

1. Product and Company Identification

Material name	METHANOL
Version #	05
Revision date	04-08-2011
CAS #	67-56-1
Product Codes	J.T.Baker: 5217, 5370, 5595, 5794, 5811, 5842, 9049, 9063, 9065, 9066, 9067, 9069, 9070, 9072, 9073, 9076, 9077, 9091, 9093, 9096, 9097, 9098, 9193, 9263, 9423, 9424, 9830, 9863, XL319 Macron: 12210, 3004, 3016, 3017, 3041, 72690, 8814, 8818, H080, H488, H603, V184, V465, V571
Synonym(s)	Wood alcohol * Carbinol * Methyl Alcohol
Manufacturer	Avantor Performance Materials, Inc.
Address	222 Red School Lane Phillipsburg, NJ 08865 US
Customer Service	800-582-2537
24 Hour Emergency	908-859-2151
Chemtrec	800-424-9300

2. Hazards Identification

Emergency overview	DANGER -- POISON Flammable liquid and vapor. May be fatal or cause blindness if swallowed. Cannot be made nonpoisonous. Harmful if inhaled or absorbed through skin. Causes skin and eye irritation. High vapor concentrations may cause drowsiness and irritation of the eyes or respiratory tract. May cause harm to the unborn child. Prolonged exposure may cause chronic effects.
OSHA regulatory status	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects	
Routes of exposure	Inhalation. Skin contact. Eye contact. Ingestion.
Eyes	Causes eye irritation. High vapor/aerosol concentrations may be irritating.
Skin	Causes skin irritation. Prolonged or repeated contact with skin may cause redness, itching, irritation and eczema/chapping.
Inhalation	May cause irritation of respiratory tract. Toxic effects exerted upon nervous system, particularly the optic nerve. Once absorbed into the body, it is very slowly eliminated. Symptoms of overexposure may include headache, drowsiness, nausea, vomiting, blurred vision, blindness, coma and death. A person may get better but then worse again up to 30 hours later.
Ingestion	Poison - may be fatal if swallowed. Even small amounts (30-250 ml methanol) may be fatal. Symptoms are stomach ache, nausea, vomiting, dullness, visual disorder and blindness.
Target organs	Eyes. Skin. Central nervous system. Liver.
Chronic effects	In serious cases absorption of methanol in the body may lead to damage to the eyesight. May cause adverse reproductive effects - such as birth defects, miscarriages, or infertility based on animal data. May cause central nervous system disorder (e.g., narcosis involving a loss of coordination, weakness, fatigue, mental confusion and blurred vision) and/or damage. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Potential environmental effects	The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
METHANOL	67-56-1	99 - 100

4. First Aid Measures

First aid procedures

Eye contact	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
Skin contact	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration. Get medical attention.
Ingestion	Call a physician or poison control center immediately. Do not induce vomiting. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Notes to physician

Symptoms may be delayed. Treat symptomatically.

General advice

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire Fighting Measures

Flammable properties HIGHLY FLAMMABLE! Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Heat may cause the containers to explode.

Extinguishing media

Suitable extinguishing media Water spray. Foam. Dry powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

Protection of firefighters

Specific hazards arising from the chemical Can be ignited easily and burns vigorously. Vapor from the solvent may accumulate in container headspace resulting in flammability hazard.

Protective equipment and precautions for firefighters Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Move containers from fire area if you can do so without risk. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. Some of these materials, if spilled, may evaporate leaving a flammable residue. Cool containers exposed to flames with water until well after the fire is out.

Special protective equipment for fire-fighters As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Specific methods In the event of fire and/or explosion do not breathe fumes. Use water spray to cool unopened containers.

Hazardous combustion products Carbon monoxide and carbon dioxide.

6. Accidental Release Measures

Personal precautions Wear appropriate protective equipment and clothing during clean-up. Keep unnecessary personnel away. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Local authorities should be advised if significant spillages cannot be contained.

Environmental precautions Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

Methods for containment

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas. Dike the spilled material, where this is possible.

