

Safety Data Sheet

1. IDENTIFICATION

Product Name:	Methanol
Other Names:	Methyl Alcohol, alcool methylique, alcool metilico (italian), carbinol, colonial spirit, columbian spirit, columbian spirits, metanolo (italian), methylol, methylalkohol (german), methyl hydroxide, metylowy alkohol (polish), monohydroxymethane, pyroxylic spirit, wood alcohol, wood naphtha, wood spirit
Recommended Use:	Manufacture of substances
Supplier:	Global Chemie ASCC Limited.
Street Address:	88/123 Moo 2 Bangpoo Industrial Estate (North), Phraek Sa Mai, Mueang Samutprakan, Samutprakan 10280
Telephone:	+66 2324 6888
Fax:	+66 2324 6898-99
Emergency phone:	+66 2324 6888 ext.320

2. HAZARDS IDENTIFICATION

Hazardous Nature

This product is classified as hazardous under GHS criteria.

Hazardous Classification

No data available.

Hazardous Statement

Flammable Liquid Category 2

Acute Toxicity: Oral Category 3

Acute Toxicity: Skin Category 3

Acute Toxicity: Inhalation Category 3

Specific Target Organ Toxicity (Single exposure) Category 1

GHS Pictograms



Hazard Statements

H225: Highly flammable liquid and vapor.

H301: Toxic if swallowed.

H311: Toxic in contact with skin.

H331: Toxic if inhaled.

H370: Causes damage to organs.

Precautionary Statements

P210: Keep away from heat/sparks/open flames/hot surfaces and non-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 action to prevent static discharges.

P261: Avoid breathing dust/fume/gas/mist/vapours/spray.

P264: Wash thoroughly after handling.

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

P271: Use only outdoors or in a well-ventilated area.

P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

P370+P378: In case of fire: Use manufacturer/supplier or the competent authority to specify appropriate media for extinction.

Response Statements

If on skin

P302 + P352: IF ON SKIN: Wash with plenty of water.

P303+P361+P353: Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

P362 + P364: Take off contaminated clothing and wash it before reuse.

If in eyes

P308 + P316: IF exposed or concerned: Get emergency medical help immediately.

If inhaled

P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

If swallow

P301 + P316: IF SWALLOWED: Get emergency medical help immediately.

P316: Get emergency medical help immediately.

P317: Get medical help.

P330: Rinse mouth.

Storage Statements

P403 + P233: Store in a well-ventilated place. Keep container tightly closed.

P403+P235: Store in a well-ventilated place. Keep cool.

P405: Store locked up.

Disposal Statements

P501: Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied.

Signal Word Danger

3. COMPOSITION: Information on Ingredients

Chemical Ingredient	CAS No.	UN No.	Proportion (%v/v)
Methanol	67-56-1	1230	>99.80

Molecular Formula: CH₃OH

Molecular Weight: 32.04 g/mol

4. FIRST AID MEASURES

For advice, contact Ramathibodi Poisons Centre (Phone : 1367) or a doctor.

Ingestion

Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious

person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Eye Contact

Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 15 minutes. Get medical attention. If necessary, call a poison center or physician.

Skin Contact

Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 15 minutes. Get medical attention. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

First Aid facilities

Provide eye baths and safety showers.

Medical Attention

Treat according to symptoms. Avoid gastric lavage: risk of aspiration of product to the lungs with the potential to cause chemical pneumonitis.

5. FIRE FIGHTING MEASURES

Shut off product that may 'fuel' a fire if safe to do so. Allow trained personnel to attend a fire in progress, providing firefighters with this Safety Data Sheet. Prevent extinguishing media from escaping to drains and waterways.

Suitable extinguishing media

Use dry chemical, CO₂, water spray (fog) or foam.

Precautions for fire fighters and special protective equipment

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Unsuitable extinguishing media

Do not use water jet.

Specific hazards arising from the chemical

Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Run off to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products

Decomposition products may include the following materials: carbon dioxide carbon monoxide.

Special protective actions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

6. ACCIDENTAL RELEASE MEASURES**Emergency Procedures**

Prevent fluid from escaping to drains and waterways. Contain leaking packaging in a containment drum. Prevent vapours from building up in confined areas. Ensure that drain valves are closed at all times. Clean up and report spills immediately.

Methods and materials for containment**Protective Measures**

- Observe all relevant local and international regulations.
- Avoid contact with spilled or released material. Immediately remove all contaminated clothing. For guidance on selection of personal protective equipment see chapter 8 this Material Safety Data Sheet. Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment.

