



MOPS

Safety Data Sheet

Version 1.1
Revision date 11/30/2011/LM-IA

SECTION 1. Product and company identification

Chemical type : Substance
Substance name : MOPS
CAS No. : 1132-61-2
Product code : RC-072
Formula : C7H15NO4S
Synonyms : 3-(N-morpholino)propanesulfonic acid / 3-(N-morpholino)propanesulphonic acid / 3-morpholinopropanesulphonic acid / 4-morpholinepropanesulfonic acid / MOPS / MOPS, DNase, RNase, protease free / morpholinepropanesulfonic acid / N-(3-sulfopropyl)morpholine / WAS 15
Company identification : G-Biosciences/ Geno Technology, Inc.
9800 Page Avenue
St. Louis, MO 63312-1429, USA
Tel.1-800-628-7730
<http://www.GBiosciences.com>
Emergency number : Chemtrec **1-800-424-9300** (USA/Canada), **+1-703-527-3887** (Intl)

SECTION: 2. Hazards identification

2.1. Emergency Overview

Physical state : Solid
Appearance : Crystalline solid. Crystalline powder
Colour : White to off-white
Odour : Odourless

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2.2. OSHA Regulatory Status

No additional information available

2.3. Potential health effects

Symptoms/injuries after inhalation : Irritation of the respiratory tract. Irritation of the nasal mucous membranes.
Symptoms/injuries after skin contact : Tingling/irritation of the skin.
Symptoms/injuries after eye contact : Irritation of the eye tissue.

2.4. Potential environmental effects

No additional information available

SECTION: 3. Composition/information on ingredients

Name	CAS No.	%
MOPS	1132-61-2	100

4.1. First aid procedures

First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.
First-aid measures after inhalation : Remove the victim into fresh air.
First-aid measures after skin contact : Wash immediately with lots of water (15 minutes)/shower. Soap may be used.
First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Take victim to an ophthalmologist. Do not apply neutralizing agents.
First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Ingestion of large quantities: immediately to hospital. Call Poison Information Centre (www.big.be/antigif.htm).

4.2. Note to physicians

No additional information available

SECTION: 5. Firefighting measures

5.1. Flammable properties

Fire hazard : DIRECT FIRE HAZARD. Combustible. In finely divided state: increased fire hazard. INDIRECT FIRE HAZARD. Temperature above flashpoint: higher fire/explosion hazard.

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Explosion hazard	: DIRECT EXPLOSION HAZARD. Its dust is explosive with air. INDIRECT EXPLOSION HAZARD. Dust cloud can be ignited by a spark.
Reactivity	: On heating: release of carcinogenic products. On burning: release of toxic and corrosive gases/vapours (nitrous vapours, sulphur oxides, carbon monoxide - carbon dioxide).

5.1. Extinguishing media

Suitable extinguishing media	: Water spray. Polyvalent foam. Alcohol-resistant foam. ABC powder. Carbon dioxide.
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5.3. Protection for firefighters

Firefighting instructions	: Dilute toxic gases with water spray. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it.
Protection during firefighting	: Heat/fire exposure: compressed air/oxygen apparatus. Heat/fire exposure: gas-tight suit.

SECTION: 6. Accidental release measures

6.1. Personal precautions

6.1.1. For non-emergency personnel

Protective equipment	: Gloves. Face-shield. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. Dust cloud production: dust-tight suit. See "Material-Handling" to select protective clothing.
Emergency procedures	: Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

6.3. Methods for containment

For containment	: Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Dam up the solid spill. Knock down/dilute dust cloud with water spray. Provide equipment/receptacles with earthing. Powdered form: no compressed air for pumping over spills.
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6.4. Methods for clean up

Methods for cleaning up	: Stop dust cloud by humidifying. Scoop solid spill into closing containers. See "Material-handling" for suitable container materials. Powdered: do not use compressed air for pumping over spills. Carefully collect the spill/leftovers. Clean contaminated surfaces with a soap solution. Wash clothing and equipment after handling.
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6.5. Other information

No additional information available

6.6. Spill or leak statements by type of chemical

No additional information available

SECTION: 7. Handling and storage

7.1. Handling

Precautions for safe handling	: Comply with the legal requirements. Clean contaminated clothing. Do not discharge the waste into the drain. Powdered form: no compressed air for pumping over. Avoid raising dust. Take precautions against electrostatic charges. Keep away from naked flames/heat. Finely divided: spark- and explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Reduce/avoid exposure and/or contact. Keep container tightly closed. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.
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7.2. Storage

Heat-ignition	: KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
Prohibitions on mixed storage	: KEEP SUBSTANCE AWAY FROM: oxidizing agents. (strong) bases.
Storage area	: Store in a dry area. Keep container in a well-ventilated place. Store at room temperature. Keep out of direct sunlight. Meet the legal requirements.
Special rules on packaging	: SPECIAL REQUIREMENTS: closing. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	: SUITABLE MATERIAL: plastics.

