

## 1 Identification

### Product identifier

**Product name:** Cyclophosphamide monohydrate

**Stock number:** L11508

**CAS Number:**  
6055-19-2

**EC number:**  
200-015-4

**Relevant identified uses of the substance or mixture and uses advised against.**

**Identified use:** SU24 Scientific research and development

### Details of the supplier of the safety data sheet

#### Manufacturer/Supplier:

Alfa Aesar  
 Thermo Fisher Scientific Chemicals, Inc.  
 30 Bond Street  
 Ward Hill, MA 01835-8099

Tel: 800-343-0660

Fax: 800-322-4757

Email: tech@alfa.com

www.alfa.com

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

**Emergency telephone number:**

During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

## 2 Hazard(s) identification

### Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.



GHS08 Health hazard

Muta. 1A H340 May cause genetic defects.

Carc. 1A H350 May cause cancer.

Repr. 1A H360 May damage fertility or the unborn child.

**Hazards not otherwise classified** No information known.

### Label elements

**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

### Hazard pictograms



GHS06 GHS08

**Signal word** Danger

### Hazard statements

H301 Toxic if swallowed.

H340 May cause genetic defects.

H350 May cause cancer.

H360 May damage fertility or the unborn child.

### Precautionary statements

P281 Use personal protective equipment as required.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor/...

P308+P313 IF exposed or concerned: Get medical advice/attention.

P321 Specific treatment (see on this label).

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### WHMIS classification

D1A - Very toxic material causing immediate and serious toxic effects

D2A - Very toxic material causing other toxic effects



### Classification system

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

(Hazardous Materials Identification System)

HEALTH 2 Health (acute effects) = 2

FIRE 1 Flammability = 1

REACTIVITY 1 Physical Hazard = 1

### Other hazards

### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

## 3 Composition/information on ingredients

### Chemical characterization: Substances

#### CAS# Description:

6055-19-2 Cyclophosphamide monohydrate

#### Identification number(s):

EC number: 200-015-4

Product name: **Cyclophosphamide monohydrate**

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#### 4 First-aid measures

##### Description of first aid measures

##### General information

Immediately remove any clothing soiled by the product.  
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** Do not induce vomiting; immediately call for medical help.

##### Information for doctor

**Most important symptoms and effects, both acute and delayed** No further relevant information available.

**Indication of any immediate medical attention and special treatment needed** No further relevant information available.

#### 5 Fire-fighting measures

##### Extinguishing media

**Suitable extinguishing agents** Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

##### Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Carbon monoxide and carbon dioxide

Nitrogen oxides (NO<sub>x</sub>)

Hydrogen chloride (HCl)

Phosphorus oxides

##### 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

**Environmental precautions:** Do not allow product to reach sewage system or any water course.

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

Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.

**Prevention of secondary hazards:** No special measures required.

##### 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

Keep container tightly sealed.

Ensure good ventilation at the workplace.

Open and handle container with care.

**Information about protection against explosions and fires:** No information known.

##### Conditions for safe storage, including any incompatibilities

##### Storage

**Requirements to be met by storerooms and receptacles:** Refrigerate

##### Information about storage in one common storage facility:

Protect from heat.

Do not store together with acids.

Store away from strong bases.

Store away from oxidizing agents.

##### Further information about storage conditions:

Keep container tightly sealed.

Refrigerate

**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:

The product does not contain any relevant quantities of materials with critical values that have to be monitored 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.

Store protective clothing separately.

Maintain an ergonomically appropriate working environment.

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

##### Recommended filter device for short term use:

Use a respirator with type P100 (USA) or P3 (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

##### Protection of hands:

Impervious gloves

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

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

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USA

Product name: **Cyclophosphamide monohydrate**

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**Material of gloves** Nitrile rubber, NBR  
**Penetration time of glove material (in minutes)** Not determined  
**Eye protection:** Safety glasses  
**Body protection:** Protective work clothing.

## 9 Physical and chemical properties

### Information on basic physical and chemical properties

#### General Information

##### Appearance:

**Form:** Crystalline powder  
**Color:** White  
**Odor:** Odorless  
**Odor threshold:** Not determined.

**pH-value:** Not applicable.

##### Change in condition

**Melting point/Melting range:** 51-53 °C (124-127 °F)  
**Boiling point/Boiling range:** Not determined  
**Sublimation temperature / start:** Not determined

**Flash point:** 113 °C (235 °F)  
**Flammability (solid, gaseous)** Not determined.  
**Ignition temperature:** Not determined  
**Decomposition temperature:** Not determined  
**Auto igniting:** Not determined.

