

Material Safety Data Sheet

Nitromethane

Section 1: Chemical Product and Company Identification

Product Name: Nitromethane 99%

Chemical Name: Nitromethane

Customs Tariff No: 29042090

Synonym Name: Methyl Nitrobenzene
Nitrocarbol; NM.

Chemical Formula: CH₃NO₂

Company Information:

Chemtrade International

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Xiangjiang Road, Qingdao Development Zone,
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Section 2: Composition and Information on Ingredients

Composition:

Name	CAS No.	EINECS No.	%by weight
Nitromethane	75-52-5	200-876-6	99

Section 3: Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless liquid. Flash Point: 95 deg F.

Warning! Employ care in contact of nitromethane with reducing agents, strong bases, amines, heavy metals or their oxides, especially at elevated temperatures or in confined spaces - explosion may result. Anhydrous salts of nitromethane may explode. Heating may cause an explosion. **Flammable liquid and vapor.** May be harmful if inhaled. May cause respiratory tract irritation. May cause eye and skin irritation. May be harmful if swallowed. May cause central nervous system depression. May cause cancer based on animal studies. May cause liver damage.

Target Organs: Blood, central nervous system, liver, eyes, thyroid, skin.

Potential Health Effects

Eye: May cause eye irritation. Vapors may cause eye irritation.

Skin: Exposure may cause irritation characterized by redness, dryness, and inflammation.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. May cause liver damage. May cause central nervous system depression. May be harmful if swallowed.

Inhalation: May cause respiratory tract irritation. May cause effects similar to those described for ingestion. May cause pulmonary edema and severe respiratory disturbances.

Chronic: Possible cancer hazard based on tests with laboratory animals. Prolonged or repeated skin contact may cause dermatitis.

Section 4: First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.

Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5: Fire and Explosion Data

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Flammable liquid and vapor. Vapors may form an explosive mixture with air. Explosive decomposition may occur under fire conditions. Closed containers may rupture violently when heated. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. Nitromethane is shock- and heat- sensitive. Explosive decomposition begins at 599°C (315°F). May be detonated by nearby explosions.

Extinguishing Media: For large fires, use water spray, fog, or alcohol-resistant foam. Water may be ineffective. Do NOT use dry chemical. If water is the only media available, use in flooding amounts. Cool containers with flooding quantities of water until well after fire is out. For small fires, DO NOT USE dry chemical extinguishers to control fires involving nitromethane or nitromethane.

Flash Point: 95°F (35.00 deg C)

Autoignition Temperature: 785 deg F (418.33 deg C)

Explosion Limits, Lower: 7.3%

Upper: Not available.

NFPA Rating: (estimated) Health: 1; Flammability: 3; Instability: 4

Section 6: Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Remove all sources of ignition. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Do not use combustible materials such as sawdust. Use a spark-proof tool. Provide ventilation. Prevent spreading of vapors through sewers, ventilation systems and confined areas. Use water spray to cool and disperse vapors and protect personnel.

Section 7: Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Take precautionary measures against static discharges. Avoid mechanical shock and friction. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Keep away from heat, sparks and flame. Avoid breathing vapor or mist. Employ care in contact of nitromethane with reducing agents, strong bases, amines, heavy metals or their oxides, especially at elevated temperatures or in confined spaces - explosion may result. Anhydrous salts of nitromethane may explode.

Storage: Keep away from sources of ignition. Store in a cool, dry, well-ventilated area away from incompatible substances. Outside or detached storage is preferred. DO NOT STORE WITH OTHER FLAMMABLES.

