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ESTD.1976 MULTI CHEM YOUR CHEMICAL PARTNER

SAFETY DATA SHEET

Malononitrile

SECTION 1: Identification of the substance/mixture and of the company/undertaking Trade name:

1.1 Product identifier:	
CAS Number:	109-77-3
EC number:	203-703-2
1.2 SYNONYMS	2-Cyanopropionitrile; 2-Cyano-2-propionitrile; 1,3-Dicyanopropane; Propanedinitrile

SECTION 2: Hazards identification:

2.1 Classification of the substance or mixture:	Classification according to Regulation (EC) No 1272/2008 The substance is classified according to the CLP and GHS regulation.
2.2 Label elements:	Labelling according to Regulation (EC) No 1272/2008
Hazard Pictograms:	
Signal Word:	Danger
Hazard statements:	**H300** Fatal if swallowed. **H311 + H331** Toxic in contact with skin or if inhaled. **H317** May cause an allergic skin reaction. **H319** Causes serious eye irritation. H400 Very toxic to aquatic life. **H410** Very toxic to aquatic life with long lasting effects.
Precautionary Statements:	**P261** Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray. **P264** Wash skin thoroughly after handling. **P273** Avoid release to the environment. **P280** Wear protective gloves/ protective clothing/ eye protection/ face protection. **P301 + P310 + P330** IF SWALLOWED: Immediately call a

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	POISON CENTER/doctor. Rinse mouth. **P302 + P352 + P312** IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell
2.3 Other hazards:	
Inhalation:	Coughing, difficulty breathing, dizziness, headache, and nausea.
Ingestion:	Nausea, vomiting, abdominal pain, dizziness, confusion, and seizures.
Skin Contact:	Redness, irritation, blistering, or pain at the site of contact.
Eye contact:	Pain, redness, watering, and potential long-term damage to vision if not treated promptly.
Chronic Exposure:	Fatigue, headaches, dizziness, nausea, liver or kidney impairment, and neurological symptoms such as tremors or memory loss.
Aggravation of pre-existing conditions :	Worsening of existing conditions like asthma or chronic lung conditions, increased sensitivity to toxic effects on the liver or kidneys.

SECTION 3: Composition/information on ingredients

3.1 Chemical characterisation:	Substances
CAS No:	Description: 109-77-3 Malonotrile
Identification number(s):	EC number: 203-703-2

SECTION 4: First aid measures

4.1 Description of first aid measures	
General information:	
After inhalation:	Move to fresh air. Consult a physician after significant exposure. If unconscious, place in recovery position and seek medical advice. If breathing is irregular or stopped, administer artificial

	respiration. Keep respiratory tract clear
After skin contact:	After contact with skin, wash immediately with plenty of soap and water. If on clothes, remove clothes. In the case of skin irritation or allergic reactions see a physician.
After eye contact:	Rinse immediately with plenty of lukewarm water, also under the eyelids, for at least 15 minutes. Call a physician immediately. Remove contact lenses. Keep eye wide open while rinsing. Protect unharmed eye.
After swallowing:	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Take victim immediately to hospital.
4.2 Most important symptoms and effects, both acute and delayed:	no data available
4.3 Indication of any immediate medical attention and special treatment needed:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media	Water spray Alcohol-resistant foam Dry chemical
5.2 Special hazards arising from the substance or mixture	Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Heating or fire can release toxic gas. Do not allow run-off from fire fighting to enter drains or water courses.
5.3 Advice for firefighters	In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

5.4 further information	Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures	Use personal protective equipment. Avoid dust formation. In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit
6.2 Environmental precautions:	Prevent product from entering drains. Prevent further leakage or spillage if safe to do so.
6.3 Methods and material for containment and cleaning up:	Pick up and arrange disposal without creating dust. Shovel into suitable container for disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling	Avoid formation of respirable particles. Do not breathe vapours/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. Smoking, eating and drinking should be prohibited in the application area. Provide sufficient air exchange and/or exhaust in work rooms. Dispose of rinse water in accordance with local and national regulations.
7.2 Conditions for safe storage, including any incompatibilities	Keep container tightly closed. Keep in a well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Electrical installations / working materials must comply with the

	technological safety standards. To maintain product quality, do not store in heat or direct sunlight.
Requirements to be met by storerooms and receptacles:	no data available
7.3 Specific end uses	no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters	
Additional information about design of technical facilities:	no data available
8.2 Exposure controls	
Appropriate engineering controls	Refill and handle product only in closed system.
Personal protective equipment:	no data available
General protective and hygienic measures:	no data available
Respiratory protection:	In the case of dust or aerosol formation use respirator with an approved filter. Half mask with a particle filter P2 (EN 143)
Protection of hands:	Wear protective gloves. Break through time : > 480 min The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.
Eye protection:	Safety glasses with side-shields conforming to EN166 Wear face-shield and protective suit for abnormal processing problems.
Protection of Body:	Choose body protection according to the amount and concentration of the dangerous substance at the work place. Dust impervious protective suit

