

# Material Safety Data Sheet

## According to OSHA and ANSI

Printing date 03/21/2011

Reviewed on 03/18/2011

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

**Product identifier**
**Product name:** Phenylphosphine
**Stock number:** 30155

**CAS Number:**

638-21-1

**EINECS Number:**

211-325-4

**Relevant identified uses of the substance or mixture and uses advised against.**
**Sector of Use** SU24 Scientific research and development

**Details of the supplier of the safety data sheet**
**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Emergency Phone: (978) 521-6300

CHEMTREC: (800) 424-9300

Web Site: www.alfa.com

**Information Department:** Health, Safety and Environmental Department

**Emergency telephone number:**

During normal hours the Health, Safety and Environmental Department. After normal hours call Chemtrec at (800) 424-9300.

### 2 Hazards identification

**Classification of the substance or mixture**


GHS02 Flame

H250 Catches fire spontaneously if exposed to air.

H252 Self-heating in large quantities; may catch fire.



GHS07

H332 Harmful if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H227 Combustible liquid.

**Classification according to Directive 67/548/EEC or Directive 1999/45/EC**


Xn; Harmful

R20: Harmful by inhalation.



Xi; Irritant

R36/37/38: Irritating to eyes, respiratory system and skin.



F; Highly flammable

R17: Spontaneously flammable in air.

**Information concerning particular hazards for human and environment:** Not applicable

**Label elements**
**Labelling according to EU guidelines:**
**Code letter and hazard designation of product:**

Xn Harmful

F Highly flammable

**Risk phrases:**

17 Spontaneously flammable in air.

20 Harmful by inhalation.

36/37/38 Irritating to eyes, respiratory system and skin.

**Safety phrases:**

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

33 Take precautionary measures against static discharges.

36/37 Wear suitable protective clothing and gloves.

(Contd. on page 2)

-USA-

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**Product name:** Phenylphosphine

(Contd. of page 1)

**Hazard description:****WHMIS classification**

B3 - Combustible liquid

B6 - Reactive flammable material

D2B - Toxic material causing other toxic effects

**Classification system****HMIS ratings (scale 0-4)**

(Hazardous Materials Identification System)

HEALTH	3
FIRE	3
REACTIVITY	2

Health (acute effects) = 3

Flammability = 3

Reactivity = 2

**Other hazards****Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.

## 3 Composition/information on ingredients

**Chemical characterization: Substances****(CAS#) Description:**

Phenylphosphine (CAS# 638-21-1)

**Identification number(s):****EINECS Number:** 211-325-4

## 4 First aid measures

**Description of first aid measures****After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

**After skin contact**

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

**After eye contact**

Rinse opened eye for several minutes under running water. Then consult a doctor.

**After swallowing** Seek immediate medical advice.

## 5 Firefighting measures

**Extinguishing media****Suitable extinguishing agents** CO<sub>2</sub>, sand, extinguishing powder. Do not use water.**For safety reasons unsuitable extinguishing agents** Water**Special hazards arising from the substance or mixture**

Spontaneously flammable in air.

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Phosphorus oxides

Hydrogen phosphide (Phosphine)

**Advice for firefighters****Protective equipment:**

Wear self-contained respirator.

Wear fully protective impervious suit.

## 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

**Environmental precautions:**

Do not allow material to be released to the environment without proper governmental permits.

(Contd. on page 3)

USA

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**Product name: Phenylphosphine**

(Contd. of page 2)

**Methods and material for containment and cleaning up:**

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Keep away from ignition sources.

**Reference to other sections**

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

**7 Handling and storage****Handling****Precautions for safe handling**

Handle under dry protective gas.

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

**Information about protection against explosions and fires:**

Keep ignition sources away.

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

Substance/product is self ignitable.

**Conditions for safe storage, including any incompatibilities****Storage****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:**

Store away from air.

Store away from oxidizing agents.

**Further information about storage conditions:**

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Store under dry inert gas.

**8 Exposure controls/personal protection****Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

**Components with limit values that require monitoring at the workplace:****Phenylphosphine**

	ppm
ACGIH TLV	0.05-Ceiling
Belgium TWA	0.05-STEL
Denmark TWA	0.05
Finland TWA	0.05-STEL
France TWA	0.05-STEL
Netherlands TWA	0.05-Ceiling
Switzerland TWA	0.05

**Control parameters****Components with limit values that require monitoring at the workplace:****Additional information:** No data**Exposure controls****Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

**Breathing equipment:** Use suitable respirator when high concentrations are present.**Protection of hands:** Impervious gloves**Eye protection:**

Safety glasses

Full face protection

(Contd. on page 4)

- USA -

# Material Safety Data Sheet

According to OSHA and ANSI

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Body protection: Protective work clothing.

(Contd. of page 3)

## 9 Physical and chemical properties

### Information on basic physical and chemical properties

#### General Information

#### Appearance:

Form:	Liquid
Color:	Colorless
Odor:	Stench
Odour threshold:	Not determined.

pH-value: Not determined.

#### Change in condition

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	160°C (320 °F)
Sublimation temperature / start:	Not determined

Flash point: 74°C (165 °F)

Flammability (solid, gaseous) Not applicable.

