



Material Safety Data Sheet

Malononitrile

MSDS# 14594

Section 1 - Chemical Product and Company Identification

MSDS Name: Malononitrile  
Catalog Numbers: AC125270000, AC125270050, AC125271000, AC125275000  
Synonyms: MDN; Dicyanomethane.

Company Identification: Acros Organics BVBA  
Janssen Pharmaceuticaaan 3a  
2440 Geel, Belgium

Company Identification: (USA) Acros Organics  
One Reagent Lane  
Fair Lawn, NJ 07410

For information in the US, call: 800-ACROS-01  
For information in Europe, call: +32 14 57 52 11  
Emergency Number, Europe: +32 14 57 52 99  
Emergency Number US: 201-796-7100  
CHEMTREC Phone Number, US: 800-424-9300  
CHEMTREC Phone Number, Europe: 703-527-3887

Section 2 - Composition, Information on Ingredients

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CAS#: 109-77-3  
Chemical Name: Malononitrile  
%: 99  
EINECS#: 203-703-2  
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Hazard Symbols:



Risk Phrases:

T N



23/24/25 50/53

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Warning! Causes eye irritation. Harmful if absorbed through the skin. Harmful if swallowed. May cause skin and respiratory tract irritation. Hazardous polymerization may occur. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Target Organs: Blood, kidneys, central nervous system, liver, eyes.

Potential Health Effects

Eye: Causes eye irritation.

Skin: May cause skin irritation. Toxic in contact with skin. May be metabolized to cyanide which in turn acts by inhibiting cytochrome oxidase impairing cellular respiration.

Ingestion: May cause irritation of the digestive tract. May cause nausea and vomiting. Metabolism may release cyanide, which may result in headache, dizziness, weakness, collapse, unconsciousness and possible death. Toxic if swallowed.

Inhalation: May cause respiratory tract irritation. Toxic if inhaled.

May cause liver and kidney damage. Chronic exposure may cause blood effects. Exposure to high

Chronic: concentrations may cause central nervous system depression. Exposure to small amounts of cyanide compounds over long periods of time is reported to cause loss of appetite, headache, weakness, nausea, dizziness, and symptoms of irritation of the upper respiratory tract and eyes.

#### Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: POISON material. If swallowed, get medical aid immediately. Only induce vomiting if directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes to Physician: Treat symptomatically and supportively.

#### Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

Autoignition Temperature: 365 deg C ( 689.00 deg F)

Flash Point: 112 deg C ( 233.60 deg F)

Explosion Limits: Not available  
Lower:

Explosion Limits: Not available  
Upper:

NFPA Rating: health: 3; flammability: 1; instability: 2;

#### Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Avoid generating dusty conditions. Provide ventilation. Do not let this chemical enter the environment.

#### Section 7 - Handling and Storage

Handling: Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Use only in a chemical fume hood.

Storage: Store in a cool, dry place. Keep containers tightly closed.

#### Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Malononitrile	none listed	3 ppm TWA; 8 mg/m3 TWA	none listed

OSHA Vacated PELs: Malononitrile: None listed

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

Exposure Limits

Personal Protective Equipment

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face

- Eyes: protection regulations in 29 CFR 1910.133 or European Standard EN166.
- Skin: Wear appropriate protective gloves to prevent skin exposure.
- Clothing: Wear appropriate protective clothing to prevent skin exposure.
- Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

#### Section 9 - Physical and Chemical Properties

Physical State: Solid

Color: white - yellow - brown

Odor: None reported.

pH: Not available

Vapor Pressure: 1 hPa @ 50 deg C

Vapor Density: Not available

Evaporation Rate: Not available

Viscosity: Not available

Boiling Point: 220 deg C @ 760 mmHg ( 428.00°F)

Freezing/Melting Point: 30 - 34 deg C

Decomposition Temperature: Not available

Solubility in water: 13.3 g/100mL (20°C)

Specific Gravity/Density: 1.040

Molecular Formula: C3H2N2

Molecular Weight: 66.06

#### Section 10 - Stability and Reactivity

- Chemical Stability: Polymerization may occur upon heating.
- Conditions to Avoid: Incompatible materials, dust generation, excess heat, temperatures above 130°C.
- Incompatibilities with Other Materials: Strong oxidizing agents, strong reducing agents, strong acids, strong bases.
- Hazardous Decomposition Products: Hydrogen cyanide, nitrogen oxides, carbon monoxide, carbon dioxide.
- Hazardous Polymerization: May occur.

#### Section 11 - Toxicological Information

RTECS#: CAS# 109-77-3: OO3150000

RTECS:

**CAS# 109-77-3:** Draize test, rabbit, eye: 5 mg/24H Severe;

Oral, mouse: LD50 = 19 mg/kg;

LD50/LC50: Oral, rat: LD50 = 14 mg/kg;

Skin, rat: LD50 = 350 mg/kg;

Other: Oral, Rat:LD50 = 60.8

Carcinogenicity: Malononitrile - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: The hazards associated with nitriles may be seen in this product. The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

#### Section 12 - Ecological Information

Other: Do not empty into drains.

#### Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

#### Section 14 - Transport Information

US DOT

Shipping Name: MALONONITRILE

Hazard Class: 6.1

UN Number: UN2647

Packing Group: II

Canada TDG

Shipping Name: Not available  
Hazard Class:  
UN Number:  
Packing Group:

USA RQ: CAS# 109-77-3: 1000 lb final RQ; 454 kg final RQ

#### Section 15 - Regulatory Information

##### European/International Regulations

###### European Labeling in Accordance with EC Directives

Hazard Symbols: T N

###### Risk Phrases:

R 23/24/25 Toxic by inhalation, in contact with skin and if swallowed.

R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

###### Safety Phrases:

S 23 Do not inhale gas/fumes/vapour/spray.

S 27 Take off immediately all contaminated clothing.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 60 This material and its container must be disposed of as hazardous waste.

S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

##### WGK (Water Danger/Protection)

CAS# 109-77-3: Not available

##### Canada

CAS# 109-77-3 is listed on Canada's DSL List

Canadian WHMIS Classifications: D1B, D2B, F

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 109-77-3 is listed on Canada's Ingredient Disclosure List

##### US Federal

###### TSCA

CAS# 109-77-3 is listed on the TSCA Inventory.

#### Section 16 - Other Information

MSDS Creation Date: 11/16/1998

Revision #5 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

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