

Number: 24

Section 1: Product and Company Identification

Product Name: Methyl alcohol
Recommended use and Restrictions on use: Production of formaldehyde and dimethyl terephthalate; chemical synthesis (methyl amine, chloromethane, methyl α -methacrylate, motor vehicle fuel); antifreezing agents; solvents of cellulose nitrates, ethyl cellulose, polyvinyl butyl, resin, lac resin, Manila resin, dyeing; denatured alcohol; water removal agents of natural gas; communal facility factory fuel (methyl fuel); raw materials of continuous fermented synthetic protein; hydrogen sources of fuel cells; family hot-oil spreading agents.
Manufacturer or Supplier Name : Shiny Chemical Industrial Co., Ltd. Address: No.5, Yeong Gong 1st Rd., Yeong An Dist., Kaohsiung City 82841, Taiwan, R.O.C. Telephone: +886-7-861-9171 ext.711~714
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Section 2: Hazards Identification

Hazard Material Category: Flammable liquids Category NO.2, Serious damage/eye irritation Category NO. 2A, Toxic to reproduction Category NO. 2, Specific target organ toxicity - repeated exposure NO.1, Specific target organ toxicity substances – single exposure NO.1

Label Content:



Label Statements: Flammable liquid, Health Hazards, Warning.

Signal Words: Danger

Hazard Statements:

1. Highly flammable liquid and vapour
2. Causes serious eye irritation
3. Suspected of damaging fertility or the unborn child
4. Causes damage to organs through prolonged or repeated exposure
5. Causes damage to organs

Precautionary Statements:

1. Keep containers in a well-ventilated place.
2. Keep away from sources of ignition – No Smoking.
3. Avoid long-term exposure.
4. Wear appropriate protective clothing.

Other Hazards : -

Section 3: Composition/Information on Ingredients Pure Material

Chemical Name : Methyl alcohol
Synonymous: Methanol, Wood alcohol, Carbinol, Methylol, Methyl alcohol, Methyl hydrate, Methyl hydroxide, Monohydroxymethane, Wood spirit.
CAS NO.: 67-56-1
By Weight: 100%

Section 4: First Aid Measures

The First aid Measures for Different Exposure Routes:
Inhalation: <ol style="list-style-type: none">1. Remove to fresh air.2. If breathing stops, have trained personnel administer artificial respiration. Administer cardiopulmonary resuscitation (CPR) immediately if the heart has stopped.3. Get medical attention immediately.
Skin Contact: <ol style="list-style-type: none">1. Wash with warm water for at least 20 minutes.2. Remove contaminated clothing, shoes, and leather (watchstraps and belts) when washing.3. Clean contaminated clothing, shoes, and leather thoroughly before reuse or abandon.
Eyes Contact: <ol style="list-style-type: none">1. Immediately lift eyelids, flushing eyes with plenty of warm water for at least 20 minutes.2. Get medical attention immediately.
Ingestion: <ol style="list-style-type: none">1. Never give anything by mouth to an unconscious person.2. Induce vomiting.3. Have victim drink 2 teaspoons of soda into a cup of water.4. If vomiting occurs, lean victim forward to reduce the risk of ingesting vomits.5. Repeat administering water.6. Get medical attention immediately.
The most Important Symptoms and Hazardous Effects: Alcoholism-like, blindness, death.
The Protection of First-Aid Staffs: Use appropriate personal protective equipment such as class C clothing to take first aid in a safety area.
Notes to Physicians: Symptoms may delay. Ethanol may inhibit the metabolism of methanol.



Section 5: Fire Fighting Measures

Suitable Fire Extinguishing Media: Chemical dry, carbon dioxide, water mist, foam.

Specific Hazards May be Encountered During Fire-Fighting: The ignition of methanol has invisible flames in daytime.

Specific Fire-Fighting Method:

1. Don't extinguish fire unless the leak can be stopped.
2. Spray water mist to disperse vapors and dilute leaks into the incombustible.
3. Use plenty of water mist to extinguish fire. Spouts are invalid.
4. Cool containers with plenty of water mist until fire stops.

