



MATERIAL SAFETY DATA SHEET

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

Date of issue: 02/05/2013

Version 1.0

SECTION 1. Identification

Product identifier

Product number	820894
Product name	Nitromethane for synthesis

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

Identified uses	Chemical for synthesis
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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) e-mail: mm_sds@merckgroup.com
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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SECTION 2. Hazards identification

GHS Classification

Flammable liquid, Category 3, H226
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 Harmful if swallowed.

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Precautionary Statements

P210 Keep away from heat.

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 NO ₂ (Hill)
CAS-No.	75-52-5
Molar mass	61.04 g/mol

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

nitromethane (>= 90 % - <= 100 %)

75-52-5

SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air. Consult doctor if feeling unwell.

Skin contact

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

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). Consult a physician.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

irritant effects, Diarrhea, Nausea, Vomiting

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂), Foam, Dry powder

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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.

Avoid shock and friction.

Vapors may form explosive mixtures with air.

Forms explosive mixtures with air at elevated temperatures.

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

Cool closed containers exposed to fire with water spray. Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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

Observe label precautions.

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

Tightly closed and away from sources of ignition and heat. Observe national regulations.

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

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SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>nitromethane 75-52-5</i>			
ACGIH	Time Weighted Average (TWA):	20 ppm	
OSHA_TRANS	PEL:	100 ppm 250 mg/m ³	
Z1A	Time Weighted Average (TWA):	100 ppm 250 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:

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.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	characteristic
Odor Threshold	No information available.

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pH	6.4 at 0.6 g/l 68 °F (20 °C)
Melting point	-29 °C
Boiling point/boiling range	214.2 °F (101.2 °C) at 1,013 hPa
Flash point	96.1 °F (35.6 °C) Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	7.3 %(V)
Upper explosion limit	63.0 %(V)
Vapor pressure	36.4 hPa at 68 °F (20 °C)
Relative vapor density	2.11
Relative density	1.14 g/cm ³ at 68 °F (20 °C)
Water solubility	105 g/l at 68 °F (20 °C)
Partition coefficient: n-octanol/water	log Pow: -0.35 (experimental) (Lit.) Bioaccumulation is not expected (log Pow <1).
Autoignition temperature	No information available.
Decomposition temperature	> 122 °F (> 50 °C)
Viscosity, dynamic	0.61 mPa.s at 77 °F (25 °C)
Explosive properties	No information available.
Ignition temperature	784 °F (418 °C)

SECTION 10. Stability and reactivity

Reactivity

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explosible
sensitive to shock
highly reactive
Danger of spontaneous combustion with water.

Chemical stability

heat-sensitive

Possibility of hazardous reactions

Exothermic reaction with:

Hydrocarbons

Risk of explosion with:

acids, anilines, strong alkalis, phosphoric acid, Nitric acid, Amines, Heavy metals, metallic oxides, organic halides, silver salt, aluminum chloride, formaldehyde, alkali hydroxides, Formation of explosive salts possible., Ammonia, iodides, Halogenated hydrocarbon, Chloroform, oxyhalogenic compounds, Organic Substances, Oxidizing agents, Acetone

Conditions to avoid

Forms explosive mixtures with air at elevated temperatures.

Heating (explosive decomposition).

Avoid shock and friction.

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

Incompatible materials

various plastics

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

Skin

Central nervous system

Liver

Acute oral toxicity

LD50 rat: 940 mg/kg (RTECS)

Symptoms: Nausea, Vomiting, Diarrhea

absorption

Acute inhalation toxicity

Symptoms: Irritation symptoms in the respiratory tract.

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Acute dermal toxicity

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

absorption

Skin irritation

rabbit
Result: No skin irritation
(IUCLID)

Eye irritation

rabbit
Result: No eye irritation
(IUCLID)

Sensitization

Sensitization test: guinea pig
Result: negative
(IUCLID)

Genotoxicity in vitro

Ames test
Result: negative
(IUCLID)

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	Group 2B: Possibly carcinogenic to humans nitromethane 75-52-5
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	Anticipated carcinogen. nitromethane 75-52-5
ACGIH	Confirmed animal carcinogen with unknown relevance to humans. nitromethane 75-52-5

Further information

After absorption:
Methaemoglobinemia
Absorption may result in damage of the following:
Liver, Kidney

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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): 460 mg/l; 48 h

OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates

EC50 Daphnia magna (Water flea): 450 mg/l; 24 h

OECD Test Guideline 202

Toxicity to algae

IC50 Desmodesmus subspicatus (green algae): 36 mg/l; 72 h

OECD Test Guideline 201

Toxicity to bacteria

EC50 Photobacterium phosphoreum: 5,621 mg/l; 30 min (Lit.)

Persistence and degradability

Biodegradability

10 %; 28 d

OECD Test Guideline 301D

Not readily biodegradable.

Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: -0.35

(experimental)

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

Mobility in soil

No information available.

Other adverse effects

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 1261
Proper shipping name	NITROMETHANE
Class	3
Packing group	II
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 1261
Proper shipping name	NITROMETHANE
Class	3
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes Not permitted for transport

Sea transport (IMDG)

UN number	UN 1261
Proper shipping name	NITROMETHANE
Class	3
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-E S-D

SECTION 15. Regulatory information

United States of America

OSHA Hazards

Flammable Liquid
Harmful if swallowed.
Carcinogen
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

The following components are subject to reporting levels established by SARA Title III, Section 313:

Ingredients

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nitromethane

75-52-5

SARA 302

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.

Massachusetts Right To Know

Ingredients

nitromethane

Pennsylvania Right To Know

Ingredients

nitromethane

New Jersey Right To Know

Ingredients

nitromethane

Notification status

TSCA:

On 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.

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

H226

Flammable liquid and vapor.

H302

Harmful if swallowed.

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.

Date of issue:02/05/2013

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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