



# NITROMETHANE (13C, 99%)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
Issue date: 12/1/2010 Revision date: 4/6/2023 Supersedes: 5/20/2022 Version: 4.2

### SECTION 1: Identification

#### 1.1. Identification

Product form : Substance  
Substance name : NITROMETHANE (13C, 99%)  
CAS-No. : 75-52-5  
Product code : CLM-1043  
Formula : \*CH3NO2  
Other means of identification : Also applicable to:  
CLM-1043-NAT (13C, 99%)

#### 1.2. Recommended use and restrictions on use

No additional information available

#### 1.3. Supplier

Cambridge Isotope Laboratories, Inc.  
50 Frontage Rd  
01810  
ANDOVER, MA, 01810  
USA  
T 1-800-322-1174  
[cilsales@isotope.com](mailto:cilsales@isotope.com) - [www.isotope.com](http://www.isotope.com)

#### 1.4. Emergency telephone number

Emergency number : 1-703-741-5970  
Chemtrec 1-800-424-9300 24 hours

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture

##### GHS US classification

Flammable liquids Category 3	H226	Flammable liquid and vapor
Acute toxicity (oral) Category 4	H302	Harmful if swallowed
Hazardous to the aquatic environment – Acute Hazard Category 3	H402	Harmful to aquatic life

Full text of H statements : see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labeling

Hazard pictograms (GHS US) :



Signal word (GHS US) :

Warning

Hazard statements (GHS US) :

H226 - Flammable liquid and vapor  
H302 - Harmful if swallowed  
H402 - Harmful to aquatic life

Precautionary statements (GHS US) :

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. heat, hot surfaces, open flames, sparks  
P233 - Keep container tightly closed.  
P240 - Ground/Bond container and receiving equipment.

# NITROMETHANE (13C, 99%)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

P241 - Use explosion-proof electrical, lighting, ventilating equipment.  
P242 - Use only non-sparking tools.  
P243 - Take precautionary measures against static discharge.  
P264 - Wash Both hands thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product.  
P273 - Avoid release to the environment.  
P280 - Wear eye protection, face protection, protective clothing, protective gloves.  
P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell.  
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P330 - Rinse mouth.  
P370+P378 - In case of fire: Use Alcohol resistant foam, Carbon dioxide, Dry chemical, Water spray to extinguish.  
P403+P235 - Store in a well-ventilated place. Keep cool.  
P501 - Dispose of contents/container to Comply with applicable regulations.

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Name	Product identifier	%	GHS US classification
NITROMETHANE (13C, 99%) (Main constituent)	CAS-No.: 75-52-5	100	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Aquatic Acute 3, H402

Full text of hazard classes and H-statements : see section 16

### 3.2. Mixtures

Not applicable

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures general : Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.  
First-aid measures after inhalation : If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.  
First-aid measures after skin contact : Wash with soap and plenty of water. Consult a physician.  
First-aid measures after eye contact : Flush eye with water for 15 minutes. Get medical attention.  
First-aid measures after ingestion : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2. Most important symptoms and effects (acute and delayed)

Potential Adverse human health effects and symptoms : This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. 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. Stomach - Irregularities - Based on Human Evidence.

# NITROMETHANE (13C, 99%)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Symptoms/effects after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/effects after skin contact	: May be harmful if absorbed through skin. May cause skin irritation.
Symptoms/effects after eye contact	: Contact may cause eye irritation.
Symptoms/effects after ingestion	: Harmful if swallowed.

### 4.3. Immediate medical attention and special treatment, if necessary

No additional information available

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

### 5.2. Specific hazards arising from the chemical

Fire hazard : Flammable liquid and vapor.

### 5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Wear self contained breathing apparatus for fire fighting if necessary.  
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

## SECTION 6: Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

General measures : Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

#### 6.1.1. For non-emergency personnel

Emergency procedures : Use personal protective equipment. 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.

#### 6.1.2. For emergency responders

No additional information available

### 6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

### 6.3. Methods and material for containment and cleaning up

For containment : Contain spillage, then collect with non-combustible absorbent material. Disposal should be in accordance with applicable Federal, State and local regulations.  
Methods for cleaning up : For large spills, confine the spill in a dike and charge it with wet sand or earth for subsequent safe disposal. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal.