Specific Equipment for the Protection of Firefighters: Extinguishing staffs should wear coverall-type chemical protective clothing, and respirators (wear flash-resistant aluminum coats if necessary).

Section 6: Accidental Release Measures

Personal Precautions: Restrain personnel from close to spilled areas.

Environment Needing Attention:

1. Supply adequate protective apparatus and ventilation equipments.
2. Remove heat sources and flames.

Spill Cleanup Measure:

1. Do not touch spilled materials.
2. Try to stop or reduce leaks under safety permission.
3. Avoid leaks to flush to sewer or confined space.
4. Use sand, soil, and inert absorbing agents to block leaks.
5. Recycle liquids and place in appropriate marked containers.
6. Absorb residual leaks by inert absorbing agents and place in containers with lids.
7. Spray water on spilled areas.
8. Contaminated absorbing agents have same risk as leaks.

Section 7: Handling and Storage Methods

Handling:

1. Place in an assigned and well-ventilated area with minimum storage.
2. Away from the heat sources or naked lights.
3. Use spark resistant containers.
4. Have containers with earth connection when moving or mixing.
5. Avoid producing mist droplets when operating.
6. Wear appropriate eye and skin protective equipments against spray.

Storage:

1. Keep containers cool, dry, place and away from general workplaces and incompatible substances.
2. Independent exhaust ventilation without heat sources, naked light, and sparks.



3. Store it in the qualified safe container.
4. Cover containers when not used. Place in fire-resistant cabinets with earth connection.
5. A containment dike of storage and work area should be made up of solvent-resistant compounds.

Section 8: Exposure Controls and Personal Protection

Engineering Controls:

1. Use spark-resistant and earth-connection ventilation systems separately.
2. Direct outside exhaust vents.
3. Supply adequate fresh air to replenish the exhausted air.
4. Local exhaust devices or general ventilation system.

Guideline Information

TWA	TLV-STEL	CEILING	BEI
200ppm(skin)	250ppm(skin)		Urinary methyl alcohol 15mg/L (B、Ns)

Personal Protective Equipment:

Respiratory Protection:

1. < 2,000ppm: Air-feed or portable type respiratory protective equipments.
2. < 5,000ppm: Stable flow, air-feed type respiratory protective equipments
3. < 10,000ppm: Full and air-feed type, full-type portable or sealing full-mask, respiratory protective equipments.
4. < 25,000ppm: Positive press, full and air-feed type respiratory protective equipments.

Hand Protection Description: Protective gloves of chloroprene rubber, butyl rubber, natural rubber, polythene, chlorinated polyethylene, fluoroelastomer (FKM), styrene-butadiene, polyvinyl chloride, and polyurethane rubber.

Eye/Face Protection: Chemical safety splash proof and full-type goggles.

Skin and Body Protection Description: Above rubber coveralls, work boots.

Hygiene Measures:

1. Remove contaminated clothing quickly as possible after work. Clean clothing before reuse or abandon. Tell cleaning staffs the harmfulness.
2. Forbid smoking or eating in workplace.
3. After handling this material, wash hands thoroughly.
4. Keep workplace clean.

Section 9: Physical and Chemical Properties

Physical State/Appearance: Colorless liquids	Odor: Light alcohol
Odor Threshold: 4.2-5960ppm (monitor), 53-8940ppm(censor)	Melting Point: -97.8°C

pH Value: -	Boiling Point: < 64.7°C
Flammability: -	Flash point: 12°C
Decompose Temperature: -	Test method: close cup
Auto-ignition Temperature: 385°C	Explosion limits: 6.0% ~ 36.5%
Vapor Pressure: 160 mmHg @ 30°C	Vapor Density: 1.1(air=1)
Density: 0.79 (water=1)	Solubility: Soluble in water.
Log Kow: -0.82- -0.66	Evaporation Rate: 4.1 (N-butyl acetate=1)

Section 10: Stability and Reactivity**Chemical Stability:** Stable under ordinary conditions.**Possible Danger Reacts Under the Special State:**