Section 8: Exposure Controls/Personal Protection

Engineering Controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Nitromethane	20 ppm TWA	750 ppm IDLH	100 ppm TWA; 250 mg/m ³ TWA

OSHA Vacated PELs: Nitromethane: 100 ppm TWA; 250 mg/m³ TWA

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves and clothing to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9: Physical and Chemical Properties

Physical State: Liquid
Appearance: colorless
Odor: fruity odor - disagreeable odor
pH: 6.12 (0.1M sol)
Vapor Pressure: 27.8 mm Hg @20 deg C
Vapor Density: 2.1 (air=1)
Evaporation Rate:1.39 (butyl acetate=1)
Viscosity: 0.61 cP 25 C
Boiling Point: 213 deg F
Freezing/Melting Point:-20 deg F
Decomposition Temperature:315 deg C
Solubility: Slightly soluble.
Specific Gravity/Density:1.13 (water=1)
Molecular Formula:CH₃NO₂
Molecular Weight:61.04

Section 10: Stability and Reactivity Data

Chemical Stability: Substance is shock sensitive and thermally unstable. Substance forms an explosive sodium salt which bursts into flame on contact with water. Nitromethane is made more sensitive to detonation by contamination with certain other materials such as amines and acids.

Conditions to Avoid: High temperatures, mechanical shock, ignition sources, confined spaces.

Incompatibilities with Other Materials: Strong oxidizing agents, reducing agents, strong acids, strong bases, amines, formaldehyde, nitric acid, metal oxides, hydrocarbons, combustible materials, heavy metals.

Hazardous Decomposition Products: Nitrogen oxides, carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported.

Section 11: Toxicological Information

RTECS#:

CAS# 75-52-5

LD50/LC50:

CAS# 75-52-5:

Oral, mouse: LD50 = 950 mg/kg;

Oral, rat: LD50 = 940 mg/kg;<BR.

Carcinogenicity:

CAS# 75-52-5:

- **ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans
- **California:** carcinogen, initial date 5/1/97
- **NTP:** Suspect carcinogen
- **IARC:** Group 2B carcinogen

Epidemiology: No evidence was found in the literature that exposure of humans to nitromethane resulted in methemoglobinemia. Nitromethane is a weak narcotic and respiratory irritant which may cause liver damage on prolonged exposure.

Teratogenicity: No information available.

Reproductive Effects: No information available.

Mutagenicity: No information available.

Neurotoxicity: Rats were exposed to nitromethane by inhalation, 6 hrs/day, 5 days/ week, for 16 days. Sciatic nerve degeneration was present in all male and female rats exposed to 375 ppm or greater; rats exposed to 750 or 1500 ppm also had reduced myelin around sciaticaxons. Rats were exposed to nitromethane by inhalation, 6 hrs/day, 5 days/week, for 13 weeks. Clinical findings included hindlimb paralysis in rats in the 750 and 1500 ppm groups. Rats were exposed to 0, 94, 188, or 375 ppm nitromethane by inhalation,6 hrs/day, 5 days/week, for 2 years. No hindlimb paralysis, as occurred in rats in the 13-week study, was observed in male or female rats in the 2-year study.

Other Studies:**Section 12: Ecological Information**

No information available.

Section 13: Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14: Transport Information

	US DOT	Canada TDG
Shipping Name:	NITROMETHANE	No information available.
Hazard Class:	3	
UN Number:	UN1261	
Packing Group:	II	

Section 15: Other Regulatory Information**US FEDERAL****TSCA**

CAS# 75-52-5 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 75-52-5: Effective 4/13/89, Sunset 12/19/95

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 75-52-5: chronic, flammable, reactive.

Section 313 No chemicals are reportable under Section 313.**Clean Air Act:**

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

CAS# 75-52-5 is considered highly hazardous by OSHA.

STATE

CAS# 75-52-5 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, and Massachusetts.

California Prop 65

The following statement(s) is (are) made in order to comply with the California Safe Drinking Water Act:

WARNING: This product contains Nitromethane, a chemical known to the state of California to cause cancer.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XN

Risk Phrases:

R 10 Flammable.

R 22 Harmful if swallowed.

R 5 Heating may cause an explosion.

Safety Phrases:

S 41 In case of fire and/or explosion do not breathe fumes.

WGK (Water Danger/Protection)

CAS# 75-52-5: 2

Canada - DSL/NDSL

CAS# 75-52-5 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D2A, F.

Canadian Ingredient Disclosure List

CAS# 75-52-5 is listed on the Canadian Ingredient Disclosure List.

Section 16: Other Information

MSDS Creation Date: 6/16/2000

Revision #4 Date: 3/15/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Chemtrade International be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Chemtrade International has been advised of the possibility of such damages.