

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/13/2010

Reviewed on 05/12/2010

1 Identification of substance:

Product details:

Product name: Tris(trimethylsilyl)phosphine

Stock number: 30218

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 information:

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

2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

Tris(trimethylsilyl)phosphine (CAS# 15573-38-3)

3 Hazards identification

Hazard description:



Xi Irritant
F Highly flammable

Information pertaining to particular dangers for man and environment

R 17 Spontaneously flammable in air.

R 36/38 Irritating to eyes and skin.

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	1
FIRE	4
REACTIVITY	3

Health (acute effects) = 1
Flammability = 4
Reactivity = 3

GHS label elements



Danger

2.9/1 - Catches fire spontaneously if exposed to air.

2.11/2 - Self-heating in large quantities; may catch fire.



Warning

3.2/2 - Causes skin irritation.

3.3/2A - Causes serious eye irritation.

Prevention:

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Do not allow contact with air.

Response:

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

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

Specific treatment (see on this label).

Storage:

Store contents under inert gas.

4 First aid measures

General information Immediately remove any clothing soiled by the product.

After inhalation

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

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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 Fire fighting measures

Suitable extinguishing agents CO2, sand, extinguishing powder. Do not use water.

For safety reasons unsuitable extinguishing agents Water

Special hazards caused by the material, its products of combustion or resulting gases:

Spontaneously flammable in air.

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Phosphorus oxides

Hydrogen phosphide (Phosphine)

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Measures for environmental protection:

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

Measures for cleaning/collecting:

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

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Keep away from ignition sources.

Additional information:

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

Information 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.

Substance/product is self ignitable.

Storage

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Store away from air.

Further information about storage conditions:

Store under dry inert gas.

Avoid contact with air/oxygen.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

This product is air sensitive.

8 Exposure controls and 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.

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Components with limit values that require monitoring at the workplace: Not required.

Additional information: No data

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

Tightly sealed goggles

Full face protection

Body protection: Protective work clothing.**9 Physical and chemical properties:****General Information**

Form:	Liquid
Color:	Colorless
Odor:	Pungent

Change in condition

Melting point/Melting range:	24°C (75°F)
Boiling point/Boiling range:	102-105°C (216-221°F) (16mm Hg)
Sublimation temperature / start:	Not determined

Flash point: Not determined**Ignition temperature:** 20°C (68°F)**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):** 0.863 g/cm³**Solubility in / Miscibility with Water:** Not miscible or difficult to mix**10 Stability and reactivity****Thermal decomposition / conditions to be avoided:**

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

Materials to be avoided:

Air

Oxidizing agents

Dangerous reactions Spontaneously flammable in air.**Dangerous products of decomposition:**

Carbon monoxide and carbon dioxide

Phosphorus oxides (e.g. P₂O₅)

Hydrogen phosphide (Phosphine)

11 Toxicological information**Acute toxicity:****Primary irritant effect:****on the skin:** Irritant to skin and mucous membranes.**on the eye:** Irritating effect.**Sensitization:** No sensitizing effects known.**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

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paralysis, coma, respiratory failure. They can be highly paralytic.

Subacute to chronic toxicity:

Organic silicon compounds are generally of low toxicity. Those exhibiting moisture sensitivity may be strongly irritating or corrosive on contact.

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:

Additional ecological information:
General notes:

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

13 Disposal considerations

Product:

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:

Hazard class:

4.2

Identification number:

UN2845

Packing group:

I

Proper shipping name (technical name): PYROPHORIC LIQUID, ORGANIC, N.O.S.

(Tris(trimethylsilyl)phosphine)

Label

4.2

Land transport ADR/RID (cross-border)

ADR/RID class:

4.2 (S1) Substances liable to spontaneous combustion

Danger code (Kemler):

333

UN-Number:

2845

Packaging group:

I

Description of goods:

2845 PYROPHORIC LIQUID, ORGANIC, N.O.S.

(Tris(trimethylsilyl)phosphine)

Maritime transport IMDG:

IMDG Class:

4.2

UN Number:

2845

Label

4.2

Packaging group:

I

Marine pollutant:

No

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Proper shipping name: PYROPHORIC LIQUID, ORGANIC, N.O.S.
(Tris(trimethylsilyl)phosphine)

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.
(Tris(trimethylsilyl)phosphine)

UN "Model Regulation": UN2845, PYROPHORIC LIQUID, ORGANIC, N.O.S., 4.2, I

15 Regulations

Product related hazard informations:

Hazard symbols:

Xi Irritant

F Highly flammable

Risk phrases:

17 Spontaneously flammable in air.

36/38 Irritating to eyes and skin.

Safety phrases:

7 Keep container tightly closed.

17 Keep away from combustible material.

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

37 Wear suitable 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.

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.

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.

Contact: Zachariah Holt

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)

GHS: Globally Harmonized System of Classification and Labelling of Chemicals

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

HMIS: Hazardous Materials Identification System (USA)

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