

Section 1. Product and Company Identification

**Product Name** Malononitrile  
**CAS Number** 109-77-3

**Parchem - fine & specialty chemicals**  
**415 Huguenot Street**  
**New Rochelle, NY 10801**  
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EMERGENCY RESPONSE NUMBER  
CHEMTEL  
Toll Free US & Canada: 1 (800) 255-3924  
All other Origins: 1 (813) 248-0585  
Collect Calls Accepted

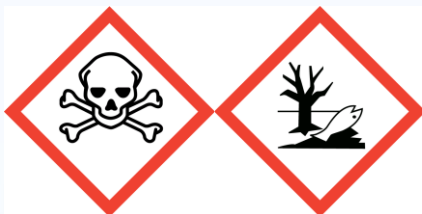
Section 2. Hazards Identification

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

Acute toxicity, Oral (Category 2), H300  
Acute toxicity, Inhalation (Category 3), H331  
Acute toxicity, Dermal (Category 3), H311  
Acute aquatic toxicity (Category 1), H400  
Chronic aquatic toxicity (Category 1), H410

**GHS Label Elements**

**Pictograms:**



**Signal word:** DANGER

**Hazard and precautionary statements**

**Hazard Statements**

H300 Fatal if swallowed.  
H311 + H331 Toxic in contact with skin or if inhaled.  
H410 Very toxic to aquatic life with long lasting effects.

**Precautionary Statements**

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.  
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.



P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.  
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.  
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
P312 Call a POISON CENTER or doctor/physician if you feel unwell.  
P322 Specific measures (see supplemental first aid instructions on this label).  
P330 Rinse mouth.  
P361 Remove/Take off immediately all contaminated clothing.  
P363 Wash contaminated clothing before reuse.  
P391 Collect spillage.  
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.  
P405 Store locked up.  
P501 Dispose of contents/container to an approved waste disposal plant.

**Hazards not otherwise classified (HNOC) or not covered by GHS:** None

Section 3. Composition / Information on Ingredients

**Common Name** Malononitrile  
**Synonym(s)** Dicyanomethane  
**Formula**  $C_3H_2N_2$   
**CAS Number** 109-77-3

COMPONENT	CAS NUMBER	CONCENTRATION
Malononitrile	109-77-3	≤ 100%

Section 4. First Aid Measures

**Description of first-aid measures**

**General advice:** Consult a physician. Show this safety data sheet to the doctor in attendance.  
Move out of dangerous area.

**Inhalation:** If breathed in, move person into fresh air. If not breathing, give artificial respiration.  
Consult a physician.

**Skin Contact:** Wash off with soap and plenty of water. Take victim immediately to hospital.  
Consult a physician.

**Eye Contact:** Flush eyes with water as a precaution.

**Ingestion:** Never give anything by mouth to an unconscious person. Rinse mouth with water.  
Consult a physician.

**Most important symptoms and effects, both acute and delayed:** The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

**Indication of any immediate medical attention and special treatment needed:** No data available

Section 5. Firefighting Measures

**Extinguishing media**

**Suitable extinguishing media:** Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

**Special hazards arising from the substance or mixture:** Carbon oxides, Nitrogen oxides (NO<sub>x</sub>)

**Advice for firefighters:** Wear self-contained breathing apparatus for firefighting if necessary.

**Further information:** No data available

Section 6. Accidental Release Measures

**Personal precautions, protective equipment, and emergency procedures:** Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.

**Environmental precautions:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

**Methods and materials for containment and cleaning up:** Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**Reference to other sections:** For disposal see section 13.

Section 7. Handling and Storage

**Precautions for safe handling:** Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.

**Conditions for safe storage, including any incompatibilities:** Keep container tightly closed in a dry and well-ventilated place.

Section 8. Exposure Controls / Personal Protection

**Control parameters**

**Components with workplace control parameters**

Component	CAS-No.	Value	Control parameters	Basis
Malononitrile	109-77-3	TWA	3.000000 ppm 8.000000 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits



### Exposure Controls

**Appropriate engineering controls:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

### Personal protective equipment

**Eye/face 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).

**Skin 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.

**Body Protection:** Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection:** Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) 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).

