

SIGMA-ALDRICH**Material Safety Data Sheet**Version 3.1
Revision Date 01/09/2009
Print Date 07/19/2010**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : Nitromethane

Product Number : 02484
Brand : Fluka

Company : Sigma-Aldrich
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USA

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2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : CH_3NO_2
Molecular Weight : 61.04 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Nitromethane			
75-52-5	200-876-6	609-036-00-7	-

3. HAZARDS IDENTIFICATION**Emergency Overview****OSHA Hazards**

Flammable Liquid, Carcinogen, Target Organ Effect, Harmful by ingestion.

Target Organs

Liver, Kidney, Central nervous system

HMIS Classification**Health Hazard:** 1**Chronic Health Hazard:** ***Flammability:** 3**Physical hazards:** 0**NFPA Rating****Health Hazard:** 1**Fire:** 3**Reactivity Hazard:** 0**Potential Health Effects****Inhalation** May be harmful if inhaled. May cause respiratory tract irritation.**Skin** May be harmful if absorbed through skin. May cause skin irritation.

Eyes
Ingestion

May cause eye irritation.
Harmful if swallowed.

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point 36 °C (97 °F) - closed cup

Ignition temperature 418 °C (784 °F)

Suitable extinguishing media

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

Do not let product enter drains.

Methods for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13). Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling

Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage

Keep container tightly closed in a dry and well-ventilated place. Store in cool place.

Store under inert gas.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
Nitromethane	75-52-5	TWA	20 ppm 50 mg/m3	2000-03-01	US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004:Committees on Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)
Remarks	Confirmed animal carcinogen with unknown relevance to humans. 2000 Adoption.				
		TWA	100 ppm 250 mg/m3	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
		TWA	100 ppm 250 mg/m3	1993-06-30	US. Department of Labor - Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL) 29 CFR 1910.1000 Air Contaminants.

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form liquid

Safety data

pH 6.4 at 0.01 g/l at 20 °C (68 °F)
Melting point -29 °C (-20 °F)
Boiling point 101.2 °C (214.2 °F)
Flash point 36 °C (97 °F) - closed cup
Ignition temperature 418 °C (784 °F)
Lower explosion limit 7.3 %(V)
Upper explosion limit
Vapour pressure 36.4 hPa (27.3 mmHg) at 20 °C (68 °F)
Density 1.127 g/mL at 25 °C (77 °F)
Water solubility ca.100 g/l at 20 °C (68 °F)
Partition coefficient: log Pow: 0.17
n-octanol/water
Relative vapour density 2.11
- (Air = 1.0)

10. STABILITY AND REACTIVITY

Storage stability

Stable under recommended storage conditions.

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

Amines, Strong acids, Strong bases, Strong oxidizing agents, Strong reducing agents, Copper

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx)

Hazardous reactions

Vapours may form explosive mixture with air.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Oral - rat - 940 mg/kg

Irritation and corrosion

no data available

Sensitisation

no data available

Chronic exposure

Carcinogenicity - rat - Inhalation

Tumorigenic: Carcinogenic by RTECS criteria. Skin and Appendages: Other: Tumors.

Carcinogenicity - mouse - Inhalation

Tumorigenic: Carcinogenic by RTECS criteria. Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Eye: Tumors. Liver: Tumors.

This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

IARC: Group 2B - Possibly carcinogenic to humans (Nitromethane)

NTP: NTP reasonably anticipated to be carcinogenic (Nitromethane)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs and Symptoms of Exposure

Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer.

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	Harmful if swallowed.
Target Organs	Liver, Kidney, Central nervous system,

Additional Information

RTECS: PA9800000

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - < 278 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia magna (Water flea) - 450 mg/l - 24 h
Toxicity to algae	IC50 - Scenedesmus subspicatus - 36 mg/l - 72 h

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN-Number: 1261 Class: 3 Packing group: II
Proper shipping name: Nitromethane, solution
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG

UN-Number: 1261 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: NITROMETHANE, SOLUTION
Marine pollutant: No

IATA

UN-Number: 1261 Class: 3 Packing group: II
Proper shipping name: Nitromethane, solution
IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION**OSHA Hazards**

Flammable Liquid, Carcinogen, Target Organ Effect, Harmful by ingestion.

DSL Status

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

SARA 302 Components

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

SARA 313 Components

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 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Nitromethane	75-52-5	1991-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Nitromethane	75-52-5	1991-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Nitromethane	75-52-5	1991-07-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known in the State of California to cause cancer.	75-52-5	1997-05-01
Nitromethane		

16. OTHER INFORMATION**Further information**

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