**Danger of explosion:** Not determined.

##### Explosion limits:

**Lower:** Not determined  
**Upper:** Not determined

**Vapor pressure:** Not applicable.

**Density:** Not determined

**Relative density** Not determined.

**Vapor density** Not applicable.

**Evaporation rate** Not applicable.

**Solubility in / Miscibility with**

**Water at 20 °C (68 °F):** 40 g/l

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

**Viscosity:**

**dynamic:** Not applicable.

**kinematic:** Not applicable.

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

## 10 Stability and reactivity

**Reactivity** No information known.

**Chemical stability** Stable under recommended storage conditions.

**Thermal decomposition / conditions to be avoided:** Decomposition will not occur if used and stored according to specifications.

**Possibility of hazardous reactions** Reacts with strong oxidizing agents

**Conditions to avoid** No further relevant information available.

##### Incompatible materials:

Acids  
Bases  
Oxidizing agents  
Heat

##### Hazardous decomposition products:

Carbon monoxide and carbon dioxide  
Nitrogen oxides  
Hydrogen chloride (HCl)  
Phosphorus oxides (e.g. P2O5)

## 11 Toxicological information

### Information on toxicological effects

#### Acute toxicity:

Toxic if swallowed.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for this substance.

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

Oral LD50 94 mg/kg (rat)

**Skin irritation or corrosion:** May cause irritation

**Eye irritation or corrosion:** May cause irritation

**Sensitization:** No sensitizing effects known.

#### Germ cell mutagenicity:

May cause genetic defects.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.

#### Carcinogenicity:

May cause cancer.  
IARC-1: Carcinogenic to humans: sufficient evidence of carcinogenicity.

#### Reproductive toxicity:

May damage fertility or the unborn child.  
The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for this substance.

**Specific target organ system toxicity - repeated exposure:** No effects known.

**Specific target organ system toxicity - single exposure:** No effects known.

**Aspiration hazard:** No effects known.

**Subacute to chronic toxicity:** The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.

**Additional toxicological information:** To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

## 12 Ecological information

### Toxicity

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

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

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

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USA

**Product name: Cyclophosphamide monohydrate**

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

**Additional ecological information:**

**General notes:**

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

Avoid transfer into the environment.

**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**

**UN-Number**

**DOT, IMDG, IATA**

UN3464

**UN proper shipping name**

**DOT**

Organophosphorus compound, solid, toxic, n.o.s. (Cyclophosphamide monohydrate)

**IMDG, IATA**

ORGANOPHOSPHORUS COMPOUND, SOLID, TOXIC, N.O.S. (Cyclophosphamide monohydrate)

**Transport hazard class(es)**

**DOT**



**Class**

6.1 Toxic substances.

**Label**

6.1

**Class**

6.1 (T2) Toxic substances

**Label**

6.1

**IMDG, IATA**



**Class**

6.1 Toxic substances.

**Label**

6.1

**Packing group**

**DOT, IMDG, IATA**

III

**Environmental hazards:**

Not applicable.

**Special precautions for user**

**EMS Number:**

Warning: Toxic substances  
F-A,S-A

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

**Transport/Additional information:**

**DOT**

**Marine Pollutant (DOT):**

No

**UN "Model Regulation":**

UN3464, Organophosphorus compound, solid, toxic, n.o.s. (Cyclophosphamide monohydrate), 6.1, III

**15 Regulatory information**

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

**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

**Hazard pictograms**



GHS06 GHS08

**Signal word** Danger

**Hazard statements**

H301 Toxic if swallowed.

H340 May cause genetic defects.

H350 May cause cancer.

H360 May damage fertility or the unborn child.

**Precautionary statements**

P281 Use personal protective equipment as required.

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P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**National regulations**

All components of this product are listed on the Canadian Domestic Substances List (DSL).

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 must be used by or directly under the supervision of a technically qualified individual as defined by TSCA. This product must not be used for commercial purposes or in formulations for commercial purposes.

**SARA Section 313 (specific toxic chemical listings)**

6055-19-2 | Cyclophosphamide monohydrate

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USA

**Product name: Cyclophosphamide monohydrate**

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**California Proposition 65**

**Prop 65 - Chemicals known to cause cancer**

6055-19-2 | Cyclophosphamide monohydrate

**Prop 65 - Developmental toxicity**

6055-19-2 | Cyclophosphamide monohydrate

**Prop 65 - Developmental toxicity, female**

6055-19-2 | Cyclophosphamide monohydrate

**Prop 65 - Developmental toxicity, male**

6055-19-2 | Cyclophosphamide monohydrate

**Information about limitation of use:**

For use only by technically qualified individuals.

Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

**Other regulations, limitations and prohibitive regulations**

**Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006. Substance is not listed.**

**The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.**

Substance is not listed.

**Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not listed.**

**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 SDS:** Global Marketing Department

**Date of preparation / last revision** 11/23/2015 / -

**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)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

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

vPvB: very Persistent and very Bioaccumulative

ACGIH: American Conference of Governmental Industrial Hygienists (USA)

OSHA: Occupational Safety and Health Administration (USA)

NTP: National Toxicology Program (USA)

IARC: International Agency for Research on Cancer

EPA: Environmental Protection Agency (USA)

USA