Ignition temperature: Not determined

Decomposition temperature: Not determined

Auto igniting: Spontaneously flammable in air.

#### Explosion limits:

Lower:	Not determined
Upper:	Not determined

Vapor pressure: Not determined

Density at 20°C (68 °F): 1 g/cm³ (8.345 lbs/gal)

Relative density Not determined.

Vapour density Not determined.

Evaporation rate Not determined.

#### Solubility in / Miscibility with

Water: Not miscible or difficult to mix

Segregation coefficient (n-octanol/water): Not determined.

#### Viscosity:

dynamic: Not determined.

kinematic: Not determined.

Other information No further relevant information available.

## 10 Stability and reactivity

### Reactivity

### Chemical stability

### Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions Spontaneously flammable in air.

### Incompatible materials:

Air

Oxidizing agents

### Hazardous decomposition products:

Carbon monoxide and carbon dioxide

Phosphorus oxides (e.g. P2O5)

Hydrogen phosphide (Phosphine)

## 11 Toxicological information

### Information on toxicological effects

### Acute toxicity:

### LD/LC50 values that are relevant for classification:

Inhalative LC50/4H 38 ppm/4H (rat)

### Primary irritant effect:

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: No sensitizing effects known.

(Contd. on page 5)

- USA

# Material Safety Data Sheet

## According to OSHA and ANSI

Printing date 03/21/2011

Reviewed on 03/18/2011

**Product name:** Phenylphosphine

(Contd. of page 4)

**Subacute to chronic toxicity:**

Organic phosphorus compounds exhibit a wide range of toxicity. Most are skin and eye irritants with the more volatile also being respiratory irritants. Those exhibiting substantial water reactivity will have stronger irritating properties and may be corrosive enough to cause severe burns. Some organic phosphorus compounds are cholinesterase inhibitors. Symptoms associated with these include muscle twitching, convulsions, flaccid paralysis, coma, respiratory failure. They can be highly paralytic.

**Additional toxicological information:**

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

**12 Ecological information****Toxicity**

**Acquatic toxicity:** No further relevant information available.

**Persistence and degradability** No further relevant information available.

**Behavior in environmental systems:**

**Bioaccumulative potential** No further relevant information available.

**Mobility in soil** No further relevant information available.

**Additional ecological information:****General notes:**

Do not allow material to be released to the environment without proper governmental permits.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

**13 Disposal considerations****Waste treatment methods**

**Recommendation** Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

**14 Transport information****DOT regulations:**

<b>Hazard class:</b>	4.2
<b>Identification number:</b>	UN2845
<b>Packing group:</b>	I
<b>Proper shipping name (technical name):</b>	PYROPHORIC LIQUID, ORGANIC, N.O.S. (Phenylphosphine)
<b>Label</b>	4.2

**Land transport ADR/RID (cross-border)**

<b>ADR/RID class:</b>	4.2 (S1) Substances liable to spontaneous combustion
<b>Danger code (Kemler):</b>	333
<b>UN-Number:</b>	2845
<b>Packaging group:</b>	I
<b>UN proper shipping name:</b>	2845 PYROPHORIC LIQUID, ORGANIC, N.O.S. (Phenylphosphine)

(Contd. on page 6)

USA

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(Contd. of page 5)

**Maritime transport IMDG:**

IMDG Class: 4.2  
 UN Number: 2845  
 Label: 4.2  
 Packaging group: I  
 Marine pollutant: No  
 Proper shipping name: PYROPHORIC LIQUID, ORGANIC, N.O.S. (Phenylphosphine)

**Air transport ICAO-TI and IATA-DGR:**

ICAO/IATA Class: 4.2  
 UN/ID Number: 2845  
 Label: 4.2  
 Packaging group: I  
 Proper shipping name: PYROPHORIC LIQUID, ORGANIC, N.O.S. (Phenylphosphine)

UN "Model Regulation": UN2845, PYROPHORIC LIQUID, ORGANIC, N.O.S., 4.2, I  
 Special precautions for user Warning: Substances liable to spontaneous combustion  
 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code Not applicable.

## 15 Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

**Product related hazard informations:****Hazard symbols:**

Xn Harmful  
 F Highly flammable

**Risk phrases:**

17 Spontaneously flammable in air.  
 20 Harmful by inhalation.  
 36/37/38 Irritating to eyes, respiratory system and skin.

**Safety phrases:**

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
 33 Take precautionary measures against static discharges.  
 36/37 Wear suitable protective clothing and gloves.

**National regulations**

This product is not listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical Substance Inventory. Use of this product is restricted to research and development only.

This product contains a chemical known to the state of California to cause cancer or reproductive toxicity.

Some or all of the components of this product are not listed on the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).

**Information about limitation of use:** For use only by technically qualified individuals.

**Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

**Department issuing MSDS:** Health, Safety and Environmental Department.

(Contd. on page 7)

- USA -

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(Contd. of page 6)

**Contact:**

Zachariah C. Holt  
Global EHS Manager

**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)

ICAO: International Civil Aviation Organization

ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

HMIS: Hazardous Materials Identification System (USA)

WHMIS: Workplace Hazardous Materials Information System (Canada)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

- USA -