Clean-Up Methods

- ♦ Small spillage (< 200 LT) : Transfer by mechanical means to a labelled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.
- ♦ large spillage (> 200 LT) : Transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

Other Information

Notify authorities if any exposure to the general public or the environment occurs or is likely to occur. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

7. HANDLING AND STORAGE**Precautions for safe handling**

Put on appropriate personal protective equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosionproof electrical (ventilating, lighting and material handling) equipment. Use only nonsparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and wellventilated area, away from incompatible materials and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. EXPOSURE CONTROLS: PERSONAL PROTECTION**Control parameters**

Occupational exposure limits.

<u>Ingredient name</u>	<u>Exposure limits</u>
methanol	Ministry of Interior (Thailand, 7/1977).

	TLV-TWA: 260 mg/m ³ 8 hour(s) TLV-TWA: 200 ppm 8 hour(s)
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Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Appropriate engineering controls

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures**Hygiene measures**

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. Recommended: full-face mask.

Skin protection

Hand protection: Chemical-resistant, impervious gloves complying with an approved standard should be always worn when handling chemical products if a risk assessment indicates this is necessary. >8 hours (breakthrough time): butyl rubber.

Body protection: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory Protection: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: self-contained breathing apparatus (SCBA)

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Unit of Measurement	Typical Value
Appearance	-	Colorless Liquid
Odour	-	Pungent
pH	-	No data available
Boiling point	°C	64.7
Melting point	°C	-97.8
Flash point	°C	9.7 (Closed cup)
Flammability	-	Flammable

Property	Unit of Measurement	Typical Value
Autoignition Temperature	°C	455
Decomposition Temperature	°C	No data available
Lower/Upper Flammability Limits	%V	6-36.5
Density @ 20°C	g/cm ³	0.790-0.792
Specific Gravity @ 20°C	-	0.791-0.793
Viscosity @ 20°C	mPa·s	0.544 - 0.59
Vapor pressure	kPa	16.9
Vapor density	kPa (Air = 1)	1.11
Evaporation Rate	(n-Butyl acetate = 1)	2.1
Water Solubility	-	Miscible
Solubility in other solvents Partition coefficient	(n-octanol/water)	No data available
Coefficient of Thermal Expansion	per Deg °C	No data available
Particle Characteristic	-	No data available

The values listed are indicative of this product's physical and chemical properties. For a full product specification, please consult the Product Data Sheet.

10. STABILITY AND REACTIVITY

Reactivity

No specific test data related to reactivity available for this product or its ingredients.

Chemical stability.

The product is stable.

Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid

Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.

Incompatible materials

Reactive or incompatible with the following materials: oxidizing materials

Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

- ◆ LC₅₀ Acute Inhalation Toxicity : 64,000 mg/kg / 4 hours (rat)
- ◆ LC₅₀ Acute Inhalation Toxicity : 85,400 mg/kg / 4.5 hours (cat)
43,700 mg/kg / 6 hours (cat)
128,200 mg/kg / 4 hours (rat)
- ◆ LC₅₀ Acute Inhalation Toxicity : 16,000 ppm/4 hours (rat)
- ◆ LD₅₀ Acute oral toxicity : 1187 to 2769 mg/kg (rat)
- ◆ LD₅₀ Acute dermal toxicity : 17100 mg/kg (rabbit)
- ◆ LD₅₀ Unreported : 868 mg/kg (Man - Male)

Eye Contact

Irritating to eyes.

Skin Contact

Irritating to skin. Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.

Reproductive toxicity

Suspected of damaging the unborn child.

Aspiration hazard

May be fatal if swallowed and enters airways.

Specific target organ toxicity following single exposure

May cause damage to organs.

Specific target organ toxicity following repeated exposure

May cause damage to organs.

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
methanol	Negative	-	-	Rat-Female	Inhalation: 0.00133 mg/m ³	-

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
methanol	Negative-Inhalation	Rat	0.000133 mg/m ³	-

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure: Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact: No known significant effects or critical hazards

Inhalation: Toxic if inhaled.

Skin contact: Toxic in contact with skin.

Ingestion: Toxic if swallowed

Symptoms related to the physical, chemical and toxicological characteristics

Skin contact: No specific data.

Ingestion: No specific data.

Inhalation: No specific data.

Eye contact: No specific data.

Delayed and immediate effects and also chronic effects from short- and long-term exposure**Short term exposure**

Potential immediate effects: Not available.

Potential delayed effects: Not available.

Long term exposure

Potential delayed effects: Not available

Potential immediate effects: Not available.

