



MATERIAL SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 08/23/2013

Version 1.1

SECTION 1. Identification

Product identifier

Product number 806851
Product name 1-Nitropropane for synthesis

Relevant identified uses of the substance or mixture and uses advised against

Identified uses Chemical for synthesis

Details of the supplier of the safety data sheet

Company EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | SDS Phone Support: +1-978-715-1335 | General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)

Emergency telephone 800-424-9300 CHEMTREC (USA)
+1-703-527-3887 CHEMTREC (International)
24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification

Flammable liquid, Category 3, H226
Acute toxicity, Category 4, Inhalation, H332
Acute toxicity, Category 4, Dermal, H312
Acute toxicity, Category 4, Oral, H302

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms



Signal Word
Warning

Hazard Statements

H226 Flammable liquid and vapor.
H302 + H312 + H332 Harmful if swallowed, in contact with skin or if inhaled.

Precautionary Statements

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P210 Keep away from heat.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P309 + P310 IF exposed or if you feel unwell: Immediately call a POISON CENTER or doctor/physician.

OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula	CH ₃ CH ₂ CH ₂ NO ₂	C ₃ H ₇ NO ₂ (Hill)
CAS-No.	108-03-2	
Molar mass	89.09 g/mol	

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

1-nitropropane (>= 90 % - <= 100 %)

108-03-2

SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

Skin contact

After skin contact: wash off with plenty of water. Remove contaminated clothing. Get medical attention.

Eye contact

After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist if necessary.

Ingestion

After swallowing: immediately make victim drink water (two glasses at most). Subsequently administer: activated charcoal (20 - 40 g in 10% slurry). Consult a physician.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

irritant effects, Cough, Shortness of breath, Drowsiness, drowsiness, ataxia (impaired locomotor coordination)

Indication of any immediate medical attention and special treatment needed

Sodium sulfate (1 tablespoon/1/4 l water).

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SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂), Foam, Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Combustible material, Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapors possible in the event of fire.

Fire may cause evolution of:

nitrous gases

Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

Suppress (knock down) gases/vapors/mists with a water spray jet.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapors, aerosols.

Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

Do not empty into drains. Risk of explosion.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling

Work under hood. Do not inhale substance/mixture.

Avoid generation of vapors/aerosols.

Observe label precautions.

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Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Conditions for safe storage, including any incompatibilities

Keep away from heat and sources of ignition. Keep container tightly closed in a dry and well-ventilated place.

Store at +15°C to +25°C (+59°F to +77°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>1-nitropropane 108-03-2</i>			
ACGIH	Time Weighted Average (TWA):	25 ppm	
NIOSH/GUIDE	Recommended exposure limit (REL):	25 ppm 90 mg/m ³	
OSHA_TRANS	PEL:	25 ppm 90 mg/m ³	
Z1A	Time Weighted Average (TWA):	25 ppm 90 mg/m ³	

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

Eye/face protection

Safety glasses

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:

Flame retardant antistatic protective clothing

Respiratory protection

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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SECTION 9. Physical and chemical properties

Physical state	liquid
Color	yellow
Odor	ether-like
Odor Threshold	No information available.
pH	6.0 at 0.9 g/l 68 °F (20 °C)
Melting point	-108 °C
Boiling point/boiling range	268 - 270 °F (131 - 132 °C) at 1,013 hPa
Flash point	97 °F (36 °C)
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	2.2 %(V)
Upper explosion limit	11.0 %(V)
Vapor pressure	7.6 hPa at 68 °F (20 °C)
Relative vapor density	3.1
Relative density	0.99 g/cm ³ at 68 °F (20 °C)
Water solubility	14 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water	log Pow: 0.87 (experimental) (Lit.) Bioaccumulation is not expected (log Pow <1).
Autoignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	0.790 mPa.s at 77 °F (25 °C)

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Explosive properties No information available.

Ignition temperature 788 °F (420 °C)

SECTION 10. Stability and reactivity

Reactivity

See below

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

Amines, Bases, strong alkalis, nitrates, Oxidizing agents, Peroxides, mercury oxide, nitrous acid, Strong acids, Heavy metal salts, metallic oxides, silver oxide, Impurities

Risk of ignition or formation of flammable gases or vapors with:

carbon, carbon/soot

Exothermic reaction with:

Hydrocarbons, fuming sulfuric acid

Risk of explosion with:

Conditions to avoid

Forms explosive mixtures with air on heating.

Heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

Incompatible materials

rubber, various plastics, Copper, Copper alloys

Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Inhalation, Eye contact, Skin contact

Target Organs

Eyes

cardiovascular system

Liver

Kidneys

Acute oral toxicity

LD50 rat: 455 mg/kg (RTECS)

absorption

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Acute inhalation toxicity

LC50 rat: 11.02 mg/l; 1 h (IUCLID)

Symptoms: mucosal irritations, Cough, Shortness of breath, absorption, After uptake of large quantities:, Lung edema

Acute dermal toxicity

LD50 rabbit: > 2,000 mg/kg
(IUCLID)

absorption

Skin irritation

rabbit

Result: No irritation
(IUCLID)

Eye irritation

rabbit

Result: No eye irritation
(IUCLID)

Sensitization

Sensitization test: guinea pig

Result: negative
(IUCLID)

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 473

Specific target organ systemic toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or

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equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

Systemic effects:

After absorption:

Drowsiness, ataxia (impaired locomotor coordination), drowsiness, Risk of methemoglobin formation.

Damage to:

Liver, Kidney

Further data:

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

LC50 Danio rerio (zebra fish): 205 mg/l; 48 h

OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates

EC50 Daphnia magna (Water flea): 258 mg/l; 24 h

OECD Test Guideline 202

Toxicity to algae

IC50 Desmodesmus subspicatus (green algae): 98 mg/l; 72 h

OECD Test Guideline 201

Persistence and degradability

Biodegradability

45 %; 28 d

OECD Test Guideline 301D

Not readily biodegradable.

Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 0.87

(experimental)

(Lit.) Bioaccumulation is not expected (log Pow <1).

Mobility in soil

No information available.

Additional ecological information

Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

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SECTION 14. Transport information

Land transport (DOT)

UN number UN 2608
Proper shipping name NITROPROPANES
Class 3
Packing group III
Environmentally hazardous --

Air transport (IATA)

UN number UN 2608
Proper shipping name NITROPROPANES
Class 3
Packing group III
Environmentally hazardous --
Special precautions for user no

Sea transport (IMDG)

UN number UN 2608
Proper shipping name NITROPROPANES
Class 3
Packing group III
Environmentally hazardous --
Special precautions for user yes
EmS F-E S-D

SECTION 15. Regulatory information

United States of America

OSHA Hazards

Flammable Liquid
Toxic by ingestion
Target organ effects

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

SARA 311/312 Hazards

Fire Hazard
Acute Health Hazard
Chronic Health Hazard

SARA 313

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 302

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Product name

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SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

Ingredients

1-nitropropane

Pennsylvania Right To Know

Ingredients

1-nitropropane

New Jersey Right To Know

Ingredients

1-nitropropane

California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL.

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

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Full text of H-Statements referred to under sections 2 and 3.

H226	Flammable liquid and vapor.
H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 08/23/2013

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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