

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 05/12/2010

Reviewed on 05/11/2010

1 Identification of substance:

Product details:

Product name: Ethyldichlorophosphine

Stock number: A17950

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#)

Ethyldichlorophosphine (CAS# 1498-40-4)

Identification number(s):

EINECS Number: 216-096-4

3 Hazards identification

Hazard description:



T+ Very toxic
F Highly flammable

Information pertaining to particular dangers for man and environment

R 14 Reacts violently with water.

R 17 Spontaneously flammable in air.

R 26 Very toxic by inhalation.

R 34 Causes burns.

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	4
FIRE	3
REACTIVITY	2

Health (acute effects) = 4

Flammability = 3

Reactivity = 2

GHS label elements



Danger

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

2.6/3 - Flammable liquid and vapour.

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



Danger

3.1/1 - Fatal if inhaled.



Danger

3.2/1B - Causes severe skin burns and eye damage.

Response:

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

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

Specific treatment is urgent (see on this label).

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Product name: Ethyldichlorophosphine

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Storage:

Store locked up.

Store contents under inert gas.

Disposal:

Dispose of contents/container in accordance with local/regional/national/international regulations.

4 First aid measures**General information**

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing has been completely removed.

In case of irregular breathing or respiratory arrest provide artificial respiration.

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 Fire fighting measures****Suitable extinguishing agents**

In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.

For safety reasons unsuitable extinguishing agents Water**Special hazards caused by the material, its products of combustion or resulting gases:**

Reacts violently with water

Spontaneously flammable in air.

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Phosphorus oxides

Hydrogen chloride (HCl)

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.

Do not flush with water or aqueous cleansing agents

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.

Open and handle container with care.

Information about protection against explosions and fires:

Keep ignition sources away.

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Product name: Ethyldichlorophosphine

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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 air.

Store away from water/moisture.

Store away from oxidizing agents.

Further information about storage conditions:

Store under dry inert gas.

Protect from humidity and water.

This product is moisture sensitive.

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.

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.

Store protective clothing separately.

Avoid contact with the eyes and skin.

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

Impervious gloves

Check protective gloves prior to each use for their proper condition.

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality.

Quality will vary from manufacturer to manufacturer.

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
	Light yellow
Odor:	Not determined

Change in condition

Melting point/Melting range:	Not determined
Boiling point/Boiling range:	113-116°C (235-241°F)
Sublimation temperature / start:	Not determined

Flash point:	33°C (91°F)
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Ignition temperature:	Not determined
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Decomposition temperature:	Not determined
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Auto igniting:	Spontaneously flammable in air.
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Explosion limits:

Lower:	Not determined
Upper:	Not determined

Vapor pressure:	Not determined
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Density at 20°C (68°F):	1.26 g/cm ³
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Product name: Ethyldichlorophosphine

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Solubility in / Miscibility with
Water:

Reacts violently

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:

Water/moisture

Air

Oxidizing agents

Dangerous reactions

Spontaneously flammable in air.

Reacts violently with water

Dangerous products of decomposition:

Carbon monoxide and carbon dioxide

Phosphorus oxides (e.g. P2O5)

Hydrogen chloride (HCl)

11 Toxicological information

Acute toxicity:**LD/LC50 values that are relevant for classification:**

Inhalative	LCLo/10M	1990 mg/m3 (mouse)
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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:**

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 burns or irritation depending on the severity of the exposure.

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.

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

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 undiluted product or large quantities of it to reach ground water, water course or sewage system.

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.

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Product name: Ethyldichlorophosphine

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Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information

DOT regulations:



Hazard class: 6.1
 Identification number: NA2845
 Packing group: I
 Poison inhalation hazard: Yes
 Proper shipping name (technical name): ETHYL PHOSPHONOUS DICHLORIDE, ANHYDROUS
 Label: 6.1+4.2

Land transport ADR/RID (cross-border)



ADR/RID class: 4.2 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.
 (Ethyldichlorophosphine)

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.
 (Ethyldichlorophosphine)

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.
 (Ethyldichlorophosphine)

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

15 Regulations

Product related hazard informations:

Hazard symbols:

T+ Very toxic

F Highly flammable

Risk phrases:

14 Reacts violently with water.

17 Spontaneously flammable in air.

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26 Very toxic by inhalation.
34 Causes burns.

Safety phrases:

4 Keep away from living quarters.
8 Keep container dry.
9 Keep container in a well-ventilated place.
20 When using do not eat or drink.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
28 After contact with skin, wash immediately with plenty of water
30 Never add water to this product.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
43 In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.
45 In case of accident or if you feel unwell, seek medical advice immediately.
60 This material and its container must be disposed of as hazardous waste.

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
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent

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