



TCI AMERICA

SAFETY DATA SHEET

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Revision number: 1
Revision date: 07/06/2018

1. IDENTIFICATION

Product name: ε-Caprolactam Zone Refined (number of passes:24)
Product code: C0022

Product use: For laboratory research purposes.
Restrictions on use: Not for drug or household use.

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2. HAZARD(S) IDENTIFICATION

OSHA Haz Com: CFR 1910.1200:
WHMIS 2015:

Acute Toxicity - Oral [Category 4]
Acute Toxicity - Dermal [Category 4]
Eye Damage/Irritation [Category 2A]
Specific Target Organ Toxicity (Single Exposure) [Category 1]
Specific Target Organ Toxicity (Single Exposure) [Category 3]
Specific Target Organ Toxicity (Repeated Exposure) [Category 1]

Signal word: Danger!

Hazard Statement(s):
Harmful if swallowed or in contact with skin
Causes serious eye irritation
Causes damage to: Circulatory System Nervous System
May cause respiratory irritation. May cause drowsiness or dizziness.
Causes damage to organs through prolonged or repeated exposure: Respiratory System

Pictogram(s) or Symbol(s):



Precautionary Statement(s):
[Prevention]

[Response]

[Storage]
[Disposal]

Do not breathe dust, fume, mist, vapors or spray. Use only outdoors or in a well-ventilated area. Do not eat, drink or smoke when using this product. Wash hands and face thoroughly after handling. Wear protective gloves, protective clothing, eye protection.
If swallowed: Call a poison center or doctor if you feel unwell. Rinse mouth. If on skin: Wash with plenty of soap and water. Call a poison center or doctor if you feel unwell. Take off contaminated clothing and wash it before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention. If exposed: Call a poison center or doctor.
Store in a well-ventilated place. Keep container tightly closed. Store locked up.
Dispose of contents and container in accordance with local, regional, national regulations (e.g. US: 40 CFR Part 261, EU:91/156/EEC, JP: Waste Disposal and Cleaning Act, etc.).

Hazards not otherwise classified:
[HNOC]

Causes mild skin irritation.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/mixture:	Substance
Components:	ε-Caprolactam Zone Refined (number of passes:24)
Percent:	>99.0%(GC)
CAS RN:	105-60-2
Molecular Weight:	113.16
Chemical Formula:	C ₆ H ₁₁ NO
Synonyms:	2-Ketohexamethyleneimine Zone Refined (number of passes:24) , 2-Oxohexamethyleneimine Zone Refined (number of passes:24) , Cyclohexanoneisooxime Zone Refined (number of passes:24)

4. FIRST-AID MEASURES

Description of first aid measures

Inhalation:	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician.
Skin contact:	Remove/Take off immediately all contaminated clothing. Gently wash with plenty of soap and water. Call a POISON CENTER or doctor/physician.
Eye contact:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Call a POISON CENTER or doctor/physician.
Ingestion:	Call a POISON CENTER or doctor/physician. Rinse mouth.

Symptoms/effects:

Acute:	Dizziness. Redness. Drowsiness.
Delayed:	May have effects on the respiratory tract.

Indication of any immediate medical attention:

Not available.

Notes to physician:

No data available

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:	Dry chemical, foam, water spray, carbon dioxide.
Hazardous combustion products:	These products include: Carbon oxides Nitrogen oxides
Other specific hazards:	Closed containers may explode from heat of a fire.
Advice for firefighters:	Wear self-contained breathing apparatus if possible.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. Keep people away from and upwind of spill/leak. Entry to non-involved personnel should be controlled around the leakage area by roping off, etc.
Environmental precautions:	Prevent product from entering drains.
Methods and materials for containment and cleaning up:	Sweep dust to collect it into an airtight container, taking care not to disperse it. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

7. HANDLING AND STORAGE

Precautions for safe handling:	Handling is performed in a well ventilated place. Wear suitable protective equipment. Prevent dispersion of dust. Wash hands and face thoroughly after handling. Use a closed system if possible. Use a local exhaust if dust or aerosol will be generated. Avoid contact with skin, eyes and clothing.
Conditions for safe storage, including any incompatibilities	
Storage conditions:	Keep container tightly closed. Store in a cool, dark and well-ventilated place. Store locked up. Store away from incompatible materials such as oxidizing agents.
Packaging material:	Comply with laws.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limits:

ACGIH TLV(TWA): 5 mg/m³ (IFV)

Appropriate engineering controls:

Follow safe industrial engineering/laboratory practices when handling any chemical. Install a closed system or local exhaust. Also install safety shower and eye bath.

Personal protective equipment

Respiratory protection:

Dust respirator, self-contained breathing apparatus(SCBA), supplied air respirator, etc. Use respirators approved under appropriate government standards and follow local and national regulations.

Hand protection:

Impervious gloves.