Methods for cleaning up

Use only non-sparking tools. All equipment used when handling the product must be grounded.

Large Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Dike far ahead of spill for later disposal.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Collect in a non-combustible container for prompt disposal.

Never return spills in original containers for re-use. Clean surface thoroughly to remove residual contamination. Clean up in accordance with all applicable regulations.

J. T. Baker SOLUSORB® solvent adsorbent is recommended for spills of this product.

7. Handling and Storage

Handling

DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. Wear appropriate personal protective equipment. Avoid breathing mist or vapor. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment.

Storage

Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children. Keep container tightly closed in a cool, well-ventilated place. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

8. Exposure Controls / Personal Protection

Occupational exposure limits**ACGIH****Material****Type****Value**

METHANOL (67-56-1)

BEL

15.0000 mg/l

STEL

250.0000 ppm

TWA

200.0000 ppm

U.S. - OSHA**Material****Type****Value**

METHANOL (67-56-1)

PEL

200.0000 ppm

260.0000 mg/m3

Engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Explosion proof exhaust ventilation should be used.

Personal protective equipment**Eye / face protection**

Chemical goggles and face shield are recommended.

Skin protection

Wear appropriate chemical resistant clothing. Wear appropriate chemical resistant gloves.

Respiratory protection

Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

General hygiene considerations

Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical & Chemical Properties

Appearance	Clear.
Color	Colorless.
Odor	Characteristic.
Odor threshold	Not available.
Physical state	Liquid.
Form	Liquid.
pH	Not available.
Melting point	-144.4 °F (-97.8 °C)
Freezing point	-144.4 °F (-97.8 °C)
Boiling point	149 °F (64.7 °C)
Flash point	53.6 °F (12 °C) Closed Cup
Evaporation rate	5.9 BuAc
Flammability limits in air, upper, % by volume	36
Flammability limits in air, lower, % by volume	7.3
Vapor pressure	16.9316 kPa
Vapor density	1.1
Specific gravity	0.7866
Relative density	Not available.
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	-0.77
Auto-ignition temperature	464 °F (240 °C)
Percent volatile	100 %
Molecular weight	32.04 g/mol
Molecular formula	C-H4-O

10. Chemical Stability & Reactivity Information

Chemical stability	Stable under normal temperature conditions.
Conditions to avoid	Heat, flames and sparks. Sunlight.
Incompatible materials	Strong oxidizing agents. Contact with metals may evolve flammable hydrogen gas.
Hazardous decomposition products	Irritants. Toxic gas. Carbon oxides. Formaldehyde.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information

Toxicological data

Product

METHANOL (67-56-1)

Test Results

Acute Dermal LD50 Rabbit: 15800 mg/kg

Acute Inhalation LC50 Rat: 87.5 mg/l 6.00 Hours

Acute Oral LD50 Rat: 5628 mg/kg

Sensitization Not a skin sensitizer.

US ACGIH Threshold Limit Values: Skin designation

METHANOL (CAS 67-56-1)

Can be absorbed through the skin.

Acute effects	May be fatal or cause blindness if swallowed. Cannot be made nonpoisonous. Harmful if inhaled or absorbed through skin.
Local effects	Causes eye irritation. Irritating to skin. High vapor concentrations may cause drowsiness and irritation of the eyes or respiratory tract.
Chronic effects	May cause central nervous system effects. In serious cases absorption of methanol in the body may lead to damage to the eyesight. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
Skin corrosion/irritation	Causes skin irritation.
Epidemiology	No epidemiological data is available for this product.
Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Neurological effects	High vapor/aerosol concentrations (attainable only at elevated temperatures) may cause central nervous system effects such as dizziness, drowsiness or headaches. Central and/or peripheral nervous system damage.
Reproductive effects	Suspected of damaging fertility or the unborn child.
Symptoms and target organs	Irritation. Drowsiness and dizziness. Blindness. Cough. Shortness of breath. Unconsciousness.
Further information	Danger of very serious irreversible effects. Symptoms may be delayed.