SECTION: 8. Exposure controls/personal protection

8.1. Exposure guidelines

No additional information available

8.2. Engineering controls

No additional information available

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8.3. Personal protective equipment (PPE)

Materials for protective clothing	: GIVE GOOD RESISTANCE: nitrile rubber, plastics.
Hand protection	: Gloves.
Eye protection	: Face shield. In case of dust production: protective goggles.
Skin and body protection	: Protective clothing. In case of dust production: head/neck protection. In case of dust production: dustproof clothing.
Respiratory protection	: Dust production: dust mask with filter type P2.

SECTION: 9. Physical and chemical properties

Physical state	: Solid
Appearance	: Crystalline solid. Crystalline powder.
Molecular mass	: 209.26 g/mol
Colour	: White to off-white.
Odour	: Odourless.
Odour threshold	: No data available
pH	: 2.5 - 4
pH solution	: 21 %
Melting point	: 277 °C
Solidification point	: No data available
Boiling point	: Not applicable
Flash point	: 116 °C
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosive limits	: No data available
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: No data available
Solubility	: Soluble in water. Water: 100 g/100ml Ethanol: < 10 g/100ml
Log Pow	: No data available
Self ignition temperature	: No data available
Decomposition temperature	: 277 °C
Viscosity	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Other properties	: Substance has acid reaction.

SECTION: 10. Stability and reactivity

10.1. Chemical stability

On heating: release of carcinogenic products. On burning: release of toxic and corrosive gases/vapours (nitrous vapours, sulphur oxides, carbon monoxide - carbon dioxide).

Stable under normal conditions.

10.2. Conditions to avoid

No additional information available

10.3. Incompatible materials

No additional information available

10.4. Hazardous decomposition products

No additional information available

10.5. Possibility of hazardous reactions

No additional information available

SECTION: 11. Toxicological information

Information on toxicological effects

Acute toxicity	: Not classified
Skin corrosion/irritation	: Causes skin irritation. pH: 2.5 - 4

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Serious eye damage/irritation	: Causes serious eye irritation. pH: 2.5 - 4
Respiratory or skin sensitisation	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: May cause respiratory irritation.
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified

SECTION: 12. Ecological information

12.1 Ecotoxicity

No additional information available

12.2. 12.2. Persistence and degradability

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Persistence and degradability	Biodegradability in water: no data available.
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12.3. Bioaccumulation/Accumulation

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Bioaccumulative potential	No bioaccumulation data available.
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12.4. Mobility in environmental media

No additional information available

12.6. Other adverse effects

No additional information available

SECTION: 13. Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations	: Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber.
Additional information	: Hazardous waste (91/689/EEC).

SECTION: 14. Transport information

14.1. Basic shipping description

No additional information available

14.2 Additional information

Other information	: No supplementary information available.
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State during transport (ADR-RID)	: No data available.
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Overland transport

No additional information available

Transport by sea

No additional information available

Air transport

No additional information available

SECTION: 15. Regulatory information

15.1. US Federal regulations

No additional information available

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

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Classification according to Regulation (EC) No. 1272/2008 [CLP]

Eye Irrit. 2 H319

STOT SE 3 H335

Skin Irrit. 2 H315

Full text of H-phrases: see section 16.

Classification according to Directive 67/548/EEC or 1999/45/EC

Xi; R36/37/38

Full text of R-phrases: see section 16.

15.2.2. National regulations

No additional information available

15.3. US State regulations

No additional information available

SECTION: 16. Other information

NFPA health hazard

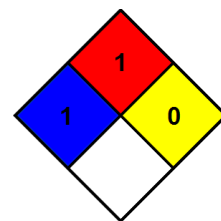
: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.

NFPA fire hazard

: 1 - Must be preheated before ignition can occur.

NFPA reactivity

: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

No additional information available

SDS US (ANSI) GBiosciences