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties General Information	
Appearance: Form:	molten
Colour:	White
Odour:	mild
pH-value:	3 - 5 Concentration: 90,9 g/l
Melting point/Melting range:	min. 31 °C
Boiling point/Boiling range:	218 - 219 °C
Flammability (solid, gaseous):	no data available
Ignition temperature:	No data available
Decomposition temperature:	No data available
Self-igniting:	No data available
Flash point:	> 86 °C
Danger of explosion:	No data available
Explosion limits: Lower:	No data available
Explosion limits: Upper:	No data available
Vapour pressure:	1 hPa (50 °C)
Density at 20 °C:	1.034 g/cm³
Relative density:	0.95 g/cm³
Vapour density:	No data available
Evaporation rate:	Not applicable
Solubility in / Miscibility with- ·water at 20 °C:	236.8 g/l
Partition coefficient:(n-octanol/water)	No data available
Viscosity:	No data available

SECTION 10: Stability and reactivity

10.1 Reactivity	No decomposition if stored and applied as directed.
10.2 Chemical stability	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	Spontaneous decomposition/polymerisation may occur when in contact with strong bases. Spontaneous, violent decomposition above 100 °C possible.
10.4 Conditions to avoid	Heat

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10.5 Incompatible materials	Strong acids and strong bases Oxidizing agents
10.6 Hazardous decomposition products	No decomposition if used as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects	
Acute Toxicity:	**LD50 (Rat):** 14 mg/kg Method: DOT **LD50 (Rat):** 1 662 mg/kg Method: OECD Test Guideline 402 GLP: yes
Skin corrosion/Irritation:	Species: Rabbit Exposure time: 4 h Method: DOT Result: Mild skin irritation
Serious eye damage/irritation:	Species: Rabbit Assessment: Eye irritation Result: Severe eye irritation
Respiratory damage/irritation:	Test Type: Magnusson & Kligman Species: Guinea pig Assessment: May cause sensitisation by skin contact. Method: OECD Test Guideline 406 Result: Sensitising GLP: yes
Ingestion:	No data available
Germ cell mutagenicity:	Test Type: Ames test Species: Salmonella typhimurium Method: OECD Test Guideline 471 Result: negative GLP: yes
Carcinogenicity:	No data available
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
Signs and Symptoms of Exposure:	Refer section 2.3
11.2 Additional toxicological information	
Aquatic Toxicity:	No data available
Biodegradability:	No data available

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SECTION 12: Ecological information

12.1 Toxicity **Aquatic toxicity:**	LC50 (Pimephales promelas (fathead minnow)): 0,56 mg/l Exposure time: 96 h EC50 (Daphnia magna (Water flea)): 21,4 mg/l Exposure time: 24 h Test Type: Immobilization Method: OECD Test Guideline 202 GLP: yes
12.2 Persistence and degradability:	No data available
12.3 Bioaccumulative potential:	Test Type: OECD Screening Test Result: Not readily biodegradable. Biodegradation: 3 % Exposure time: 28 d Method: OECD Test Guideline 301E GLP: yes
12.4 Mobility in soil:	No data available
12.5 Other adverse effects	No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods	
Uncleaned packaging **Recommendation:**	Dispose of contents/container in accordance with local regulation. Contact waste disposal services. Do not dispose of waste into sewer. The product should not be allowed to enter drains, water courses or the soil.
Recommended cleansing agents:	Water (with caution); Organic Solvents; Isopropyl Alcohol (IPA); Commercial Laboratory Cleaning Solutions; Absorbent Materials for Spills; Surface Wipes or Cloths;

SECTION 14: Transport information

14.1 UN-Number · ADR, ADN, IMDG, IATA:	2647
14.2 UN proper shipping name · ADR, ADN, IMDG, IATA:	Malononitrile
14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA :	6.1

14.4 Packing group · ADR, IMDG, IATA:	II
14.5 Environmental hazards:	no
14.6 Special precautions for user	none

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Directive 2012/18/EU	Directive 2012/18/EU, under that this substance is classified as harmful substances
Named dangerous substances	This substance is listed in the directive.
15.2 Chemical safety assessment:	Chemical assessment has been carried out under **REACH** regulation.

SECTION 16: Other information

The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product