



Safety Data Sheet

The Dow Chemical Company

Product Name: METHYL CARBITOL(TM) SOLVENT FUEL
ADDITIVE GRADE

Revision Date: 2009/04/28

Print Date: 11 Feb 2011

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Identification of the substance/preparation and of the company/undertaking

Product Name

METHYL CARBITOL(TM) SOLVENT FUEL ADDITIVE GRADE

Use of the substance/preparation

Fuel additive. Industrial solvent.

COMPANY IDENTIFICATION

The Dow Chemical Company
2030 Willard H. Dow Center
48674 Midland, MI
USA

Customer Information Number: 800-258-2436
For questions about this SDS, contact: SDSQuestion@dow.com

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 989-636-4400
Local Emergency Contact: 00 31 115 69 4982

2. Hazards Identification

Possible risk of harm to the unborn child.

3. Composition/information on ingredients

Component	Amount	Classification:	CAS #	EC #
2-(2-Methoxyethoxy) ethanol; diethylene glycol monomethyl ether	> 99.0 %	Repr.Cat.3: R63	111-77-3	203-906-6

See Section 16 for full text of R-phrases.

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4. First-aid measures

Eye Contact: Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

Skin Contact: Wash skin with plenty of water.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Ingestion: No emergency medical treatment necessary.

Notes to Physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Emergency Personnel Protection: If potential for exposure exists refer to Section 8 for specific personal protective equipment.

5. Fire Fighting Measures

Extinguishing Media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Small spills: Absorb with materials such as: Sand. Vermiculite. Collect in suitable and properly labeled containers. Large spills: Contain spilled material if possible. Pump into suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Isolate area. Refer to Section 7, Handling, for additional precautionary measures. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. Handling and Storage

Handling

General Handling: See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

Storage

Store in the following material(s): Carbon steel. Stainless steel. Phenolic lined steel drums. Do not store in: Aluminum. Copper. Galvanized iron. Galvanized steel. See Section 10 for more specific information.

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
2-(2-Methoxyethoxy) ethanol; diethylene glycol monomethyl ether	Dow IHG	TWA	30 ppm
	EU IOELV	TWA	50.1 mg/m3 10 ppm SKIN
	Ireland OELV	TWA	50.1 mg/m3 10 ppm SKIN Indicative OELV
	UK WEL	TWA	50.1 mg/m3 10 ppm SKIN

A "skin" notation following the inhalation exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.

It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

Personal Protection

Eye/Face Protection: Use safety glasses. Safety glasses should be consistent with EN 166 or equivalent.

Skin Protection: No precautions other than clean body-covering clothing should be needed.

Hand protection: Chemical protective gloves should not be needed when handling this material. Consistent with general hygienic practice for any material, skin contact should be minimized.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. For most conditions, no respiratory protection should be needed; however, if material is heated or sprayed, use an approved air-purifying respirator. Use the following CE approved air-purifying respirator: Organic vapor cartridge, type A (boiling point >65 °C)

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

9. Physical and Chemical Properties

Physical State Liquid.
Color Colorless

Odor	Mild
Odor Threshold	No test data available
Flash Point - Closed Cup	96 °C <i>ASTM D3278</i>
Flammability (solid, gas)	No
Flammable Limits In Air	Lower: 1.38 %(V) <i>Literature</i> Vapor Upper: 22.7 %(V) <i>Literature</i> Vapor
Autoignition Temperature	240 °C <i>Literature</i>
Vapor Pressure	0.025 kPa @ 25 °C <i>Literature</i>
Boiling Point (760 mmHg)	194 °C <i>Literature</i> .
Vapor Density (air = 1)	4.2 <i>Literature</i>
Specific Gravity (H2O = 1)	1.020 20 °C/20 °C <i>Literature</i>
Liquid Density	1.022 g/cm3 @ 20 °C <i>Literature</i>
Freezing Point	-69 °C <i>Literature</i>
Melting Point	Not applicable
Solubility in water (by weight)	100 % @ 20 °C <i>Literature</i>
pH	No test data available
Decomposition Temperature	No test data available
Partition coefficient, n-octanol/water (log Pow)	-1.18 <i>Estimated</i>
Evaporation Rate (Butyl Acetate = 1)	0.02
Dynamic Viscosity	3.5 mPa.s @ 25 °C <i>Literature</i>
Kinematic Viscosity	No test data available

10. Stability and Reactivity

Stability/Instability

Thermally stable at typical use temperatures.

