

Material Safety Data Sheets

1. IDENTIFICATION

Product Name	Methanol
Other Names	Methyl Alcohol; Methyl hydroxide; Pyroxylic Spirit; Wood alcohol
Code No	100-MA-2
Uses	Manufacture of formaldehyde, acetic acid and dimethyl terephthalate, chemical synthesis (methyl amines, methyl chloride, methyl methacrylate), antifreeze; solvent for nitrocellulose, ethylcellulose, polyvinyl butyral, shellac, rosin, manila resin, dyes; nenaturant for ethanol; dehydrator for natural gas; fuel for utility plants (methyl fuel); feedstock for manufacture of synthetic proteins by continuous fermentation; source of hydrogen for fuel cells; home- heating-oil extender.
Chemical Family	No Data Available
Chemical Formula	CH ₄ O
Chemical Name	Methanol
Product Description	No Data Available
Company	Arman sina.co
Contact Information	info@armansina.com www.armansina.com

2. HAZARD IDENTIFICATION

Hazard Categories	Highly Flammable Toxic
Risk Phrases	Highly flammable. Toxic by inhalation, in contact with skin and if swallowed. Toxic : danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
Safety Phrases	Keep away from sources of ignition - No smoking. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Keep container tightly closed.

Symbol



3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients

Chemical Entity	Formula	CAS Number	Proportion
Methanol	CH ₄ O	67-56-1	99.5 %

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed	Rinse mouth with water. Do NOT induce vomiting. Seek immediate medical attention. Do NOT delay.
Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes. Seek immediate medical attention.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor. Seek immediate medical attention.
Inhaled	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing. Seek immediate medical attention.
Advice to Doctor	Watch for toxic effects which may be delayed, including chemical pneumonitis. Contact Poison Information Centre for antidote treatment with ethyl alcohol. Central nervous system depression, and acidosis from methanol metabolites, including formaldehyde liver function and optic nerve, and other effects should be treated symptomatically.
Medical Conditions Aggravated by Exposure	No information available on medical conditions aggravated by exposure to this product.

5. FIRE FIGHTING MEASURES

General Measures	Evacuate area and contact emergency services. Remain upwind and notify those downwind of hazard. Keep out of low areas. Eliminate all ignition sources including cigarettes, open flames, spark producing switches/tools, heaters, naked lights, pilot lights, mobile phones etc. when handling. Earth containers when dispensing fluids. Move fire exposed containers from fire area if it can be done without risk.
Flammability Conditions	Extremely flammable liquid and Vapour.
Extinguishing Media	Dry agent, carbon dioxide, foam or water fog. Prevent contamination of drains or waterways. Alcohol resistant foam is the preferred firefighting medium. Use waterfog to cool intact containers and nearby storage areas.
Fire and Explosion Hazard	Vapour may form explosive mixtures with air. Vapours are heavier than air and may travel some distance to an ignition source and flash back.
Hazardous Products of Combustion	May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.
Special Fire Fighting Instructions	Do NOT allow fire fighting water to reach waterways, drains or sewers. Store fire fighting water for treatment.
Personal Protective Equipment	Fire fighters should wear a positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves) or chemical splash suit.
Flash Point	11°C
Lower Explosion Limit	6.7 %
Upper Explosion Limit	36.5 %
Auto Ignition Temperature	No Data Available
Hazchem Code	WE

6. ACCIDENTAL RELEASE MEASURES

General Response Procedure	Avoid accidents, clean up immediately. Increase ventilation. Avoid walking through spilled product as it is slippery when spilled. Use clean, non-sparking tools and equipment. Contact emergency services where appropriate.
Clean Up Procedures	Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar). When saturated collect material, transfer to suitable, labelled, dry chemical-waste containers and dispose of promptly as hazardous waste.
Containment	Stop leak if safe to do so. Isolate the area.
Environmental Precautionary Measures	Do NOT let product reach drains or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Management.
Evacuation Criteria	Evacuate all unnecessary personnel.

7. HANDLING AND STORAGE

Handling	Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment. Avoid contact with eyes, skin and clothing. Do not inhale product vapours. Avoid prolonged or repeated exposure. Before use carefully read the product label. Prohibit eating, drinking and smoking in contaminated areas.
Storage	Store in a cool, dry, well-ventilated area. Keep containers tightly sealed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Ground and bond storage containers. Store away from incompatible materials as listed in section 10. Store removed from oxidising agents, acids, alkalis, heat or ignition sources and foodstuffs. Large storage areas should have appropriate fire protection systems. This product has a UN classification of 1230, Dangerous Goods Class 3 (flammable), and Subsidiary Risk 6 (toxic) according to the Australian Code for the Transport of Dangerous Goods By Road and Rail.
Container	Store in original packaging as approved by manufacturer.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

