

MATERIAL SAFETY DATA SHEETS

Malononitrile

Chemical Name : Malononitrile

Synonyms: Propanedinitrile, Methylene cyanide, Dicyanomethane, Cyanoacetonitrile

Formula : C₃H₂N₂

Toxic

1. CHEMICAL IDENTITY

Chemical Classification: Trade Name :

CAS No: 109-77-3 **UN No:** 2647

Regulated Identification

Shipping Name :

Codes / Label : Hazardous Waste ID No :

Hazchem Code :

Class 6.1, Toxic

2X

HAZARDOUS INGREDIENTS C.A.S. No. HAZARDOUS INGREDIENTS C.A.S. No.

1

2

3

4

Malononitrile 109-77-3

2. PHYSICAL / CHEMICAL DATA

218-219 Solid White powder or colorless crystals

32 0.200 mm Hg @

25 deg C

2.3 1.33X10⁺⁵ mg/l

@ 25 deg C

1.1910 @ 20 deg C/4 deg C

Soluble in acetic acid, chloroform, acetone, benzene.

Boiling

Pt. °C:

Physical State:

Vapour Pressure

@ 35°C mmHg:

Appearance:

Odour:

Vapour

Density(Air =1):

Solubility in
water at 30°C
g/100ml:

Others:

Specific Gravity (Water =1): pH :

Melting

Pt °C:

3. FIRE / EXPLOSION HAZARD DATA

Flammability : 2.9 112

TDG Flammability: 19

LEL:

UEL:

Flash Point °C in OC:

Flash Point °C in CC:

Autoignition Temperature °C : 365

Explosion sensitivity to impact:

Explosion sensitivity to static Electricity:

Hazardous Combustion Products : When heated to decomposition it emits
toxic fumes of

NO_x and CN- nitrogen oxides and cyanides.

Hazardous Polymerization :

Combustible Liquid:

Flammable Material:

Pyrophoric Material:

Explosive Material:

Oxidiser :

Organic Peroxide :

Corrosive Material

Others:

Stable under normal temperatures and pressures.

Strong oxidizing agents - strong acids - strong bases - strong reducing
agents.

Chemical Stability

Incompatibility with
other material

Reactivity

4. REACTIVITY DATA

:
:
:

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Nitrogen oxides, carbon monoxide, carbon dioxide, nitrog

Hazardous en.
Reaction Products

5. HEALTH HAZARD DATA

Inhalation, Ingestion, Skin and Eyes

Ingestion : _Harmful if swallowed. Causes digestive tract irritation._Skin :

_Causes skin

irritation. Harmful if absorbed through the skin.

Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Routes of entry:

Effects of Exposure / Symptoms:

Emergency Treatment :

19 mg/kg (Mouse)

2 0 0

LD50 (oral-rat) mg/kg:

Permissible

Exposure Limit:

TLV (ACGIH) :

STEL:

Odour Threshold:

NFPA Hazard Health Flammability Reactivity Special

Signals

Inhalation:

Get medical aid immediately. Flush skin with plenty of soap and water for at least 15

minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Skin:

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper

and lower eyelids. Get medical aid immediately.

Eyes:

If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything

by mouth to an unconscious person. Get medical aid immediately.

Ingestion:

LC50 (rat) mg/kg:

6. PREVENTIVE MEASURES

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

Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.

Personal Protective

Equipment

Handling

:

:

Precautions :

Store in a cool, dry, well-ventilated area away from incompatible substances. Keep containers tightly closed.

Storage :

EXPOSURE: First Aid Measures:

7. EMERGENCY / FIRST AID MEASURES

Move container from fire area if you can do it without risk. Wear positive pressure breathing apparatus and special protective clothing

When heated to decomposition, malononitrile emits highly toxic fumes

Fire Extinguishing Media

Special Procedure

Unusual Hazards

FIRE:

:
:
:

Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Inhalation:

Skin: Get medical aid immediately. Flush skin with plenty of soap and water for at least

:

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Clean up spills immediately, using the appropriate protective equipment. Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Avoid generating dusty conditions. Provide ventilation.

Antidotes / Dosages:

Steps To Be Taken

Waste Disposal Method:

SPILLS :

15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

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

Eyes:

If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Ingestion:

8. ADDITIONAL INFORMATION / REFERENCES

9. MANUFACTURERS / SUPPLIERS DATA

Information contained in this material data sheet is believed to be reliable but no representation,

guarantee or warranties of any kind are made as to its accuracy, suitability for a particular application or results to be obtained from them. It is up to the manufacturer/ seller to ensure that the information contained in the material safety data sheet is relevant to the product manufactured / handled or sold by him as the case may be. The Government makes no warranties expressed or implied in the respect of the adequacy of this document for any particular purpose.

Specification:

Appearance: Colorless to light yellow solid

CP 31

Assay 99%

Acidity 0.5%

Intensive heating remains: 0.05%

Usage: As intermediate for organic synthesis pesticide and medicines.

Packing: Net weight 50kg or 200kg iron bucket, protecting against tides.