



# MATERIAL SAFETY DATA SHEET

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

Date of issue: 03/11/2013

Version 1.0

## SECTION 1. Identification

### Product identifier

Product number 808270  
Product name Triphenylphosphine for synthesis

### 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 | SDS Phone Support: +1-978-715-1335 |  
General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to  
4:00 PM Eastern Time (GMT-5)  
  
e-mail: mm\_sds@merckgroup.com

Emergency telephone 800-424-9300 CHEMTREC (USA)  
+1-703-527-3887 CHEMTREC (International)  
24 Hours/day; 7 Days/week

## SECTION 2. Hazards identification

### GHS Classification

Acute toxicity, Category 4, Oral, H302  
Skin sensitization, Category 1, H317  
Chronic aquatic toxicity, Category 4, H413

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.

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H413 May cause long lasting harmful effects to aquatic life.

### *Precautionary Statements*

P262 Do not get in eyes, on skin, or on clothing.

P273 Avoid release to the environment.

P280 Wear protective gloves.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

### **OSHA Hazards**

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

### **Other hazards**

None known.

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### **SECTION 3. Composition/information on ingredients**

Formula	(C <sub>6</sub> H <sub>5</sub> ) <sub>3</sub> P	C <sub>18</sub> H <sub>15</sub> P (Hill)
CAS-No.	603-35-0	
Molar mass	262.29 g/mol	

### **Hazardous ingredients**

*Chemical Name ( Concentration)*

CAS-No.

*triphenylphosphine ( >= 90 % - <= 100 % )*

603-35-0

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### **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.

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### SECTION 5. Fire-fighting measures

#### Extinguishing media

##### *Suitable extinguishing media*

Water, Carbon dioxide (CO<sub>2</sub>), 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.

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### 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.

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### 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).

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## 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.

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## 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) at 7 hPa
Flash point	356 °F ( 180 °C) Method: open cup

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	360 °F ( 182 °C) Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapor pressure	0.01 hPa at 190 °F ( 88 °C)
Relative vapor density	No information available.
Relative density	1.194 g/cm <sup>3</sup> at 68 °F ( 20 °C)
Water solubility	< 0.0001 g/l at 77 °F ( 25 °C)
Partition coefficient: n-octanol/water	log Pow: > 2.587 ( 25 °C) OECD Test Guideline 107 Bioaccumulation is not expected (log Pow <1).
Autoignition temperature	No information available.
Decomposition temperature	> 698 °F ( > 370 °C)
Viscosity, dynamic	No information available.
Explosive properties	No information available.
Ignition temperature	797 °F ( 425 °C) Method: DIN 51794
Minimum ignition energy	5 - 10 mJ
Bulk density	500 - 600 kg/m <sup>3</sup>

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## 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) .

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## 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.

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## 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.

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### *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.

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## **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.)

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## **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 (log Pow <1).

## **Mobility in soil**

No information available.

## **Other adverse effects**

### *Additional ecological information*

Discharge into the environment must be avoided.

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## **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.

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## **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.

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## **SECTION 15. Regulatory information**

### **United States of America**

#### **OSHA Hazards**

Combustible dust

Harmful if swallowed.

Skin sensitizer

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

#### **SARA 311/312 Hazards**

Acute Health Hazard

#### **SARA 313**

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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

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

## Massachusetts Right To Know

Remarks

No components are subject to the Massachusetts Right to Know Act.

## Pennsylvania Right To Know

*Ingredients*

triphenylphosphine

## New Jersey Right To Know

*Ingredients*

triphenylphosphine

## Notification status

TSCA: On TSCA Inventory

DSL: All components of this product are on the Canadian DSL.

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## SECTION 16. Other information

### Training advice

Provide adequate information, instruction and training for operators.

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

H302 Harmful if swallowed.  
H317 May cause an allergic skin reaction.  
H413 May cause long lasting harmful effects to aquatic life.

### 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](http://www.wikipedia.org).

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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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