12. Ecological Information

Ecotoxicological data

Product	Test Results
METHANOL (67-56-1)	EC50 Water flea (Daphnia magna): > 10000 mg/l 48.00 hours LC50 Fathead minnow (Pimephales promelas): > 100 mg/l 96.00 hours

Ecotoxicity The product components are not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Environmental effects Ecological injuries are not known or expected under normal use.

Persistence and degradability Expected to be readily biodegradable.

Partition coefficient (n-octanol/water) -0.77

13. Disposal Considerations

Waste codes

US RCRA Hazardous Waste U List: Reference

METHANOL (CAS 67-56-1)

U154

Disposal instructions Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. All wastes must be handled in accordance with local, state and federal regulations.

Contaminated packaging Since emptied containers retain product residue, follow label warnings even after container is emptied. Residual vapors may explode on ignition; do not cut, drill, grind, or weld on or near this container. Offer rinsed packaging material to local recycling facilities.

14. Transport Information

DOT

Basic shipping requirements:

UN number	UN1230
Proper shipping name	Methanol
Hazard class	3

Subsidiary hazard class 6.1
Packing group II
Additional information:
Special provisions IB2, T7, TP2
Basic shipping requirements:
Labels required 3
Additional information:
Packaging exceptions 150
Packaging non bulk 202
Packaging bulk 242
Reportable quantity 5000
ERG number 131

IATA

Basic shipping requirements:
UN number 1230
Proper shipping name Methanol
Hazard class 3
Subsidiary hazard class 6.1
Packing group II
Additional information:
ERG code 3P

IMDG

Basic shipping requirements:
UN number 1230
Proper shipping name METHANOL
Hazard class 3
Subsidiary hazard class 6.1
Packing group II



DOT



IATA



IMDG

15. Regulatory Information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
 All components are on the U.S. EPA TSCA Inventory List.

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

METHANOL (CAS 67-56-1) 1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

METHANOL (CAS 67-56-1) Listed.

CERCLA (Superfund) reportable quantity

METHANOL: 5000.0000

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - Yes
Pressure Hazard - No
Reactivity Hazard - No

Section 311 hazardous chemical
Yes

Clean Air Act (CAA)
HAPS list

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations
This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - New Jersey Community RTK (EHS Survey): Reportable threshold

METHANOL (CAS 67-56-1) 500 LBS

US - Pennsylvania RTK - Hazardous Substances: Listed substance

METHANOL (CAS 67-56-1) Listed.

Saf-T-Data
Health: 3 - Severe (Poison)
Flammability: 3 - Severe (Flammable)
Reactivity: 1 - Slight
Contact: 3 - Severe (Life)
Lab Protective Equip: DB - GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
Storage Color Code: R - Red (Flammable)

16. Labeling Info

Label Hazard Warning
DANGER -- POISON
FLAMMABLE LIQUID AND VAPOR. May be fatal or cause blindness if swallowed. Cannot be made nonpoisonous. Harmful if inhaled or absorbed through skin. Causes skin and eye irritation. High vapor concentrations may cause drowsiness and irritation of the eyes or respiratory tract. May cause harm to the unborn child. Prolonged exposure may cause chronic effects.

Label Precautions
Keep away from heat, sparks and flame. Take precautionary measures against static discharge. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Use only with adequate ventilation. Keep container closed. Wash thoroughly after handling.

Label First Aid

Immediately flush eyes with plenty of water for at least 15 minutes. Immediately flush skin with plenty of water. If gas/fume/vapor/dust/mist from the material is inhaled, remove the affected person immediately to fresh air. Get medical attention immediately. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Do not use mouth-to-mouth method if victim ingested the substance.

17. Other Information

NFPA ratings

Health: 2
Flammability: 3
Instability: 0

Disclaimer

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04-08-2011

This data sheet contains changes from the previous version in section(s):

This document has undergone significant changes and should be reviewed in its entirety.