Conditions to Avoid: Do not distill to dryness. Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible Materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

Hazardous Polymerization

Will not occur.

Thermal Decomposition

Decomposition products can include and are not limited to: Aldehydes. Ketones. Organic acids.

11. Toxicological Information

Acute Toxicity

Ingestion

Very low toxicity if swallowed. Harmful effects not anticipated from swallowing small amounts.

LD50, Rat > 7,000 mg/kg

Eye Contact

May cause pain disproportionate to the level of irritation to eye tissues. May cause slight temporary eye irritation.

Skin Contact

Prolonged contact is essentially nonirritating to skin.

Skin Absorption

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

LD50, Rabbit 20,420 mg/kg

Inhalation

No adverse effects are anticipated from single exposure to vapor.

Repeated Dose Toxicity

In animals, diethylene glycol methyl ether has been reported to produce effects in the liver and kidney and, only after very high oral doses, in the testes and thymus.

Developmental Toxicity

In animals, diethylene glycol methyl ether is slightly toxic to the fetus at doses nontoxic to the mother following skin contact; birth defects have been seen only following high oral doses which have little relevance to human exposure.

Genetic Toxicology

In vitro genetic toxicity studies were negative.

12. Ecological Information

ENVIRONMENTAL FATE

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50).

Henry's Law Constant (H): 4.43E-08 atm*m3/mole; 25 °C Estimated

Partition coefficient, n-octanol/water (log Pow): -1.18 Estimated

Partition coefficient, soil organic carbon/water (Koc): < 1 Estimated

Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
2.60E-11 cm ³ /s	4.9 h	Estimated

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method
77.9 %	28 d	OECD 301B Test
100 %	28 d	OECD 302B Test

ECOTOXICITY

Material is not classified as dangerous to aquatic organisms (LC50/EC50/IC50/LL50/EL50 greater than 100 mg/L in most sensitive species).

Fish Acute & Prolonged Toxicity

LC50, fathead minnow (*Pimephales promelas*): 5,741 mg/l

LC50, bluegill (*Lepomis macrochirus*): 7,500 mg/l

LC50, rainbow trout (*Oncorhynchus mykiss*): 1,000 mg/l

LC50, common carp (*Cyprinus carpio*): > 5,000 mg/l

Aquatic Invertebrate Acute Toxicity

LC50, water flea *Daphnia magna*: 1,192 mg/l

Aquatic Plant Toxicity

EC50, green alga *Pseudokirchneriella subcapitata* (formerly known as *Selenastrum capricornutum*), biomass growth inhibition, 96 h: > 1,000 mg/l

EC50, alga *Scenedesmus* sp., biomass growth inhibition, 72 h: > 500 mg/l

Toxicity to Micro-organisms

EC50; activated sludge, respiration inhibition, 0.5 h: > 1,995 mg/l

13. Disposal Considerations

This product, when being disposed of in its unused and uncontaminated state should be treated as a hazardous waste according to EC Directive 91/689/EEC. Any disposal practices must be in compliance with all national and provincial laws and any municipal or local by-laws governing

hazardous waste. For used, contaminated and residual materials additional evaluations may be required. Do not dump into any sewers, on the ground, or into any body of water.

14. Transport Information

ROAD & RAIL

NOT REGULATED

OCEAN

NOT REGULATED

AIR

NOT REGULATED

INLAND WATERWAYS

Proper Shipping Name: SUBSTANCES with a flashpoint above 61°C but not more than 100°C, N.O.S.

Technical Name: DIETHYLENE GLYCOL MONOMETHYL ETHER

ID Number: ID9003

15. Regulatory Information

European Inventory of Existing Commercial Chemical Substances (EINECS)

All components in this product are in compliance with EINECS.

EC Classification and User Label Information

Hazard Symbol:

Xn - Harmful.

Risk Phrases :

R63 - Possible risk of harm to the unborn child.

Safety Phrases :

S36/37 - Wear suitable protective clothing and gloves.

Chemical Name 2-(2-Methoxyethoxy) ethanol; diethylene glycol monomethyl ether
(EC Label) (EC # 203-906-6)

16. Other Information

Risk-phrases in the Composition section

R63 Possible risk of harm to the unborn child.

Product Literature

Additional information on this product may be obtained by calling your sales or customer service contact. Ask for a product brochure.

Revision

Identification Number: 78399 / 0000 / Issue Date 2009/04/28 / Version: 3.1

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

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