

Material Safety Data sheet

Diaminomaleonitrile

1. Identification of substance:

Product name: Diaminomaleonitrile

Synonyms : 2,3-Diaminomaleonitrile

Formula: C₄H₄N₄

2. Composition/Data on components:

Chemical characterization:

Description:	(CAS No.)	Purity
Diaminomaleonitrile	(CAS No. 1187-42-4)	98%

Identification number(s):

EINECS Number: 214-697-6

3. Hazards identification

Hazard description: T Toxic

Information pertaining to particular dangers for man and environment

R 25 Toxic if swallowed.

R 36/37/38 Irritating to eyes, respiratory system and skin.

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

Health (acute effects) = 2

Flammability = 1

Reactivity = 1

4. First aid measures

General information

Immediately remove any clothing soiled by the product.

In case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing

Do not induce vomiting; immediately call for medical help.

Seek immediate medical advice.

5. Fire fighting measures

Suitable extinguishing agents

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Nitrogen oxides (NO_x)

Hydrogen cyanide (HCN)

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6. Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Other information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7. Handling and storage

Handling

Information for safe handling:

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

Keep ignition sources away.

Storage

Requirements to be met by storerooms and receptacles:

No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

Store under lock and key and with access restricted to technical experts or their assistants only.

8. Exposure controls and personal protection

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Not required.

Additional information: No data

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands:

Impervious gloves

Check protective gloves prior to each use for their proper condition.

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses

Body protection: Protective work clothing.

9. Physical and chemical properties:

General Information

Form: Crystalline powder

Odor: Not determined

	Value/Range	Unit	Method
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Change in condition

Melting point/Melting range: 178-179 ° C

Boiling point/Boiling range: Not determined

Sublimation temperature / start: Not determined

Flash point: Not applicable

Ignition temperature: Not determined

Decomposition temperature: Not determined

Danger of explosion:

Product does not present an explosion hazard.

Explosion limits:

Lower: Not determined

Upper: Not determined

Pressure: Not determined

Density: Not determined

Solubility in / Miscibility with

Water: Not determined

10. Stability and reactivity

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided: Oxidizing agents

Dangerous reactions No dangerous reactions known

Dangerous products of decomposition:

Carbon monoxide and carbon dioxide

Nitrogen oxides

Hydrogen cyanide (prussic acid)

11. Toxicological information

Toxic toxicity:

Primary irritant effect:

on the skin: Irritating to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: No sensitizing effects known.

Subacute to chronic toxicity:

Many nitriles resemble cyanides in toxicity. Exposure to nitriles may cause increased salivation,

flushing of the face, eye and respiratory tract irritation, shallow respiration, nausea, vomiting,

weakness, headache and diarrhea. Jaundice, anemia, and leucocytosis has been reported in

some cases. Some are suspected carcinogens, teratogens or mutagens.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC,

NIH, OSHA or ACGIH.

12. Ecological information:

General notes:

Do not allow material to be released to the environment without proper governmental permits.

13. Disposal considerations

Product:

Recommendation

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation:

Disposal must be made according to official regulations.

14. Transport information

DOT regulations:

Hazard class: 6.1

Identification number: UN3439

Packing group: III

Proper shipping name (technical name): NITRILES, TOXIC, N.O.S. (Diaminomaleonitrile)

Label: 6.1

Land transport ADR/RID (cross-border)

ADR/RID class: 6.1 (T1) Toxic substances

Danger code (Kemler): 60

UN-Number: 3439

Packaging group: III

Description of goods: 3276 NITRILES, TOXIC, N.O.S. (Diaminomaleonitrile)

Maritime transport IMDG:

IMDG Class: 6.1

UN Number: 3439

Label: 6.1

Packaging group: III

Proper shipping name: NITRILES, TOXIC, N.O.S. (Diaminomaleonitrile)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 6.1

UN/ID Number: 3439

Label: 6.1

Packaging group: III

Proper shipping name: NITRILES, TOXIC, N.O.S. (Diaminomaleonitrile)

15. Regulations

Product related hazard informations:

Hazard symbols: T Toxic

Risk phrases:

25 Toxic if swallowed.

36/37/38 Irritating to eyes, respiratory system and skin.

Safety phrases:

20 When using do not eat or drink.

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

36/37 Wear suitable protective clothing and gloves.

45 In case of accident or if you feel unwell, seek medical advice immediately.

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

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic

Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Non-Domestic Substances List (NDSL).

Information about limitation of use:

For use only by technically qualified individuals.

Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.