### 6.4. Reference to other sections

No additional information available

# NITROMETHANE (13C, 99%)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

- Additional hazards when processed : Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
- Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

#### 7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Keep container tightly closed in a dry and well-ventilated place.
- Storage conditions : Store at room temperature away from light and moisture.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

NITROMETHANE (13C, 99%) (75-52-5)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA [ppm]	20 ppm Upper Respiratory Tract irritation. Thyroid effects. Lung damage. Confirmed animal carcinogen with unknown relevance to humans.
USA - OSHA - Occupational Exposure Limits	
OSHA PEL TWA [1]	250 mg/m <sup>3</sup> See Appendix D - Substances with No Established RELs
OSHA PEL TWA [2]	100 ppm See Appendix D - Substances with No Established RELs
Remark (OSHA)	5mg/m <sup>3</sup> California permissible exposure limits for chemical contaminants (Title 8, Article 107)
Limit value category (OSHA)	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

#### 8.2. Appropriate engineering controls

No additional information available

#### 8.3. Individual protection measures/Personal protective equipment

##### Personal protective equipment:

Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.

##### Hand protection:

Wear suitable protective clothing and gloves

##### Eye protection:

Wear safety glasses with side shields (or goggles) and a face shield.

##### Skin and body protection:

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

##### Respiratory protection:

When appropriate, use NIOSH/CEN approved respirator.

# NITROMETHANE (13C, 99%)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### Personal protective equipment symbol(s):



## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid.
Color	: Colorless
Odor	: No data available
Odor threshold	: No data available
pH	: 6.4 at 0.01 g/l at 20 °C (68 °F)
Melting point	: -29 °C (-20 °F) - lit
Freezing point	: No data available
Boiling point	: 101.2 °C (214.2 °F) - lit
Flash point	: 36 °C (97 °F) - closed cup
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: 36.4 hPa (27.3 mmHg) at 20 °C (68 °F)
Relative vapor density at 20°C	: 2.11 - (Air = 1.0)
Relative density	: No data available
Density	: 1.127 g/ml at 25 °C (77 °F)
Molecular mass	: 62.03 g/mol (Labeled)
Solubility	: Water: 100 g/l
Partition coefficient n-octanol/water (Log Pow)	: -0.24
Auto-ignition temperature	: 418 °C (784 °F) at 1,013 hPa (760 mmHg)
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: lower explosion limit: 7.3 % (V)
Explosive properties	: No data available
Oxidizing properties	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

No additional information available

### 10.2. Chemical stability

Stable if stored under recommended conditions.

### 10.3. Possibility of hazardous reactions

Vapours may form explosive mixture with air.

### 10.4. Conditions to avoid

Heat, flames and sparks.

# NITROMETHANE (13C, 99%)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 10.5. Incompatible materials

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

### 10.6. Hazardous decomposition products

Formed under fire conditions. - Carbon oxides, nitrogen oxides (NOx).

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.  
Acute toxicity (dermal) : Not classified  
Acute toxicity (inhalation) : Not classified

#### NITROMETHANE (13C, 99%) (75-52-5)

LD50 oral rat	1478 mg/kg male and female
ATE US (oral)	1478 mg/kg body weight

Skin corrosion/irritation : Not classified  
pH: 6.4 at 0.01 g/l at 20 °C (68 °F)  
Serious eye damage/irritation : Not classified  
pH: 6.4 at 0.01 g/l at 20 °C (68 °F)  
Respiratory or skin sensitization : Not classified  
Germ cell mutagenicity : Not classified  
Carcinogenicity : Not classified

#### NITROMETHANE (13C, 99%) (75-52-5)

IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

Reproductive toxicity : Not classified  
STOT-single exposure : Not classified  
STOT-repeated exposure : Not classified  
Aspiration hazard : Not classified  
Viscosity, kinematic : No data available  
Potential Adverse human health effects and symptoms : This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. 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. Stomach - Irregularities - Based on Human Evidence.  
Symptoms/effects after inhalation : May be harmful if inhaled. May cause respiratory tract irritation.  
Symptoms/effects after skin contact : May be harmful if absorbed through skin. May cause skin irritation.  
Symptoms/effects after eye contact : Contact may cause eye irritation.  
Symptoms/effects after ingestion : Harmful if swallowed.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : Harmful to aquatic life.

#### NITROMETHANE (13C, 99%) (75-52-5)

LC50 - Fish [1]	> 659.2 mg/l static test LC50 - Pimephales promelas (fathead minnow) - 96 h
-----------------	---

# NITROMETHANE (13C, 99%)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

NITROMETHANE (13C, 99%) (75-52-5)	
EC50 - Crustacea [1]	> 103 mg/l Immobilization EC50 - Daphnia magna (Water flea) - 48 h (OECD Test Guideline 202)
ErC50 algae	> 102 mg/l Pseudokirchneriella subspicata (green algae) - 72 h (OECD Test Guideline 201)

### 12.2. Persistence and degradability

NITROMETHANE (13C, 99%) (75-52-5)	
Persistence and degradability	Aerobic - exposure time: 28 d.
Biodegradation	9.9 % - Not readily biodegradable. (OECD Test Guideline 301D)

### 12.3. Bioaccumulative potential

NITROMETHANE (13C, 99%) (75-52-5)	
Partition coefficient n-octanol/water (Log Pow)	-0.24

### 12.4. Mobility in soil

No additional information available

### 12.5. Other adverse effects

Other adverse effects : Environmental precautions. Avoid release to the environment. Disposal must be done according to official regulations.