1. Alkali
2. Acids
3. Aldehydes
4. Acid chloride

Conditions to Avoid: Heat, flames, and ignition sources.**Incompatible with Other Materials:** Strong oxidizing agents, alkali, acids, aldehydes, acid chloride.**Hazardous Decomposition Products:** Carbon dioxide, carbon monoxide (combustion).**Section 11: Toxicological Information****Exposure Route:** Skin, inhalation, ingestion, eyes.**Signs/Symptoms:** Cough headaches, dizziness, faintness, tiredness, lightheadedness, nausea, vomiting, drunkenness, blurred vision, unconsciousness, blindness, euphoria, babble, short breath, severe upper abdominal pain, dermatitis, and erythema.**Acute Toxicity:****Skin Contact:**

This material can be absorbed in toxic amounts through the skin.

Inhalation:

1. It may cause to cough, headaches, dizziness, faintness, tiredness, lightheadedness, nausea, vomiting, drunkenness, and blurred vision.
2. Unconsciousness, blindness, and death follow massive exposure to methanol.

Ingestion :

1. The initial symptoms are similar to like alcoholism (euphoria, loss of judgment, babble, and attacks).
2. May be followed by short breath, severe upper abdominal pain, blurred vision, and permanent blindness.
3. Sever as long-term coma and death.



4. Symptoms appear after 1~30 days of delay (generally 12~18 hours).

Eye Contact :

1. Vapors can irritate eyes.
2. Cornea damage of surface tissue from contact with liquids is reversible.

LD50: 5,628 mg/kg (rat, swallow)

LC50: 64,000 ppm/4H (rat, inhalation)

20mg/24H (rabbit, skin) cause middle irritating.

Chronic Toxicity or Long Term Effects on Humans:

1. It may cause dermatitis, erythema, and skin peeling.
2. Long term exposure to 1200~8300ppm may damage vision, sometimes blindness.
3. It may damage kidney, heart, and other organs,
4. The dose of 60-250 ml can be lethal.

7500mg/Kg (pregnant rats 17-19 days, swallow) may cause newborn toxicity.

Section 12: Ecological Information

Ecotoxicity:

LC50 (fish) : 11-15mg/l/96H

EC50 (aquatic invertebrate) : -

BCF: 0.2-10

The Persistence and Degradability:

1. When released into water, this material may evaporate and biodegrade.
2. When released into the air, this material may react with photo chemically produced hydroxyl radicals and have a half-life of about 17.8 days.

Half-life (Air): 427 hours

Half-life (Water surface): 5.3-64 hours

Half-life (Groundwater): -

Half-life (Soil): -

Bio-accumulative Potential: -

Mobility in Soil: When released into the soil, this material may biodegrade, evaporate and permeate through soil.

Other Adverse Effects: -

Section 13: Disposal Considerations

Methods of waste Disposal:

1. Incinerate in an approved area.
2. Use plenty of water to flush to sewer at small amount.
3. Waste must be disposed of in accordance with environmental regulations..

Section 14: Transport Information

United Nations Number (UN No): 1230
UN Proper Shipping Name: Methyl Alcohol
Transport Hazard Class(es): CLASS 3, 6.1
Packaging Group: II
Marine Pollutants (Yes/No): No
Specific Transport Measures and Precautionary Conditions: The classification is based on human experience and does not meet application of the classification criterion.

Section 15: Regulatory Information

Applicable Regulation: 1. Labor Safety and Health Law. 2. Dangerous Chemical Material Symbol Act. 3. Fire Services Act.

Section 16: Additional Information

References	1. CHEMINFO database, CCINFO CD-RAW, 2005-3 2. HAZARDTEXT database, TOMES PLUS CD-RAW, Vol.65, 2005 3. RTECS database, TOMES PLUS CD-RAW, Vol.65, 2005 4. HSDB database, TOMES PLUS CD-RAW, Vol.65, 2005 5. ChemWatch database, 2005-1
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Notes	Above symbol in data "- "stand for at present check have not relative to data, But symbol "/" stand for this' field to should material application.