

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

1.1. Product Identifier

Product Form: Substance

Product Name: Chloroacetonitrile

CAS No: 107-14-2

Product Code: VOLO10075

Standard InChI: InChI=1S/C2H2CIN/c3-1-2-4/h1H2

1.2. Intended Use of the Product

Use of the substance/mixture: For laboratory research purposes

1.3. Name, Address, and Telephone of the Responsible Party

Manufacturer

Volochem, Inc.
2600 Hilltop Dr.
Bldg B #C211
Richmond, CA 94806

T 510.748.0159

www.volochem.com

1.4. Emergency Telephone Number

Emergency Number : 510-748-0159 (9a-5p M-F)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

Classification (GHS-US)

Flammable liquids (Category 3)
Acute toxicity, Oral (Category 3)
Acute toxicity, Inhalation (Category 3)
Acute toxicity, Dermal (Category 2)
Eye irritation (Category 2A)
Germ cell mutagenicity (Category 1)
Carcinogenicity (Category 2)
Reproductive toxicity (Category 2)
Hazardous to the aquatic environment, Acute (Category 2)
Hazardous to the aquatic environment, Chronic (Category 2)

2.2. Label Elements

GHS-US Labeling

Pictogram(s): GHS02, GHS06, GHS08, GHS09



Signal word: Danger

Hazard statement(s)

H226	Flammable liquid and vapor.
H301	Toxic if swallowed.
H331	Toxic if inhaled.

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H310	Fatal in contact with skin.
H319	Causes serious eye irritation.
H340	May cause genetic defects.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H401	Toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking.
P223	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P262	Do not get in eyes, on skin, or on clothing.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P393+P361+P353	IF ON SKIN: Take off immediately all contaminated clothing. Rinse skin with water or shower.
P310	Immediately call a POISON CENTER/doctor.
P363	Wash contaminated clothing before reuse.
P301+P330+P310	IF SWALLOWED: Rinse mouth. Immediately call a POISON CENTER/doctor/...
P321	Specific treatment.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P311	Call a POISON CENTER/ doctor
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P370+P378	In case of fire: Use alcohol-resistant foam, dry chemical, or carbon dioxide to extinguish.
P391	Collect spillage.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

2.3. Hazards not otherwise classified (HNOC) or not covered by GHS

No additional information available

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Name	Synonym(s)	Product Identifiers
Chloroacetonitrile	None	VOLO10075 CAS No. 107-14-2 EC No. 203-467-0 Index No. 608-008-00-1

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

First-aid Measures General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid Measures After Inhalation: When symptoms occur: go into open air and ventilate suspected area.

First-aid Measures After Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes.

First-aid Measures After Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

First-aid Measures After Ingestion: Rinse mouth. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/Injuries: Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.

Symptoms/Injuries After Inhalation: Cough. Sore throat. Shortness of breath. Labored breathing. Headache. Dizziness. Weakness. Nausea. Symptoms may be delayed.

Symptoms/Injuries After Skin Contact: Redness. Skin burns. Pain.

Symptoms/Injuries After Eye Contact: Pain. Redness. Blurred vision. Blue haze and halo. Loss of vision. Severe deep burns.

Symptoms/Injuries After Ingestion: Abdominal pain. Burning sensation. Shock or collapse.

Chronic Symptoms: The chronic effects of this substance are unknown.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If medical advice is needed, have product container or label at hand. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available. Acute poisoning from cyanogens (nitriles) or poorly soluble salts may not manifest or become life-threatening for several hours after exposure. These patients require a 24-hour observation period. Administer a cyanide antidote if the diagnosis of cyanide toxicity is strongly suspected, without waiting for laboratory confirmation. Available antidotes are hydroxocobalamin (Cyanokit) and sodium thiosulfate and sodium nitrite (Nithiodote). Both are given intravenously.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing Media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Hazardous Combustion Products: Carbon oxides, nitrogen oxides (NOx)

Fire Hazard: Product is flammable. The vapour is heavier than air and may travel along the ground; distant ignition possible.

Explosion Hazard: Product is not explosive, but vapor/air mixtures may form an explosive environment.

5.3. Advice for Firefighters

Firefighting Instructions: Exercise caution when fighting any chemical fire.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection. Wear self contained breathing apparatus for fire fighting if necessary.

5.4. NFPA Rating

Health hazard: 3

Fire: 2

Reactivity Hazard: 0

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SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

6.1.1. For Non-emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Responders

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Ventilate area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Contain and collect as any solid.

Methods for Cleaning Up: Collect spillage. Avoid generation of dust during clean-up of spills. Clear up spills immediately and dispose of waste safely.

6.4. Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the buildup of electrostatic charge. Also see precautionary statements in section 2.2.

7.2. Conditions for Safe Storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3. Specific End Use(s)

For laboratory research purposes

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

Components with workplace control parameters

8.2. Exposure Controls

Appropriate Engineering Controls:

Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Avoid high vapor concentration. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment:

Gloves. Protective goggles. Insufficient ventilation: wear respiratory protection.