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and local environmental control regulations.

Product/Packaging disposal recommendations : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Ecology - waste materials : Dispose of as unused product.

## SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

### 14.1. UN number

DOT NA No : UN1261

UN-No. (TDG) : UN1261

UN-No. (IMDG) : 1261

UN-No. (IATA) : 1261

### 14.2. UN proper shipping name

Proper Shipping Name (DOT) : Nitromethane

Proper Shipping Name (TDG) : NITROMETHANE

Proper Shipping Name (IMDG) : NITROMETHANE

Proper Shipping Name (IATA) : Nitromethane

# NITROMETHANE (13C, 99%)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 14.3. Transport hazard class(es)

#### DOT

Transport hazard class(es) (DOT) : 3  
Hazard labels (DOT) : 3



#### TDG

Transport hazard class(es) (TDG) : 3  
Hazard labels (TDG) : 3



#### IMDG

Transport hazard class(es) (IMDG) : 3  
Hazard labels (IMDG) : 3



#### IATA

Transport hazard class(es) (IATA) : 3  
Hazard labels (IATA) : 3



### 14.4. Packing group

Packing group (DOT) : II  
Packing group (TDG) : II  
Packing group (IMDG) : II  
Packing group (IATA) : II

### 14.5. Environmental hazards

Other information : No supplementary information available.

### 14.6. Special precautions for user

Special transport precautions : IATA Passenger: Not permitted for transport.

#### DOT

UN-No.(DOT) : UN1261  
DOT Packaging Exceptions (49 CFR 173.xxx) : 150  
DOT Packaging Non Bulk (49 CFR 173.xxx) : 202  
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : Forbidden  
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 60 L



# NITROMETHANE (13C, 99%)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

### TDG

UN-No. (TDG) : UN1261  
TDG Special Provisions : 38 - A person must not handle, offer for transport or transport these dangerous goods in a large means of containment if they are in direct contact with the large means of containment.  
Explosive Limit and Limited Quantity Index : 1 L  
Excepted quantities (TDG) : E0  
Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index : Forbidden  
Emergency Response Guide (ERG) Number : 129

### IMDG

Special provision (IMDG) : 26  
Limited quantities (IMDG) : 1 L  
Excepted quantities (IMDG) : E0  
Packing instructions (IMDG) : P001  
EmS-No. (Fire) : F-E - FIRE SCHEDULE Echo - NON-WATER-REACTIVE FLAMMABLE LIQUIDS  
EmS-No. (Spillage) : S-D - SPILLAGE SCHEDULE Delta - FLAMMABLE LIQUIDS  
Stowage category (IMDG) : A  
Flash point (IMDG) : 35°C c.c.  
Properties and observations (IMDG) : Colourless liquid. Flashpoint: 35°C c.c. Explosive Limits: 7.1% to 63%. Miscible with water. Fire and explosion hazard if package is ruptured.  
MFAG-No : 129

### IATA

PCA Excepted quantities (IATA) : E0  
PCA Limited quantities (IATA) : Forbidden  
PCA limited quantity max net quantity (IATA) : Forbidden  
PCA packing instructions (IATA) : Forbidden  
PCA max net quantity (IATA) : Forbidden  
CAO packing instructions (IATA) : 364  
CAO max net quantity (IATA) : 60L  
Special provision (IATA) : A1, A39  
ERG code (IATA) : 3L

## 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

## SECTION 15: Regulatory information

### 15.1. US Federal regulations

#### NITROMETHANE (13C, 99%) (75-52-5)

SARA Section 302 Threshold Planning Quantity (TPQ)	SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302
SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
NITROMETHANE (13C, 99%)	75-52-5	Not present	-	

# NITROMETHANE (13C, 99%)

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

### 15.2. International regulations

#### CANADA

##### NITROMETHANE (13C, 99%) (75-52-5)

Listed on the Canadian DSL (Domestic Substances List)

#### EU-Regulations

No additional information available

#### National regulations

##### NITROMETHANE (13C, 99%) (75-52-5)

CAUTION: This material is supplied for research and development purposes subject to the R&D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a "technically qualified individual" as defined by 40 CFR 720.3(ee). The use of this material for "commercial purposes" as defined by 40 CFR 720.3(r) is not permitted in the United States.

### 15.3. US State regulations

##### NITROMETHANE (13C, 99%) (75-52-5)

U.S. - California - Proposition 65 - Carcinogens List	Yes
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance List

## SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date : 04/06/2023

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

Full text of H-phrases	
H226	Flammable liquid and vapor
H302	Harmful if swallowed
H402	Harmful to aquatic life

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.