**Control of environmental exposure:** Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

## Section 9. Physical and Chemical Properties

### Information on basic physical and chemical properties

**Appearance:** Solid

**Color:** White, yellow, orange, beige

**Odor:** No data available

**Odor Threshold:** No data available

**pH:** No data available

**Melting point/freezing point:** 30 - 32°C (86 - 90°F) - lit.

**Initial boiling point and boiling range:** 220°C (428°F) - lit.

**Flash point (Closed Cup):** 86°C (187°F)

**Evaporation rate:** No data available

**Flammability (solid, gas):** No data available

**Upper/lower flammability or explosive limits:** No data available

**Vapor pressure:** No data available

**Vapor density:** No data available

**Relative density:** 1.049 g/cm<sup>3</sup> at 25°C (77°F)

**Water solubility:** No data available

**Partition coefficient (n-Octanol/water):** No data available

**Auto-ignition temperature:** No data available

**Decomposition temperature:** No data available

**Viscosity:** No data available



**Explosive properties:** No data available

**Oxidizing properties:** No data available

**Other safety information:** No data available

#### Section 10. Stability and Reactivity

**Reactivity:** No data available

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

**Possibility of hazardous reactions:** No data available

**Conditions to avoid:** Do not heat over: 130°C

**Incompatible materials:** Strong oxidizing agents, Strong acids, Strong bases, Strong reducing agents

#### Hazardous decomposition products

**Other decomposition products:** No data available

In the event of fire: see section 5

#### Section 11. Toxicological Information

##### Information on toxicological effects

###### Acute toxicity

LD50 Oral - Mouse: 19 mg/kg

LD50 Dermal - Rat: 350 mg/kg

Remarks: Behavioral: Convulsions or effect on seizure threshold. Behavioral: Excitement.

###### Skin corrosion/irritation

Skin - Rabbit

Result: Mild skin irritation - 4 h

**Serious eye damage/eye irritation:** No data available

**Respiratory or skin sensitization:** No data available

###### Germ cell mutagenicity

Result: Not mutagenic in Ames Test

Histidine reversion (Ames)

###### Carcinogenicity

**IARC:** No component of this product, present at levels greater than or equal to 0.1%, is identified as probable, possible or confirmed human carcinogen by IARC.

**ACGIH:** No component of this product, present at levels greater than or equal to 0.1%, is identified as a carcinogen or potential carcinogen by ACGIH.

**NTP:** No component of this product, present at levels greater than or equal to 0.1%, is identified as a known or anticipated carcinogen by NTP.



**OSHA:** No component of this product, present at levels greater than or equal to 0.1%, is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity:** No data available

**Specific target organ toxicity – single exposure:** No data available

**Specific target organ toxicity – repeated exposure:** No data available

**Aspiration hazard:** No data available

### Additional Information

**RTECS:** 003150000

May be partially metabolized to cyanide in the body., The onset of symptoms is generally delayed pending conversion to cyanide., Headache, Dizziness, Convulsions, Cyanosis, Irregular breathing., Lung irritation, Central nervous system depression

### Section 12. Ecological Information

#### Toxicity

##### Toxicity to fish

LC50 - Pimephales promelas (fathead minnow): 0.51 mg/l (96.0 h)

##### Toxicity to daphnia and other aquatic invertebrates

EC50 - Daphnia magna (Water flea): 21.4 mg/l (24 h)

**Persistence and degradability:** No data available

**Bioaccumulative potential:** No data available

**Mobility in soil:** No data available

**Results of PBT and vPvB assessment:** PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**Other adverse effects:** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life with long lasting effects.

### Section 13. Disposal Considerations

**Waste Treatment Methods:** Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations.

### Section 14. Transport Information

#### DOT (US)

**UN number:** 2647

**Class:** 6.1

**Packing group:** II

**Proper shipping name:** Malononitrile

**Reportable Quantity (RQ):** 1000 lbs



**Poison Inhalation Hazard:** No

**IMDG**

**UN number:** 2647

**Class:** 6.1

**Packing group:** II

**EMS-No:** F-A, S-A

**Proper shipping name:** Malonitrile

**Marine pollutant:** Yes

**IATA**

**UN number:** 2647

**Class:** 6.1

**Packing group:** II

**Proper shipping name:** Malononitrile

Section 15. Regulatory Information

**SARA 302 Components**

The following components are subject to reporting levels established by SARA Title III, Section 302:

Malononitrile (CAS-No. 109-77-3)

Revision Date: 1993-04-24

**SARA 313 Components**

The following components are subject to reporting levels established by SARA Title III, Section 313:

Malononitrile (CAS-No. 109-77-3)

Revision Date: 1993-04-24

**SARA 311/312 Hazards**

Acute Health Hazard

**Massachusetts Right to Know Components**

Malononitrile (CAS-No. 109-77-3)

Revision Date: 1993-04-24

**Pennsylvania Right to Know Components**

Malononitrile (CAS-No. 109-77-3)

Revision Date: 1993-04-24

**New Jersey Right to Know Components**

Malononitrile (CAS-No. 109-77-3)

Revision Date: 1993-04-24

**California Prop. 65 Components:** This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.



**HMIS Rating**

**Health:** 4\*

**Flammability:** 0

**Reactivity:** 0

**NFPA Rating**

**Health:** 2

**Flammability:** 2

**Reactivity:** 0

Section 16. Other Information

**Disclaimer:** The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

REVISION DATE: 4/6/2017

