicity - single exposure*
The substance or mixture is not classified as specific target organ toxicant, single exposure.

*Specific target organ systemic toxicity - repeated exposure*
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

*Aspiration hazard*
Regarding the available data the classification criteria are not fulfilled.

**Carcinogenicity**

| | |
|---|---|
| IARC | No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC. |
| OSHA | No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA. |
| NTP | No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP. |
| ACGIH | No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH. |

**Further information**
Systemic effects:
After inhalation of dust:
CNS disorders
If swallowed
Possible damages:
change in weight
Further data:
Other dangerous properties can not be excluded.
Handle in accordance with good industrial hygiene and safety practice.

## SECTION 12. Ecological information

**Ecotoxicity**

*Toxicity to fish*
LC50 Leuciscus idus (Golden orfe): > 10,000 mg/l; 96 h
OECD Test Guideline 203

*Toxicity to daphnia and other aquatic invertebrates*
EC50 Daphnia: > 5 mg/l; 48 h (above the solubility limit in the test medium) (External MSDS)

*Toxicity to bacteria*
microtox test EC50 Photobacterium phosphoreum: 1.54 mg/l; 5 min (Lit.)

**Persistence and degradability**
*Biodegradability*
< 20 %; 28 d
OECD Test Guideline 301C
Not readily biodegradable.

**Bioaccumulative potential**
*Partition coefficient: n-octanol/water*
log Pow: > 2.587 (25 °C)
OECD Test Guideline 107
Bioaccumulation is not expected.

**Mobility in soil**
No information available.

*Additional ecological information*
Discharge into the environment must be avoided.

## SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

## SECTION 14. Transport information

**Land transport (DOT)**
Not classified as dangerous in the meaning of transport regulations.

**Air transport (IATA)**
Not classified as dangerous in the meaning of transport regulations.

**Sea transport (IMDG)**
Not classified as dangerous in the meaning of transport regulations.

## SECTION 15. Regulatory information

**United States of America**

**SARA 313**
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

### SARA 302
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

### Clean Water Act
This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

### DEA List I
Not listed

### DEA List II
Not listed

## US State Regulations

### Massachusetts Right To Know
Remarks
No components are subject to the Massachusetts Right to Know Act.

### California Prop 65 Components
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

## Notification status

| | |
|---|---|
| TSCA: | All components of the product are listed in the TSCA-inventory. |
| DSL: | All components of this product are on the Canadian DSL. |

## SECTION 16. Other information

### Training advice
Provide adequate information, instruction and training for operators.

### Labeling
*Hazard pictograms*

*Signal Word*
Warning

*Hazard Statements*
H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.

H413 May cause long lasting harmful effects to aquatic life.

*Precautionary Statements*
Prevention
P273 Avoid release to the environment.
P280 Wear protective gloves.
Response
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

**Full text of H-Statements referred to under sections 2 and 3.**

| | |
|---|---|
| H302 | Harmful if swallowed. |
| H317 | May cause an allergic skin reaction. |

**Key or legend to abbreviations and acronyms used in the safety data sheet**
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date01/27/2015

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.
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