General	<p>The following exposure standard has been established by The Australian Safety and Compensation Council (ASCC); Methanol CAS 67-56-1: TWA = 200ppm (262mg/m³) STEL = 250ppm (328mg/m³) 'Sk' Notice.</p> <p>NOTE: The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week. 'Sk' Notice - Absorption through the skin may be a significant source of exposure. The exposure standard is invalidated if such contact should occur. These exposure standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.</p>
Exposure Limits	No Data Available
Biological Limits	<p>Ingredient: Methanol</p> <p>Reference: ACGIH BEI</p> <p>Determinant: Methanol in urine</p> <p>Sampling Time: End of shift</p> <p>BEI: 15 mg/L</p>
Engineering Measures	Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical explosion proof extraction ventilation is recommended. Flammable/explosive vapours may accumulate in poorly ventilated areas. Vapours are heavier than air and may travel some distance to an ignition source and flash back. Maintain vapour levels below the recommended exposure standard.
Personal Protection Equipment	<p>RESPIRATOR: Wear an approved respirator with suitable Type 'A' filter for organic gases and vapours. At high vapour levels, wear an Air-line respirator (AS1715/1716).</p> <p>EYES: Wear a faceshield and safety glasses and splash-proof goggles. (AS1336/1337).</p> <p>HANDS: Wear PVC or neoprene gloves. (AS2161).</p> <p>CLOTHING: Chemical-resistant coveralls, PVC splash apron and safety footwear (AS3765/2210).</p>
Work Hygienic Practices	No Data Available

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Liquid
Appearance	Liquid
Odour	Alcohol odour
Colour	Clear, Colourless
pH	No Data Available
Vapour Pressure	128 hpa

Relative Vapour Density	1.11 Air = 1
Boiling Point	64.5 °C
Melting Point	-98 °C
Freezing Point	No Data Available
Solubility	Soluble
Specific Gravity	0.79
Flash Point	11 °C
Auto Ignition Temp	No Data Available
Evaporation Rate	No Data Available
Bulk Density	No Data Available
Corrosion Rate	No Data Available
Decomposition Temperature	No Data Available
Density	No Data Available
Specific Heat	No Data Available
Molecular Weight	No Data Available
Net Propellant Weight	No Data Available
Octanol Water Coefficient	No Data Available
Particle Size	No Data Available
Partition Coefficient	No Data Available
Saturated Vapour Concentration	No Data Available
Vapour Temperature	No Data Available
Viscosity	No Data Available
Volatile Percent	100%
VOC Volume	No Data Available
Additional Characteristics	No Data Available
Potential for Dust Explosion	Product is a liquid.
Fast or Intensely Burning Characteristics	Vapours are heavier than air and may travel some distance to an ignition source and flash back.
Flame Propagation or Burning Rate of Solid Materials	No Data Available
Non-Flammables That Could Contribute Unusual Hazards to a Fire	No Data Available
Properties That May Initiate or Contribute to Fire Intensity	No Data Available
Reactions That Release Gases or Vapours may form explosive mixtures with air. Vapours	
Release of Invisible Flammable Vapours and Gases	No Data Available

10. STABILITY AND REACTIVITY

General Information	Extremely flammable liquid and Vapour.
Chemical Stability	No Data Available
Conditions to Avoid	No Data Available
Materials to Avoid	Incompatible with oxidising agents (eg. hypochlorites), acids (eg. nitric acid), alkalis (eg. hydroxides), heat and ignition sources.
Hazardous Decomposition Products	May evolve toxic gases (carbon oxides, hydrocarbons) when heated to decomposition.
Hazardous Polymerisation	No Data Available

11. TOXICOLOGICAL INFORMATION

General Information	<p>LC50 (inhalation) 50 g/m³/2 hours (mouse) LCLo (inhalation) 1000 ppm (monkey) LD50 (ingestion) 5628 mg/kg (rat) LD50 (skin) 15,800 mg/kg (rabbit) LDLo (ingestion) 143 mg/kg (human) LDLo (skin) 393 mg/kg (monkey) TCLo (inhalation) 300 ppm human (visual effects) TDLo (ingestion) 3429 mg/kg (man-visual change)</p> <p>This product has the potential to cause adverse health effects.</p> <p>Use safe work practices to avoid eye or skin contact and inhalation. Methanol primarily affects the central nervous system, with symptoms of headache, nausea, vomiting and dizziness. Damage to the optic nerves may occur with chronic or high level exposure, causing visual problems and possible blindness.</p> <p>Experimental teratogen</p>
Eyelrritant	Moderate irritant. Contact may result in watering of the eyes, stinging or blurred vision and sensitivity to light.
Ingestion	Toxic if swallowed. Toxic : danger of very serious irreversible effects if swallowed. Ingestion can result in nausea, vomiting, severe abdominal pain, back pain, central nervous system effects including optic nerve damage (hyperaemia etc), convulsions, blindness, loss of consciousness and ultimately proceed to coma and death. See "chronic" effects.
Inhalation	Toxic y inhalation. Toxic : danger of very serious irreversible effects through inhalation. Over exposure to vapours may result in mucous membrane irritation of the respiratory tract. Inhalation of vapour may result in headache, nausea, central nervous system effects and visual impairment, possibly blindness. Continued exposure can result in health effects as per ingestion.
SkinIrritant	Toxic in contact with skin. Toxic : danger of very serious irreversible effects in contact with skin. Irritant. Contact may result in drying and defatting of the skin. May be absorbed through skin with harmful effects.
Carcinogen Category	No Data Available

