

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 11/11/2010

Reviewed on 11/10/2010

1 Identification of the substance/mixture and of the company/undertaking**Product identifier****Product name:** Methyldichlorophosphine**Stock number:** 30211**CAS Number:**

676-83-5

EINECS Number:

211-631-8

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

H226 Flammable liquid and vapour.

H250 Catches fire spontaneously if exposed to air.

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



GHS05 Corrosion

H314 Causes severe skin burns and eye damage.

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

C; Corrosive

R34: Causes burns.



F; Highly flammable

R17: Spontaneously flammable in air.

R14: Reacts violently with water.

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

C Corrosive

F Highly flammable

Risk phrases:

14 Reacts violently with water.

17 Spontaneously flammable in air.

34 Causes burns.

Safety phrases:

8 Keep container dry.

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

36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

45 In case of accident or if you feel unwell, seek medical advice immediately.

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Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	2
FIRE	4
REACTIVITY	2

Health (acute effects) = 2

Flammability = 4

Reactivity = 2

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

3 Composition/information on ingredients

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

Methyldichlorophosphine (CAS# 676-83-5)

Identification number(s):**EINECS Number:** 211-631-8

4 First aid measures

Description of 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.

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** Extinguishing powder. Do not use water.**For safety reasons unsuitable extinguishing agents** Water**Special hazards arising from the substance or mixture**

Reacts violently with water

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Hydrogen chloride (HCl)

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.

Methods and material for containment and cleaning up:

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.

Do not flush with water or aqueous cleansing agents

Keep away from ignition sources.

Reference to other sections

See Section 7 for information on safe handling

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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.
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 water/moisture.
Further information about storage conditions:
Store under dry inert gas.
This product is moisture sensitive.
Keep container tightly sealed.
Store in cool, dry conditions in well sealed containers.
Protect from humidity and water.
This product is air sensitive.
Specific end use(s) No further relevant information available.

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.

Control parameters

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

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
Tightly sealed goggles
Full face protection

Body protection: Protective work clothing.

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:

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

pH-value:	Not determined.
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Change in condition

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	81-82°C (178-180°F) (729mm Hg)

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Sublimation temperature / start:	Not determined
Flash point:	48°C (118°F)
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Auto igniting:	Spontaneously flammable in air.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure at 20°C (68°F):	100 hPa (75 mm Hg)
Density at 20°C (68°F):	1.309 g/cm ³ (10.924 lbs/gal)
Relative density	Not determined.
Vapour density	Not determined.
Evaporation rate	Not determined.
Solubility in / Miscibility with Water:	Reacts violently
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

Reacts violently with water

Reacts with water forming hydrochloric acid (HCl)

Spontaneously flammable in air.

Incompatible materials:

Water/moisture

Acids

Oxidizing agents

Air

Hazardous decomposition products:

Carbon monoxide and carbon dioxide

Hydrogen chloride (HCl)

Phosphorus oxides (e.g. P₂O₅)

Hydrogen phosphide (Phosphine)

11 Toxicological information**Information on toxicological effects****Acute toxicity:****Primary irritant effect:****on the skin:**

Corrosive effect on skin and mucous membranes.

Irritant to skin and mucous membranes.

on the eye:

Strong corrosive effect.

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

Subacute to chronic toxicity:

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss.

Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause damage to the mouth, throat and esophagus. May cause skin

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burns or irritation depending on the severity of the exposure.

Additional toxicological information:

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

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:**Hazard class:** 4.2**Identification number:** UN2845**Packing group:** I**Proper shipping name (technical name):** PYROPHORIC LIQUID, ORGANIC, N.O.S.
(Methyldichlorophosphine)**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**UN proper shipping name:** 2845 PYROPHORIC LIQUID, ORGANIC, N.O.S.
(Methyldichlorophosphine)**Maritime transport IMDG:****IMDG Class:** 4.2**UN Number:** 2845**Label** 4.2

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Packaging group:	I
Marine pollutant:	No
Proper shipping name:	PYROPHORIC LIQUID, ORGANIC, N.O.S. (Methyldichlorophosphine)

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. (Methyldichlorophosphine)

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:

C Corrosive
 F Highly flammable

Risk phrases:

14 Reacts violently with water.
 17 Spontaneously flammable in air.
 34 Causes burns.

Safety phrases:

8 Keep container dry.
 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
 45 In case of accident or if you feel unwell, seek medical advice immediately.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.
 All components of this product are listed on 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.

Contact: Ryan P. Wilson

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)

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