Material Safety Data Sheet

Version 3.0
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Nitromethane

Product Number : 154946
Brand : Sigma-Aldrich

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +18003255832
Fax : +18003255052
Emergency Phone # : (314) 776-6555

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, Target Organ Effect, Harmful by ingestion., Carcinogen

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	May cause eye irritation.
Ingestion	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	2007-01-01	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Upper Respiratory Tract irritation Thyroid effects Lung damage Confirmed animal carcinogen with unknown relevance to humans: The agent is carcinogenic in experimental animals at a relatively high dose, by route(s) of administration, at site(s), of histologic type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is lilkely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.				
		TWA	100 ppm 250 mg/m3	1989-01-19	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	100 ppm 250 mg/m3	2006-02-28	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	The value in mg/m3 is approximate. Substance listed; for more information see OSHA document 1910.1009				

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
Face shield and 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) - lit.
Boiling point	101.2 °C (214.2 °F) - lit.
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: n-octanol/water	log Pow: 0.17
Relative vapour density	2.11 - (Air = 1.0)

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Conditions to avoid
Elevated temperatures.
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:	2B - Group 2B: Possibly carcinogenic to humans (Nitromethane)
NTP:	Reasonably anticipated to be a human carcinogen (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, Target Organ Effect, Harmful by ingestion., Carcinogen

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	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Nitromethane	75-52-5	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Nitromethane	75-52-5	1993-04-24

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known in the State of California to cause cancer. Nitromethane	75-52-5	2007-09-28

16. OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.