12. ECOLOGICAL INFORMATION**Ecotoxicity****Aquatic Toxicity**

Micro-organism	EC50 20000 mg/l Fresh water	15 hours
Daphnia	Acute EC50 >10000 mg/l Fresh water	48 hours
Crustaceans - Crangon crangon - Adult	Acute LC50 2500000 ug/L Marine water	48 hours
Daphnia - Daphnia magna Neonate - <24 hours	Acute LC50 3289 to 4395 mg/L Fresh water	48 hours
Fish - Lepomis macro chirus	Acute LC50 15400 mg/l Fresh water	96 hours
Algae - Selenastrum capricornutum	Chronic EC50 22000 mg/l Fresh water	96 hours
Micro-organism - Tubiflex tubiflex	Chronic EC50 71700 mg/l	3 minutes
Fish - Oryzias latipes	Chronic NOEC 7900 mg/l Fresh water	-

Persistence/ degradability

This product readily biodegrades on exposure to light and air.

Mobility

Soil/water partition coefficient (KOC): 0.13 to 1

13. DISPOSAL CONSIDERATIONS**Disposal Methods****Material Disposal**

Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classifications and disposal methods in compliance with applicable regulations.

Container Disposal

Drain container thoroughly. After draining, vent in a safe place away from sparks and fire. Refer to Section 7 before handling the product or containers. Residues may cause an explosion hazard. Do not puncture, cut or weld uncleaned drums. Send to drum recovered or metal reclaimer.

Local Legislation

Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied

14. TRANSPORT INFORMATION

Road and Rail Transport		Marine Transport		Air Transport	
UN No.	1230	UN No.	1230	UN No.	1230
Class/Item	3, 6.1	Class/Item	3, 6.1	Class/Item	3, 6.1
Hazard Symbol	Flammable Liquid Toxic	Hazard Symbol	Flammable Liquid Toxic	Hazard Symbol	Flammable Liquid Toxic
Proper Shipping Name	METHANOL	Proper Shipping Name	METHANOL	Proper Shipping Name	METHANOL
Pack Group	II	Pack Group	II	Pack Group	II

Road and Rail Transport		Marine Transport		Air Transport	
Additional information	-	Additional information	Emergency scheduled (Ems) F-E,S-D Remark This product is being carried under the scope of Annex II (MARPOL)	Additional information	Passenger and cargo Aircraft Quantity limitation: 1 L Packaging instruction:352 Cargo Aircraft Only Quantity limitation: 60 L Packaging instruction:364 Passenger Aircraft Quantity limitation: 1L Packaging instruction: Y341

15. REGULATORY INFORMATION

National Inventory List

Australia inventory (AICS): All components are listed or exempted.

China inventory (IECSC): All components are listed or exempted.

Japan inventory: All components are listed or exempted.

Korea inventory: All components are listed or exempted.

New Zealand Inventory of Chemicals (NZIC): All components are listed or exempted.

Philippines inventory (PICCS): All components are listed or exempted.

United States inventory (TSCA 8b): All components are listed or exempted.

Europe inventory: All components are listed or exempted.

Canada inventory: All components are listed or exempted.

16. OTHER INFORMATION

National Fire Protection Association (USA) : No data available.

SDS Distribution : The information contained herein is based on our current knowledge of the underlying data and is intended to describe the product for the purpose of health, safety and environmental requirements only. No warranty of guarantee is expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product.

Prepared By : Quality Control Department / Global Chemie ASCC Limited

Abbreviations:

AICS: Australian Inventory of Chemical Substances

CAS Number: Chemical Abstracts Number

IARC: International Agency for Research on Cancer

NOHSC: National Occupational Health and Safety Council

ADN/ADNR = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway

ADR = The European Agreement concerning the International Carriage of

Dangerous Goods by Road

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

MARPOL 73/78 = International Convention for the Prevention of Pollution From

Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail

UN = United Nations

Log Pow = logarithm of the octanol/water partition coefficient

References:

- Supplier Safety Data Sheets
- <http://chem.sis.nlm.nih.gov/chemidplus> (September 25)
- <http://hsis.safework.gov.au/SearchHS.aspx> (September 25)
- Ecotoxicology data: http://cfpub.epa.gov/ecotox/quick_query.htm (historical)
- *Sax's Dangerous Properties of Industrial Materials*, Richard J. Lewis Snr., pub. Canada (2000)

The information sourced for the preparation of this document was correct and complete at the time of writing to the best of the writer's knowledge. The document represents the commitment to the company's responsibilities surrounding the supply of this product, undertaken in good faith. This document should be taken as a safety guide for the product and its recommended uses but is in no way an absolute authority. Please consult the relevant legislation and regulations governing the use and storage of this type of product. No warranty and guarantee are expressed or implied regarding the accuracy of these data or the results to be obtained from the use of the product for further information, please contact Global Chemie ASCC Limited.