12. ECOLOGICAL INFORMATION

Ecotoxicity	<p>Aquatic toxicity: Arthropoda toxicity No effect level (Daphnia) is 10 g/L/48 hours. Fish toxicity: TLm (Trout) is 8000 mg/L/48 hours. Amphibian toxicity: LDlo (frog) = 59 gm/kg.</p> <p>Chronic aquatic toxicity possible above 32 ppm.</p>
Persistence/Degradability	It is expected to biodegrade in both soil and water.
Mobility	If spilt on soil it is expected to be susceptible to significant leaching, as well rapid evaporation from dry surfaces is likely to occur.
Environmental Fate	<p>Avoid contaminating waterways, drains and sewers.</p> <p>If released to the atmosphere methanol degrades via reaction with photochemically produced hydroxyl radicals.</p>
Bioaccumulation Potential	No Data Available
Environmental Impact	No Data Available

13. DISPOSAL CONSIDERATIONS

General Information	<p>Dispose of in accordance with all local regulations.</p> <p>All empty packaging should be disposed of in accordance with Local Regulations or recycled/reconditioned at an approved facility.</p>
Special Precautions for Land Fill	<p>Contact a specialist disposal company or the local waste regulator for advice.</p> <p>Wearing the protective equipment outlined, ensure all ignition sources are extinguished.</p> <p>For small quantities, absorb on paper, sand or similar and evaporate under a fume cupboard or open area.</p> <p>For large volumes, atomise into incinerator (mixing with more flammable solvent if required) or recycle by gravimetric separation, distilling & reusing.</p>

14. TRANSPORT INFORMATION

Land Transport

Proper Shipping Name	METHANOL
Class	3 Flammable Liquids
Subsidiary Risk(s)	6.1 Toxic and Infectious Substances - Toxic Substances
ERG	131 Flammable Liquids - Toxic
UN Number	1230
Hazchem	2WE
Pack Group	II
Special Provision	No Data Available

Sea Transport

IMDG Code

Proper Shipping Name	METHANOL
Class	3 Flammable Liquids
Subsidiary Risk(s)	6.1 Toxic and Infectious Substances - Toxic Substances
UN Number	1230
Hazchem	2WE
Pack Group	II
Special Provision	No Data Available
EMS	FE,SD
Marine Pollutant	No

Air Transport

IATA

Proper Shipping Name	METHANOL
Class	3 Flammable Liquids
Subsidiary Risk(s)	6.1 Toxic and Infectious Substances - Toxic Substances
UN Number	1230
Hazchem	2WE
Pack Group	II
Special Provision	No Data Available

15. OTHER INFORMATION

Revision	2
Key/Legend	< Less Than > Greater Than atm Atmosphere CAS Chemical Abstracts Service (Registry Number) cm Square Centimetres CO2 Carbon Dioxide COD Chemical Oxygen Demand Degrees Celcius Degrees Farenheit g Grams g/cm Grams per Cubic Centimetre g/l Grams per Litre HSNO Hazardous Substance and New Organism IDLH Immediately Dangerous to Life and Health immiscible Liquids are insoluable in each other. inHg Inch of Mercury inH2O Inch of Water K Kelvin kg Kilogram kg/m Kilograms per Cubic Metre

lb Pound

LC50 LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.

LD50 LD stands for Lethal Dose. LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.

ltr or L Litre

m Cubic Metre

mbar Millibar

mg Milligram

mg/24H Milligrams per 24 Hours

mg/kg Milligrams per Kilogram

mg/m Milligrams per Cubic Metre

Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present.

mm Millimetre

mmH₂O Millimetres of Water

mPa.s Millipascals per Second

N/A Not Applicable

NIOSH National Institute for Occupational Safety and Health

NOHSC National Occupational Health and Safety Commission

OECD Organisation for Economic Co-operation and Development

Oz Ounce

PEL Permissible Exposure Limit

Pa Pascal

ppb Parts per Billion

ppm Parts per Million

ppm/2h Parts per Million per 2 Hours

ppm/6h Parts per Million per 6 Hours

psi Pounds per Square Inch

R Rankine

RCP Reciprocal Calculation Procedure

STEL Short Term Exposure Limit

TLV Threshold Limit Value

tne Tonne

TWA Time Weighted Average

ug/24H Micrograms per 24 Hours

UN United Nations

wt Weight