

Revision number: 2 Revision date: 10/06/2014

1. IDENTIFICATION

Product name: Product code: Cyclophosphamide Monohydrate C2236

For laboratory research purposes.

Not for drug or household use.

Product use: Restrictions on use:

Company:

TCI America 9211 N. Harborgate Street Portland, OR 97203 U.S.A. Telephone: +1-800-423-8616 / +1-503-283-1681 Fax: +1-888-520-1075 / +1-503-283-1987 e-mail: sales-US@TCIchemicals.com www.TCIchemicals.com

2. HAZARD(S) IDENTIFICATION

 OSHA Haz Com: CFR 1910.1200:
 Acute Toxicity - Oral [Category 3] Skin Corrosion/Irritation [Category 2] Germ Cell Mutagenicity [Category 1B] Carcinogenicity [Category 1A] Effects on or Via Lactation

 Signal word:
 Danger!

 Hazard Statement(s):
 Causes skin irritation May cause cancer May cause genetic defects May cause harm to breast-fed children Toxic if swallowed

Pictogram(s) or Symbol(s):



Precautionary Statement(s): [Prevention]

[Response]

[Storage] [Disposal] Transportation Emergencies: Chemtrec 24-Hour +1-800-424-9300 (U.S.A.)

TCI AMERICA

SAFETY DATA SHEET

+1-703-527-3887 (International) **Responsible department:** TCI America Environmental Health Safety and Security +1- 503-286-7624

Emergency telephone number:

TCI America (8:00am - 5:00pm) PST

Chemical Emergencies:

+1-503-286-7624

Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling. Wear protective gloves. Obtain special instructions before use. Do not handle until all safety precautions have

been read and understood. Wear protective gloves, protective clothing, eye protection and face protection. Do not breathe dusts or mists. Avoid contact during pregnancy or while nursing. Wash all exposed skin thoroughly after handling. If swallowed: Immediately call a poison center or doctor. Rinse mouth. If on skin: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and

water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. If exposed: Call a poison center or doctor. If exposed or concerned: Get medical advice or attention. Store locked up.

Dispose of contents and container in accordance with US EPA guidelines for the classification and

determination of hazardous waste listed in 40 CFR 261.3. (See Section 13)

TCI AMERICA

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance Substance Components::	3. COMPOSITION/INFORMATION	UN INGREDIEN IS
Components: Cyclophosphamide Monohydrate Percent: >98.05/41) CAS Number: 6656-19-2 Molecular Wight: 28.10,8/nh) Chemical Formula: C-H-0ChM-OP-H4O Synopyrms: 2.188(2-chinosethyllamino betrahydro-1,3.2-oxazaphosphorin-2-oxide Monohydrate #.FIRST-AID MEASURES Inhalation: Inhalation: Immediately call a poison center or doctor. Effects of exposure (inhalation) to substance may be delayed. Inhalation of vapors or contact with substance will result in contamination and potential harmful effects. Move vicun warm and quet, Treat symptomatically and supporting of the substance, immediately call a poison center or doctor. Effects of exposure (inhalation) to substance may be delayed. Inhalation of vapors or contact with substance will result in contamination and puerital substance, immediately call a poison one or doctor. Effects of exposure (inhalation) to substance may be delayed. Immediately call a poison conter or doctor. Effects of exposure (inhalation) to substance may be delayed. Terat symptomatically and supporting). Ensure that medical personnel are aware of the material (i) imvibed and take precutions to protect. Eye contact: Immediately call a poison conter or doctor. Effects of exposure (inhalation) to substance may be delayed. Eye contact: Immediately call avelocation how working to free t-use. Incase of contact with substance, immediately flush skin with values and puerital is activated the material (i) involved and take precutations to protect themaselyse. Contact ware material metal material activate	Substanco/Mixturo	Substance
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Personal precautions:

Avoid contact with skin, eyes, and clothing. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing (Section 8). Warn unnecessary personnel to move away. Stop leak if you can do it without risk. Ensure adequate ventilation. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6. ACCIDENTAL RELEASE MEASURES		
Personal protective equipment:	Wear eye protection (splash goggles) and face protection (full length face shield). Wear protective clothing (chemical resistant suit and chemical resistant boots). Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear protective gloves (nitrile).	
Emergency procedures:	Prevent dust cloud. Do not clean-up or dispose except under supervision of a specialist. In case of a spill and/or a leak, always shut off any sources of ignition, ventilate the area, and excercise caution. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Warn personnel to move away. Prevent entry into sewers, basements or confined areas; dike if needed.	

