


MSDS	Material Safety Data Sheet	24 Hour Emergency Telephone: 908-859-2151 CHEMTREC: 1-800-424-9300
		National Response in Canada CANUTEC: 613-996-6666
From: Mallinckrodt Baker, Inc. 222 Red School Lane Phillipsburg, NJ 08865		Outside U.S. and Canada Chemtrec: 703-527-3887
		NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.
All non-emergency questions should be directed to Customer Service (1-800-562-2537) for assistance.		

NITROMETHANE

1. Product Identification

Synonyms: Nitrocarbol; methane, nitro-
CAS No. : 75-52-5
Molecular Weight: 61.04
Chemical Formula: CH₃NO₂
Product Codes:
J.T. Baker: S161
Mallinckrodt: 1911

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Nitromethane	75-52-5	100%	Yes

3. Hazards Identification

Emergency Overview

WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. FORMS SHOCK-SENSITIVE MIXTURES WITH CERTAIN OTHER MATERIALS. AFFECTS CENTRAL NERVOUS SYSTEM. COMPOUNDS FORMED WITH STRONG ALKALIS ARE EXPLOSIVE WHEN DRY.

SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate (Cancer)
Flammability Rating: 2 - Moderate
Reactivity Rating: 4 - Extreme (Explosive)
Contact Rating: 3 - Severe
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
Storage Color Code: Red Stripe (Store Separately)

Potential Health Effects

Onset of symptoms from any route of exposure may be delayed.

Inhalation:

Vapors may cause irritation to respiratory tract. A weak narcotic, higher concentrations may cause nausea, vomiting, diarrhea, and headaches.

Ingestion:

Symptoms may parallel those from inhalation.

Skin Contact:

May cause irritation, redness, and pain. May be absorbed through skin with symptoms similar to those from inhalation.

Eye Contact:

May cause irritation and corneal damage.

Chronic Exposure:

Repeated or prolonged skin exposure may cause dermatitis. Prolonged inhalation of vapors may cause liver damage.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders, or impaired liver, or pulmonary function may be more susceptible to the effects of this substance.

4. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact:

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:

Flash point: 35C (95F) CC

Autoignition temperature: 418C (784F)

Flammable limits in air % by volume:

lel: 7.3

Explosion:

Above the flash point, explosive vapor-air mixtures may be formed. Flammable vapors that are heavier than air may accumulate in low areas and/or spread along ground away from handling site. Flashback along vapor trail may occur. May be detonated if confined and heated, or by shock from high explosives. Becomes more sensitive to detonation by contamination with certain chemical compounds, such as amines and acids. Fire and explosion hazard when under pressure. Sensitive to mechanical impact. Sensitive to static discharge.

Fire Extinguishing Media:

Carbon dioxide, alcohol foam, water spray. Do not use dry chemical extinguishers. Do not use dry chemical fire extinguishers containing sodium or potassium bicarbonates on nitromethane fires.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! If a leak or spill has not ignited, use water spray to disperse the vapors, to protect personnel attempting to stop leak, and to flush spills away from exposures.

J. T. Baker SOLUSORB? solvent adsorbent is recommended for spills of this product.

7. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Protect storage area from exposure to external fires. DO Not distill nitromethane. Protect from sources of adiabatic compression. Never wash empty containers with alkaline cleaning agents. After this container has been emptied, it may contain explosive vapors; observe all warnings and precautions listed for the product. Do not cut, or weld on or near this container. Protect storage area and processing vessels from high energy projectiles by a suitable barricade. Separate from flammables and sensitizers. Do not reuse or dispose of empty containers until they have been rinsed with water.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

Nitromethane:

-OSHA Permissible Exposure Limit (PEL): 100 ppm (TWA)

-ACGIH Threshold Limit Value (TLV): 20 ppm (TWA), A3 - Confirmed animal carcinogen with unknown relevance to humans

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded and engineering controls are not feasible, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134). Where respirators are required, you must have a written program covering the basic requirements in the OSHA respirator standard. These include training, fit testing, medical approval, cleaning, maintenance, cartridge change schedules, etc. See 29CFR1910.134 for details.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

Clear oily liquid.

Odor:

Disagreeable fruity odor.

