

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 09/20/2010

Reviewed on 09/03/2010

1 Identification of substance:**Product details:****Product name:** Dicyclohexylchlorophosphine**Stock number:** 33571**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 Hazards identification**Hazard description:**

C Corrosive

Information pertaining to particular dangers for man and environment

R 14 Reacts violently with water.

R 34 Causes burns.

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

HEALTH	3
FIRE	1
REACTIVITY	2

Health (acute effects) = 3

Flammability = 1

Reactivity = 2

GHS label elements

Danger

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

Prevention:

Do not breathe dust/fume/gas/mist/vapours/spray.

Response:

IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

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.

Storage:

Store locked up.

Disposal:

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

3 Composition/Data on components:**Chemical characterization:****Description: (CAS#)**

dicyclohexylchlorophosphine (CAS# 16523-54-9)

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.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

(Contd. on page 2)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 09/20/2010

Reviewed on 09/03/2010

Product name: Dicyclohexylchlorophosphine

(Contd. of page 1)

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:**

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Phosphorus oxides

Hydrogen chloride (HCl)

Reacts violently with water

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

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

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.**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.

Store away from strong bases.

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

(Contd. on page 3)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

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Reviewed on 09/03/2010

Product name: Dicyclohexylchlorophosphine

(Contd. of page 2)

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

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:	Light yellow
Odor:	Acrid

Change in condition**Melting point/Melting range:** Not determined**Boiling point/Boiling range:** Not determined**Sublimation temperature / start:** Not determined**Flash point:** 109°C (228°F)**Ignition temperature:** Not determined**Decomposition temperature:** Not determined**Danger of explosion:** Product does not present an explosion hazard.**Explosion limits:****Lower:** Not determined**Upper:** Not determined**Vapor pressure at 165°C (329°F):** 15.9 hPa (12 mm Hg)**Density at 20°C (68°F):** 1.054 g/cm³**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:

Air

Water/moisture

Oxidizing agents

Bases

Dangerous reactions 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:****Primary irritant effect:****on the skin:** Corrosive effect on skin and mucous membranes.**on the eye:** Strong corrosive effect.**Sensitization:** No sensitizing effects known.

(Contd. on page 4)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

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Reviewed on 09/03/2010

Product name: Dicyclohexylchlorophosphine

(Contd. of page 3)

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 burns or irritation depending on the severity of the exposure.

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.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information**DOT regulations:****Hazard class:**

8

Identification number:

UN3265

Packing group:

II

Proper shipping name (technical name): CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
(Dicyclohexylchlorophosphine)

Label

8

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

8 (C3) Corrosive substances

Danger code (Kemler):

80

UN-Number:

3265

Packaging group:

II

(Contd. on page 5)

USA

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Reviewed on 09/03/2010

Product name: Dicyclohexylchlorophosphine

(Contd. of page 4)

Description of goods: 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
(Dicyclohexylchlorophosphine)

Maritime transport IMDG:

IMDG Class: 8
UN Number: 3265
Label 8
Packaging group: II
Marine pollutant: No
Segregation groups Acids
Proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
(Dicyclohexylchlorophosphine)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 8
UN/ID Number: 3265
Label 8
Packaging group: II
Proper shipping name: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.
(Dicyclohexylchlorophosphine)

UN "Model Regulation": UN3265, CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S., 8, II

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

C Corrosive

Risk phrases:

14 Reacts violently with water.
34 Causes burns.

Safety phrases:

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.

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

(Contd. on page 6)

USA

Material Safety Data Sheet

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Product name: Dicyclohexylchlorophosphine

(Contd. of page 5)

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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