

Safety Data Sheet

WEGO CHEMICAL & MINERAL CORP

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Nitromethane

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Nitromethane

Chemical Formula: CH₃NO₂

CAS Number: 75-52-5

Other Designations: nitrocarbol.

Derivation: A nitroparaffin derived by nitration of propane or methane, or the reaction between sodium nitrate and sodium chloroacetate.

General Use: Used as a solvent for cellulosic compounds, polymers, waxes, and fats; rocket and racing car fuel; in chemical synthesis, explosive mixtures, and in the coating industry.

Emergency Telephone: (ChemTel) Contract MIS0000335; 800 255-3924; INTL 813 248-0585

Section 2 - Hazards Identification

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

Appearance: clear, colorless. **Flash Point:** 35 °C. **Danger!** Flammable liquid and vapor. Causes respiratory tract irritation. May cause digestive tract irritation. May be harmful if swallowed. May cause central nervous system depression. May be absorbed through the skin. May cause methemoglobinemia. May cause eye and skin irritation. May cause liver and kidney damage.

HMIS

H	2
F	3
R	4

PPE†

†Sec. 8

Potential Health Effects

Primary Entry Routes: Inhalation, skin and eye contact.

Target Organs: Blood, kidneys, central nervous system, liver.

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 3), H226

Acute toxicity, Oral (Category 4), H302

Acute aquatic toxicity (Category 3), H402

Chronic aquatic toxicity (Category 3), H412

GHS Label elements, including precautionary statements

Pictogram



Signal word

Warning

Hazard statement(s)

H226 Flammable liquid and vapor.

H302 Harmful if swallowed.

H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P273 Avoid release to the environment.

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P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
 P301 + P312 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
 P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
 P330 Rinse mouth.
 P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
 P403 + P235 Store in a well-ventilated place. Keep cool.
 P501 Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS - none

Acute Effects

Eye: May cause eye irritation. Vapors may cause eye irritation.
Skin: May cause skin irritation. Prolonged and/or repeated contact may cause irritation and/or dermatitis. May be absorbed through the skin.
Ingestion: May cause irritation of the digestive tract. Methemoglobinemia is characterized by dizziness, drowsiness, headache, breath shortness, cyanosis with bluish skin, rapid heart rate and chocolate-brown colored blood. May be harmful if swallowed.
Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. May cause liver and kidney damage. May cause narcotic effects. May cause thyroid effects. May cause blood changes.

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

Medical Conditions Aggravated by Long-Term Exposure: skin disorders.

Chronic Effects: Prolonged or repeated skin contact may cause dermatitis. May cause methemoglobinemia, which is characterized by chocolate-brown colored blood, headache, weakness, dizziness, breath shortness, cyanosis, rapid heart rate, unconsciousness and possible death.

Section 3 - Composition / Information on Ingredients

Ingredient Name	CAS Number	EINECS/ELINCS	% wt or % vol
Nitromethane	75-52-5	200-876-6	>96%

Trace Impurities:

1992 OSHA PEL	1993-94 ACGIH TLV	1991 DFG (Germany) MAK	1990 IDLH Level
Transitional and Final Rule Limits:	TWA: 20 ppm (50 mg/m ³)	TWA: 100 ppm (250 mg/m ³)	1000 ppm
8-hr TWA: 100 ppm (250 mg/m ³)			
	1992 NIOSH REL		
	None established		

† See NIOSH, RTECS (PA9800000), for additional toxicity data.

Section 4 - First Aid Measure

Eye Contact: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid immediately.

Skin: Get medical aid if irritation develops or persists. Flush skin with plenty of soap and water.

Ingestion: Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation: Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

After first aid, get appropriate in-plant, paramedic, or community medical support.

Note to Physicians: If exposure is suspected, perform liver and kidney function tests and obtain arterial blood gases and a chest x-ray.

Special Precautions/Procedures:

Section 5 - Fire-Fighting Measures

Flash Point: 95 °F (35 °C)

Flash Point Method: Closed Cup

Burning Rate:

Auto-ignition Temperature: 784.4 °F (418 °C)

LEL: 7.1% v/v

UEL: 63.0% v/v

Flammability Classification: highly flammable



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Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray, or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam.

Unusual Fire or Explosion Hazards: Containers may rupture in heat of fire. Vapors may travel to ignition source and flash back. Vapor explosion hazard. Vapors may travel a long distance; ignition and/or flash back may occur.

Fire-Fighting Instructions: Do not release runoff from fire control methods to sewers or waterways.

Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode. Structural firefighters' protective clothing provides only limited protection. Apply cooling water to sides of containers until well after fire is out. For massive fire in cargo area, use monitor nozzles or unmanned hose holders. Withdraw immediately if you hear a rising sound from venting safety device or notice any tank discoloration due to fire.

Section 6 - Accidental Release Measures

Spill /Leak Procedures: Notify safety personnel, isolate and ventilate area, deny entry, and stay upwind. Shut off ignition sources.

Small Spills: Absorb spill with inert material, (e.g., dry sand or earth), then place into a chemical waste container. Remove all sources of ignition. Use a spark-proof tool.

Large Spills

Containment: For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways.