Methods and materials for containment and cleaning up:

ELIMINATE all ignition sources (no smoking, flares, sparks, or flames in immediate area). Stop leak if without risk. Ventilate the area. Absorb with an inert material and put the spilled material in an appropriate waste disposal container. Use clean non-sparking tools to collect absorbed material. **Environmental precautions:**

Keep away from living quarters. Do not let product enter drains. Prevent further leakage or spillage if safe to do so. Water runoff can cause environmental damage. Prevent entry into sewers, basements or confined areas; dike if needed.

7. HANDLING AND STORAGE	
Precautions for safe handling:	Avoid inhalation of vapor or mist. Manipulate under an adequate fume hood. Do not ingest. Avoid contact with skin and eyes. Avoid contact - obtain special instructions before use. Avoid prolonged or repeated exposure. Normal measures for preventive fire protection. Avoid exposure - obtain special instructions before use. Good general ventilation should be sufficient to control airborne levels. Keep container dry. Handle and open container with care. Wear suitable protective clothing, gloves and eye/face protection. When using do not eat, drink, or smoke. Keep away from sources of ignition.
Conditions for safe storage:	Store locked up. Keep containers tightly closed in a cool, well-ventilated place. Keep away from incompatibles. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Avoid prolonged storage periods. Store under inert gas (e.g. Argon). Store in refrigerator.
Storage incompatibilities:	Combustible substances, Store away from oxidizing agents

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits:

No data available

Appropriate engineering controls:

Handle only in a fully enclosed system and equipment. Good general ventilation should be sufficient to control airborne levels. Ventilation is normally required when handling or using this product. Eyewash fountains should be provided in areas where there is any possibility that workers could be exposed to the substance. Follow safe industrial engineering/laboratory practices when handling any chemical.

Personal protective equipment

Respiratory protection:	Dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent.
Hand protection:	Wear protective gloves.
Eye protection:	Safety glasses.
Skin and body protection:	Wear protective clothing (chemical resistant suit and chemical resistant boots).

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state (20°C): Form: Color: Odor: Odor threshold:	Solid Crystal - Powder White - Almost white Odorless No data available		
Melting point/freezing point: Boiling point/range: Decomposition temperature: Relative density: Kinematic Viscosity:	51°C (124°F) No data available No data available No data available No data available	pH: Vapor pressure: Vapor density: Dynamic Viscosity:	No data available No data available No data available No data available
Partition coefficient: n-octanol/water (log P _{ow})	0.63	Evaporation rate: (Butyl Acetate = 1)	No data available
Flash point: Flammability (solid, gas):	113°C (235°F) No data available	Autoignition temperature: Flammability or explosive limits: Lower: No data avail Upper: No data avail	
Solubility(ies):			

Water: Slightly soluble Very soluble: Chloroform, Ethanol **TCI AMERICA**

Sc	luble: Ether				
10. STABIL	ITY AND REACTIVITY				
Conditions t ncompatible Hazardous D	f Hazardous Reactions: o avoid: e materials: Decomposition Products:	No hazardous read Air sensitive. Expo Moisture sensitive. Oxidizing agents No data available			Heat sensitive. Light sensitive.
11. TOXICO	DLOGICAL INFORMATION	1			
RTECS Num	ber: RP6157750				
Acute Toxici orl-rat LD50:9			ipr-rat LD50:121	mg/kg	
vn-mus LD5():275 mg/kg				
Skin corrosi No data avail	on/irritation: able				
Serious eye No data avail	damage/irritation: able				
Respiratory No data avail	or skin sensitization: able				
Germ cell m nmo-sat 500	u tagenicity: mg/L/72H (+S9)		cyt-rat-ipr 30 mg/	kg	
nnt-mus-orl 1	I5 mg/kg				
Carcinogeni	city:				
No data avail	able				
IARC:	Group 1 (Carcinogenic to humans).	NTP:	No data available	OSHA:	No data available
Reproductive vn-rat TDLo:	e toxicity: 27500 ug/kg(7-17D preg)		ipr-mus TDLo:40	mg/kg(14D preg)	
orl-rat TDLo:8	38 mg/kg(9W male)				
Dverexposure	elated to exposure:	r death. Skin contac	ntact, Ingestion, Skin contact. t may result in inflammation; d	characterized by itchin	g, scaling, reddening, or occasiona
Potential He	alth Effects: contact may result in irritation.				
Farget organ		No data available			
12. ECOLO	GICAL INFORMATION				
Ecotoxicity					