Hand Protection:

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye Protection:

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Respiratory Protection:

Where risk assessment shows air-purifying respirators are appropriate use a full-

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face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Skin and body protection:

Complete suit protecting against chemicals. Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures:

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

This recommendation is advisory only and must be evaluated by an Industrial Hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State:	Liquid
Appearance:	Clear, yellow
Odor:	No data available
Odor Threshold:	No data available
pH:	No data available
Relative Evaporation Rate (butylacetate=1):	No data available
Melting Point:	No data available
Boiling Point:	124 - 126 °C (255 - 259 °F)
Flash Point:	54 °C (129 °F) - closed cup
Ignition temperature:	No data available
Auto-ignition Temperature:	No data available
Decomposition Temperature:	No data available
Flammability (solid, gas):	No data available
Vapor Pressure:	20 hPa (15 mmHg) at 30 °C (86 °F)
Relative Vapor Density at 20 °C:	3.02
Relative Density:	1.193 g/mL at 25 °C (77 °F)
Specific Gravity:	No data available
Solubility:	insoluble
Log Pow:	log Pow: 0.45
Log Kow:	No data available
Viscosity, Kinematic:	No data available
Viscosity, Dynamic:	No data available
Explosive Properties:	No data available
Oxidizing Properties:	No data available
Explosive Limits:	No data available
Bulk Density	No data available
Surface Tension	No data available

9.2. Other Information

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SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity	No data available
10.2. Chemical Stability	Stable under recommended storage conditions
10.3. Possibility of Hazardous Reactions	No data available
10.4. Conditions to Avoid	Heat, flames and sparks.
10.5. Incompatible Materials	The substance is a strong base. It reacts violently with acid and is corrosive to aluminium, zinc, copper and their alloys in the presence of moisture. Reacts violently with strong oxidants. Attacks some forms of plastic, rubber and coatings.
10.6. Hazardous Decomposition Products	No data available

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on Toxicological Effects

Acute Toxicity: Oral LD50

No data available

Inhalation LC50

No data available

Dermal LD50

No data available

Other information on acute toxicity

No data available

Skin Corrosion/Irritation:

Skin – rabbit; mild skin irritation.

Serious Eye Damage/Irritation:

Eyes - rabbit

Result: Moderate eye irritation

Respiratory or Skin Sensitization:

No data available

Germ Cell Mutagenicity:

Ames test - *S. typhimurium* - Histidine reversion (Ames)

Human HeLa cell - DNA damage

Human lymphocyte - DNA damage

Hamster ovary - Sister chromatid exchange

Rat - Unscheduled DNA synthesis

Carcinogenicity - mouse - Skin

Tumorigenic: Carcinogenic by RTECS criteria. Skin and Appendages:

Other: Tumors

Carcinogenicity:

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Chloroacetonitrile)

Reproductive Toxicity:

Reproductive toxicity - mouse - Oral Specific Developmental

Abnormalities: Central nervous system. Effects on Embryo or Fetus:

Fetotoxicity (except death, e.g., stunted fetus).

Specific Target Organ Toxicity (Single Exposure):

No data available

Specific Target Organ Toxicity (Repeated Exposure):

No data available

Aspiration Hazard:

No data available

Signs and symptoms of exposure:

Burning sensation, cough, wheezing, laryngitis, shortness of breath headache, nausea, vomiting. May cause cyanosis.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 1.15 - 1.58 mg/l - 96.0 h

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12.2. Persistence and Degradability

No data available.

12.3. Bioaccumulative Potential

No data available

12.4. Mobility in Soil

No data available

12.5. Other Adverse Effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Contact a licensed professional waste disposal service to dispose of this material. Dispose of waste material in accordance with all local, regional, national, and international regulations.

SECTION 14: TRANSPORT INFORMATION

In Accordance With ICAO/IATA/IMDG/DOT

14.1.	UN Number:	2668
14.2.	UN Proper Shipping Name:	Chloroacetonitrile
14.3.	Transport Hazard Class(es):	6.1 (3)
14.4.	Packing Group:	I
14.5.1.	Marine Pollutant:	No
14.5.2.	Reportable Quantity:	No
14.6.1.	Toxic Inhalation Hazard:	Hazard Zone B
14.6.2.	Mode Specific Comments:	See below
14.6.2.1.	Ground Transportation - DOT (US):	None
14.6.2.2.	Marine Transportation – IMDG:	EMS-No: F-A, S-A
14.6.2.3.	Air Transportation - IATA/ICAO:	Forbidden

SECTION 15: REGULATORY INFORMATION

15.1. US Federal Regulations

EPA TSCA Inventory

Listed

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Components

Fire Hazard, Acute Health Hazard

15.2. US State Regulations

California Proposition 65 List 2014

Not listed

Maine Chemicals of High Concern List 2012

Not listed

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Massachusetts Right to Know Hazardous Substance List 2014

Not listed

New Jersey Right to Know Hazardous Substance List 2010

Listed

Pennsylvania Right to Know Hazardous Substance List 2010

Not listed

SECTION 16: OTHER INFORMATION

16.1. Other Classifications

HMIS

Health hazard: 4

Flammability: 2

Physical hazards: 0

16.2. References

International Chemical Safety Card 0844 (Validated October 18, 1999)

Revision date : 1/3/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

Volochem chemicals are for research purposes only and are NOT intended for use as drugs, food additives, household goods, 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 cannot 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.

SDS US (GHS HazCom) - US Only