

Material Safety Data Sheet

(Methylal)

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Methylal(Dimethoxymethane)

1. PRODUCT AND COMPANY IDENTIFICATION

Material Identification

Corporate MSDS Number: Methylal CAS Number: 109-87-5
Product Name Methylal; Dimethoxymethane
Chemical Formula CH₂(OCH₃)₂
Chemical Name Dimethoxymethane
Product Use Foam blowing agent, solvent, catalyst

Company Identification

MANUFACTURER/DISTRIBUTOR: Cosutin Industrial CO., Limited
Add: Unit B, 10/F Lee May Building 788-790 Nathan Road, Mongkok, Kowloon, H.K.
Tel.: +852 21395855 Fax: +852 81673777
PHONE NUMBERS Product Information: +86 136 31481545
Transport Emergency: +86 136 31481545
Medical Emergency: +86 136 31481545

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient Name	CAS No.	Typical Wt. %
Dimethoxymethane	109-87-5	99.5%+

3. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: colorless clear liquid. Flash Point: -18 deg C.

Warning! Flammable liquid and vapor. Causes eye, skin, and respiratory tract irritation. May cause central nervous system depression.

Target Organs: Kidneys, heart, central nervous system, lungs.

Hazard pictogram(s):



GHS02



Risk Codes: R11 Highly flammable.

R36 Irritating to eyes.

R37 Irritating to respiratory system.

R38 Irritating to skin.

Safety Description: S9 Keep container in a well-ventilated place.

S16 Keep away from sources of ignition.

S33 Take precautionary measures against static discharges.

Potential Health Effects

Eye: Causes eye irritation.

Skin: Causes skin irritation. Prolonged and/or repeated contact may cause defatting of the skin and dermatitis. Causes redness and pain. May cause cyanosis of the extremities.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Ingestion of large amounts may cause CNS depression.

Inhalation: Effects may be delayed. Causes respiratory tract irritation. May cause dizziness, incoordination, and unconsciousness. Vapors may cause dizziness or suffocation. Animals exposed to high concentrations have shown liver, kidney, heart, and lung abnormalities.

Chronic: Prolonged or repeated skin contact may cause defatting and dermatitis. May cause liver and kidney damage. Prolonged exposure may produce a narcotic effect.

4. FIRST AID MEASURES

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Wash clothing before reuse.

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

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.

Notes to Physician: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Use water spray to keep fire-exposed containers cool. Water may be ineffective. Material is lighter than water and a fire may be spread by the use of water. Containers may

explode in the heat of a fire. Flammable liquid and vapor. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. May polymerize explosively when involved in a fire. Runoff to sewer may create fire or explosion hazard.

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. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water. Cool containers with flooding quantities of water until well after fire is out.

Flash Point: -18 deg C (-0.40 deg F)

Autoignition Temperature: 237 deg C (458.60 deg F)

Explosion Limits, Lower: 1.60 vol % **Upper:** 17.60 vol %

NFPA Rating: (estimated) Health: 2; Flammability: 3; Instability: 2

6. ACCIDENTAL RELEASE MEASURES

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

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

7. HANDLING AND STORAGE

Handling: 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. Keep container tightly closed. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Use with adequate ventilation. Wash clothing before reuse. This product may be under pressure; cool before opening. Do not use if the material has evaporated to dryness. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Do not store in direct sunlight. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

Exposure Limits			
Chemical Name	ACGIH	NIOSH	OSHA Final PELs
Dimethoxymethane	1000 ppm TWA	1000 ppm TWA; 3100 mg/m3 TWA 2200 ppm IDLH	1000 ppm TWA; 3100 mg/m3 TWA

OSHA Vacated PELs: Dimethoxymethane: 1000 ppm TWA; 3100 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 to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European

Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Clear liquid

Odor: chloroform-like - pungent odor

Vapor Pressure: 440 mbar @ 20 deg C

Evaporation Rate: 1.5 (ether=1)

Boiling Point: 41 - 42 deg C @ 760

Decomposition Temperature: Not available.

Specific

Gravity/Density: 8600g/cm³

Molecular Weight: 76.09

Appearance: colorless

pH: Not available.

Vapor Density: 2.63 (air=1)

Viscosity: 0.33 cP 30 deg C

Freezing/Melting Point: -105 deg C

Solubility: IN WATER: 32.3 G/100 ML (16°C)

Molecular Formula: CH₂(OCH₃)₂

10. STABILITY AND REACTIVITY

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid: Incompatible materials, light, ignition sources, exposure to air, excess heat, exposure to moist air or water.

Incompatibilities with Other Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, formaldehyde.

Hazardous Polymerization: Has not been reported

11. TOXICOLOGICAL INFORMATION

Toxicological Information

RTECS#: CAS# 109-87-5: PA8750000 **LD50/LC50:**

CAS# 109-87-5: Draize test, rabbit, eye: 100 uL Moderate; Inhalation, mouse: LC50

= 57 gm/m³/7H; Inhalation, mouse: LC50 = 57000 mg/m³/7M; Inhalation, rat: LC50

= 15000 ppm; Oral, rabbit: LD50 = 5708 mg/kg; Oral, rat: LD50 = 6653 mg/kg;

Carcinogenicity:

CAS# 109-87-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found **Teratogenicity:** No information found **Reproductive**

Effects: No information found **Mutagenicity:** Mutagenic effects have occurred in experimental animals. **Neurotoxicity:** No information found

12. ECOLOGICAL INFORMATION

Ecotoxicological Information

Ecotoxicity: No data available. No information available.

Environmental: Expected to rapidly volatilize into the atmosphere.

Physical: No information available.

Other: No information available.

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.

14. TRANSPORTATION INFORMATION

US DOT		Canada TDG
Shipping Name:	METHYLAL	METHYLAL
Hazard Class:	3	3
UN Number:	UN1234	UN1234
Packing Group:	II	II
Additional Info:		FLASHPOINT -18 C

15. REGULATORY INFORMATION

US FEDERAL

TSCA

CAS# 109-87-5 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 109-87-5: Effective 6/1/87, 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 # 109-87-5: immediate, 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:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 109-87-5 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

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:

XI F

Risk Phrases:

R 11 Highly flammable.

R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.

S 33 Take precautionary measures against static discharges.

S 9 Keep container in a well-ventilated place.

WGK (Water Danger/Protection)

CAS# 109-87-5: 1

Canada - DSL/NDSL

CAS# 109-87-5 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D2B. 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# 109-87-5 is listed on the Canadian Ingredient Disclosure List.

16. OTHER INFORMATION

Revision Information

Revision Data

7 May 2015

Revision Number 5

Supersedes Revision Dated

7-May-2015

Key

NE= Not Established

NA= Not Applicable

(R) = Registered Trademark

End of MSDS