Fish:	No data available
Crustacea:	No data available
Algae:	No data available
Persistence and degradability:	No data available
Bioaccumulative potential (BCF):	3
Mobillity in soil:	No data available

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12. ECOLOGICAL INFORMAT	ION		
Partition coefficient:	0.63		
n-octanol/water (log Pow)			
Soil adsorption (Koc):	52		
Henry's Law:	1.4 x 10 ⁻⁶		
constant (PaM ³ /mol)			

13. DISPOSAL C	ONSIDERATIONS		
rules and regulation chemical incinerat assistance but dou regulatory complia Waste are listed in water ways, or the		You may be able to dissolvequipped with an afterburner tot replace these laws, nor e according to the law. US for CFR Parts 261. The produ	's responsibility to comply with Federal, State and Local we or mix material with a combustible solvent and burn in a ar and scrubber system. This section is intended to provide does compliance in accordance with this section ensure EPA guidelines for Identification and Listing of Hazardous act should not be allowed to enter the environment, drains,
		d product. Do not re-use em state and local regulations w	pty containers. hen disposing of the substance.
14. TRANSPORT	INFORMATION		
DOT (US) UN number: UN3464	Proper Shipping Name: Organophosphorus compound, solid, toxic, n.o.s.	Class or Division: 6.1 Toxic material.	Packing Group:
IATA UN number: UN3464	Proper Shipping Name: Organophosphorus compound, solid, toxic, n.o.s.	Class or Division: 6.1 Toxic material.	Packing Group: III
IMDG UN number: UN3464	Proper Shipping Name: Organophosphorus compound, solid, toxic, n.o.s.	Class or Division: 6.1 Toxic material.	Packing Group: III
EmS number:	F-A, S-A		

15. REGULATORY INFORMATION

Toxic Substance Control Act (TSCA 8b.):

This product is NOT on the EPA Toxic Substances Control Act (TSCA) inventory. The following notices are required by 40 CFR 720.36 (C) for those products not on the inventory list:

(i) These products are supplied solely for use in research and development by or under the supervision of a technically qualified individual as defined in 40 CFR 720.0 et sec.

(ii) The health risks of these products have not been fully determined. Any information that is or becomes available will be supplied on a SDS sheet.

US Federal Regulations

CERCLA Hazardous substance	and Reportable Quantity:
SARA 313:	Not Listed
SARA 302:	Not Listed

State Regulations

State Right-to-Know

Massachusetts	Not Listed
New Jersey	Not Listed
Pennsylvania	Not Listed
California Proposition 65:	Listed

Other Information

NFPA Rating:

HMIS Classification:

Health:	2	Health:	2
Flammability:	1	Flammability:	1
Instability:	0	Physical:	0

15. REGULATORY INFORMA	TION
International Inventories	
WHMIS hazard class:	D1B: Materials causing immediate and serious toxic effects. (Toxic) D2B: Materials causing other toxic effects. (Toxic)
EC-No:	200-015-4

16. OTHER INFORMATION

Revision date: 10/06/2014 Revision number: 2

TCI chemicals are for research purposes only and are NOT intended for use as drugs, food additives, households, or pesticides. The information herein is believed to be correct, but does not claim to be all inclusive and should be used only as a guide. Neither the above named supplier nor any of its affiliates or subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All chemical reagents must be handled with the recognition that their chemical, physiological, toxicological, and hazardous properties have not been fully investigated or determined. All chemical reagents should be handled only by individuals who are familiar with their potential hazards and who have been fully trained in proper safety, laboratory, and chemical handling procedures. Although certain hazards are described herein, we can not guarantee that these are the only hazards which exist. Our SDS are based only on data available at the time of shipping and are subject to change without notice as new information is obtained. Avoid long storage periods since the product is subject to degradation with age and may become more dangerous or hazardous. It is the responsibility of the user to request updated SDS for products that are stored for extended periods. Disposal of unused product must be undertaken by qualified personnel who are knowledgeable in all applicable regulations and follow all pertinent safety precautions including the use of appropriate protective equipment (e.g. protective goggles, protective clothing, breathing equipment, face mask, fume hood). For proper handling and disposal, always comply with federal, state and local regulations.