Eye protection:

Safety goggles. A face-shield, if the situation requires.

Skin and body protection:

Impervious protective clothing. Protective boots, if the situation requires.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state (20°C):

Solid

Form:

Crystal - Powder

Colour:

White

Odour:

Unpleasant

Odor threshold:

No data available

Odour threshold:

No data available

Melting point/freezing point:

70°C (158°F)

pH:

No data available

Boiling point/range:

267°C (513°F)

Vapour pressure:

No data available.

Decomposition temperature:

No data available

Vapour density:

3.91

Relative density:

No data available

Dynamic Viscosity:

No data available

Kinematic viscosity:

No data available

Log Pow:

No data available

Evaporation rate(Butyl Acetate=1):

No data available

Flash point:

No data available

Autoignition temperature:

375°C (707°F)

Flammability(solid, gas):

No data available

Flammability or explosive limits:

Lower:

1.4%

Upper:

8%

Solubility(ies):

[Water]

Very soluble (5250g/L, 25°C)

[Other solvents]

Very soluble:

Methanol, Ether, Ethanol

Soluble:

Many organic solvents

10. STABILITY AND REACTIVITY

Reactivity:

No data available

Chemical stability:

Stable under proper conditions.

Possibility of hazardous reactions:

No special reactivity has been reported.

Incompatible materials:

Oxidizing agents, Strong bases

Hazardous decomposition products:

Carbon monoxide, carbon dioxide etc

11. TOXICOLOGICAL INFORMATION

RTECS Number: CM3675000

Acute Toxicity:

ihl-rat LC50:300 mg/m³/2H
orl-rat LD50:1210 mg/kg

ipr-mus LD50:650 mg/kg
skn-rbt LD50:1410 uL/kg

Skin corrosion/irritation:

skn-rbt 500 mg/24H MLD

Serious eye damage/irritation:

eye-rbt 20 mg/24H MOD

Respiratory or skin sensitization:

No data available

Germ cell mutagenicity:

dni-hmn-fbr 1 mmol/L
sln-hmn-lym 25 mmol/L

mno-smc 100 mg/L (+/-S9)

Carcinogenicity:

No data available

IARC: Group 4 (Probably not carcinogenic to humans).

NTP: No data available

OSHA: No data available

Reproductive toxicity:

ihl-rat TClO:125 mg/m³/24H (76D male)
orl-rbt TClO:3450 mg/kg (6-28D preg)

orl-rat TClO:10 g/kg (6-15D preg)

Target organ(s):

Causes damage to: Circulatory System Nervous System

May cause respiratory irritation.

May cause drowsiness or dizziness.

Causes damage to organs through prolonged or repeated exposure: Respiratory System

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Fish: 96h LC50:>100 mg/L (Oryzias latipes)
Crustacea: 48h EC50:>1000 mg/L (Daphnia magna)
Algae: 72h EC50:>1000 mg/L (Selenastrum capricornutum)

Persistence / degradability:

82% (by BOD) , 100% (by HPLC) , 96% (by TOC)

Bioaccumulative potential(BCF):

3.2

Mobility in soil

Log Pow: -0.19
Soil adsorption (Koc): 57
Henry's Law (PaM³/mol): 5.4 x 10⁻⁶

13. DISPOSAL CONSIDERATIONS

Disposal of product:

Recycle to process if possible. It is the generator's responsibility to comply with Federal, State and Local rules and regulations. You may be able to dissolve or mix material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber system. This section is intended to provide assistance but does not replace these laws, nor does compliance in accordance with this section ensure regulatory compliance according to the law. US EPA guidelines for Identification and Listing of Hazardous Waste are listed in 40 CFR Parts 261. The product should not be allowed to enter the environment, drains, water ways, or the soil.

Disposal of container:

Dispose of as unused product. Do not re-use empty containers.

Other considerations:

Observe all federal, state and local regulations when disposing of the substance.

14. TRANSPORT INFORMATION

<u>DOT (US)</u>	Non-hazardous for transportation.
<u>IATA</u>	Non-hazardous for transportation.
<u>IMDG</u>	Non-hazardous for transportation.

15. REGULATORY INFORMATION

Toxic Substance Control Act (TSCA 8b.):

This product is ON the EPA Toxic Substances Control Act (TSCA) inventory.

US Federal Regulations

CERCLA Hazardous substance and Reportable Quantity:

SARA 313:	Not Listed
SARA 302:	Not Listed

State Regulations

State Right-to-Know

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

Other Information

NFPA Rating:

Health:	2
Flammability:	1
Instability:	0

HMIS Classification:

Health:	2
Flammability:	1
Physical:	0

International Inventories

Canada: DSL	On DSL
EC-No:	203-313-2

16. OTHER INFORMATION

Revision date: 07/06/2018

Revision number: 1

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.