Cleanup: Cleanup personnel should protect against inhalation and skin/eye contact.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

Section 7 - Handling and Storage

Handling Precautions: Wash thoroughly after handling. Use only in a well ventilated area. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Avoid contact with heat, sparks and flame.

Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage Requirements: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: To reduce potential health hazards, use sufficient dilution or local exhaust ventilation to control airborne contaminants and to maintain concentrations at the lowest practical level. Install Class I, Group C electrical equipment.

Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Administrative Controls: Consider pre-placement and periodic medical exams with emphasis on the skin and liver.

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or non-routine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA.

Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing/Equipment: Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

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Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance and Odor: clear, colorless/disagreeable, fruit odor.

Odor Threshold: < 200 ppm

Vapor Pressure: 27.8 mm Hg at 68 °F (20 °C)

Saturated Vapor Density (Air = 0.075 lb/ft³ or 1.2 kg/m³): 0.08 lb/ft³ or 1.25 kg/m³

Vapor Density (Air=1): 2.11

Formula Weight: 61.04

Bulk Density: 9.5 lb/gal

Specific Gravity (H₂O=1, at 4 °C): 1.139 at 68 °F (20 °C)

pH: 0.01 M solution = 6.12

Water Solubility: 9.5 % at 68 °F (20 °C)

Other Solubilities: Ethyl alcohol, ethyl ether, and dimethylformamide.

Boiling Point: 213 °F (101 °C)

Freezing/Melting Point: -20 °F (-29 °C)

Viscosity:

Refractive Index:

Surface Tension:

% Volatile:

Evaporation Rate:

Section 10 - Stability and Reactivity

Stability: Nitromethane is shock sensitive and thermally unstable (may decompose explosively above 599 °F/315 °C). High pressures and contamination with other materials such as acids and amines contribute to instability.

Polymerization: Hazardous polymerization cannot occur.

Chemical Incompatibilities: Include acetone; aluminum chloride + organic matter; alkyl metal halides; silver oxide + boron trifluoride etherate; acids and bases such as calcium hydroxide, calcium hypochlorite, aniline, diaminoethane, morpholine, methylamine, ammonium hydroxide, potassium hydroxide, sodium carbonate, n-methylaniline, formaldehyde, lithium perchlorate, and formic, nitric, sulfuric, or phosphoric acids; aqueous silver nitrate (forms explosive silver fulminate), metal oxides; hexamethylbenzene; hydrocarbons; and oxidizing materials. It slowly corrodes some metal, including copper and steel (when wet).

Conditions to Avoid: Exposure to heat, ignition sources, shock, or incompatibles. Use small pore sieve (3 or 4A) for drying and storing nitromethane. Larger pore sieves can cause decomposition problems.

Hazardous Decomposition Products: Thermal oxidative decomposition of nitromethane can produce nitrogen oxides, carbon monoxide, carbon dioxide.

Section 11 - Toxicological Information

Toxicity Data:*

Acute Oral Effects:

Rat, oral, LD₅₀: 940 mg/kg

Mouse, oral, LD₅₀: 950 mg/kg

Chronic Effects: No information available.

Carcinogenicity: See SECTION 3.

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: Teratogenic effects have occurred in experimental animals.

Reproductive Effects: Adverse reproductive effects have occurred in experimental animals.

Mutagenicity: No information available.

Neurotoxicity: Rats were exposed to nitro-methane by inhalation, 6 hrs/day, 5 days/ week, for 16 days. Sciatic nerve

Reproductive Effects: Adverse reproductive effects have occurred in experimental animals.

Mutagenicity: No information available.

Neurotoxicity: Rats were exposed to nitro-methane 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 hind-limb 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.

* See NIOSH, RTECS (PA9800000), for additional toxicity data.

Section 12 - Ecological Information

Ecotoxicity: see Dictionary of Substances and their Effects.

Environmental Fate: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Aquatic toxicity: Harmful to aquatic life.

Toxicity to fish LC50 - Danio rerio (zebra fish) - 460 mg/l - 48 h

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna (Water flea) - 450 mg/l - 24 h

Toxicity to algae IC50 - Desmodesmus subspicatus (green algae) - 36 mg/l - 72 h.

Environmental Degradation: no data available

Soil Absorption/Mobility: no data available

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Section 13 - Disposal Considerations

Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

Disposal Regulatory Requirements:

Container Cleaning and Disposal:

Section 14 - Transport Information

US DOT(49 CFR 172.101): PSN: Nitromethane Hazard Class: 3 UN Number: 1261 Packing Group: II	IATA PSN: Nitromethane Hazard Class: 3 UN Number: 1261 Packing Group: II
IDG PSN: Nitromethane Hazard Class: 3 UN Number: 1261 Packing Group: II	IMDG/IMO PSN: Nitromethane Hazard Class: 3 UN Number: 1261 Packing Group: II

Section 15 - 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: immediate, delayed, fire, 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.

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STATE

CAS# 75-52-5 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, 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, D2B, F.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

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

Section 16 - Other Information

Disclaimer: All information, recommendations and suggestions appearing herein are based upon sources believed to be reliable. However, it is the users responsibility to determine the safety, toxicity and suitability for its own use of this product. WEGO CHEMICAL & MINERAL CORP. DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE USE BY OTHERS OF THIS PRODUCT.