Solubility:

10% in water @ 20C (68F)

Specific Gravity:

1.14 @25C/4C

pH:

6.4 @ .1M (0.1M solution)

% Volatiles by volume @ 21C (70F):

100

Boiling Point:

100 - 102C (212 - 216F)

Melting Point:

-29C (-20F)

Vapor Density (Air=1):

2.1

Vapor Pressure (mm Hg):

27.8 @ 20C (68F)

Evaporation Rate (BuAc=1):

1.39

10. Stability and Reactivity

Stability:

Shock and heat sensitive. Thermally unstable. Reacts violently with a broad range of materials. Contact with organic bases (amines), acids, and some metal oxides such as lead pigments, may markedly increase its sensitivity to detonation by shock. Heating of closed containers may cause detonation. Mixtures of nitromethane and known sensitizers are explosive and should be handled with extreme caution.

Hazardous Decomposition Products:

Burning may produce carbon monoxide, carbon dioxide, nitrogen oxides.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Amines, acids, bases, oxidizing materials, metal oxides, aluminum chloride plus organic matter, hexamethylbenzene, hydrocarbons, calcium hypochlorite, potassium hydroxide, sodium hydroxide, calcium hydroxide. Slowly corrodes steel and copper when wet. Nitromethane in the presence of water can react with organic bases to form salts which are explosive when dry.

Conditions to Avoid:

Heat, flames, ignition sources and incompatibles. Shock sensitive.

11. Toxicological Information

Toxicological Data:

Oral rat LD50: 940 mg/kg.

Carcinogenicity:

Some evidence of carcinogenicity was noted in NTP tests. The effects were mammary tumors in female rats and benign haderian gland tumors in mice.

-----\Cancer Lists\-----

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Nitromethane (75-52-5)	No	Yes	2B

12. Ecological Information

Environmental Fate:

When released into the soil, this material may leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into water, this material is not expected to biodegrade. When released into water, this material may evaporate to a moderate extent. When released into water, this material is expected to have a half-life between 10 and 30 days. This material has an experimentally-determined bioconcentration factor (BCF) of less than 100. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by photolysis. When released into the air, this material is expected to have a half-life of less than 1 day.

Environmental Toxicity:

No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: NITROMETHANE

Hazard Class: 3

UN/NA: UN1261

Packing Group: II

Information reported for product/size: 500ML

International (Water, I.M.O.)

Proper Shipping Name: NITROMETHANE

Hazard Class: 3

UN/NA: UN1261

Packing Group: II

Information reported for product/size: 500ML

International (Air, I.C.A.O.)

Proper Shipping Name: NITROMETHANE

Hazard Class: 3

UN/NA: UN1261

Packing Group: II

Information reported for product/size: 500ML

15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----

Ingredient	TSCA	EC	Japan	Australia
Nitromethane (75-52-5)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----

Ingredient	---Canada---			
	Korea	DSL	NDSL	Phil.
Nitromethane (75-52-5)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----				
Ingredient	-SARA 302-		-SARA 313-	
	RQ	TPQ	List	Chemical Catg.
Nitromethane (75-52-5)	No	No	No	No

-----\Federal, State & International Regulations - Part 2\-----			
Ingredient	CERCLA	-RCRA-	-TSCA-
		261.33	8(d)
Nitromethane (75-52-5)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No
Reactivity: Yes (Pure / Liquid)

WARNING:

THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

Australian Hazchem Code: 2[Y]E

Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: **2** Flammability: **3** Reactivity: **4**

Label Hazard Warning:

WARNING! FLAMMABLE LIQUID AND VAPOR. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. FORMS SHOCK-SENSITIVE MIXTURES WITH CERTAIN OTHER MATERIALS. AFFECTS CENTRAL NERVOUS SYSTEM. COMPOUNDS FORMED WITH STRONG ALKALIS ARE EXPLOSIVE WHEN DRY.

Label Precautions:

Keep away from heat, sparks and flame.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

Avoid contact with eyes, skin and clothing.

Avoid breathing vapor.

Keep from contamination by any source including metals, amines, acids. Such contamination can cause formation of shock-sensitive/explosive mixtures.

Store in original container. Avoid mixing with strong alkalis or amines. DO NOT ship with or store near high explosives. Handle empty containers as if they are full.

Label First Aid:

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases call a physician.

Product Use:

Laboratory Reagent.

Revision Information:

No Changes.

Disclaimer:

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