



Safety Data Sheet

AERO 12



AEROCHEM

1. Identification

Product identifier	METHYL HYDRATE
Product code	SOL1220LT; SOL12205LT
Other means of identification	Methanol. Methyl alcohol.
Recommended use of the chemical and restrictions on use	Organic solvent used in industrial processes.
Manufacturer	AEROCHEM Inc. 5977 Trans Canada Highway Pointe-Claire, QC H9R 1C1 Canada Tel. 514-630-2800 General Information: 1-888-592-5837 Fax 514-630-2828 www.aerochem.ca
Emergency phone number	Quebec Poison Center: 1-800-463-5060 (toll free in QC) Ontario and Manitoba Poison Centres: 1-800-268-9017 or 419-813-5900 BC Drug and Poison Information Centre: 1-800-567-8911 (toll free in BC) or contact your local poison control centre in the state/province or territory where you live. INFOTRAC® 1-800-535-5053. International call collect: 1-352-323-3500 24 hours/day, 7 days/week.

2. Hazard identification

Summary	Flammable liquid. Keep away from heat, sparks and open flame. Avoid contact with skin, eyes and clothing. Do not breathe vapours, mists or aerosols. Do not ingest. If medical advice is needed, have this SDS or label at hand. Make sure to wear personal protective equipment mentioned in this Safety Data Sheet.
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WHMIS 2015/OSHA HCS 2012/GHS



Flammable liquids (Category 2)
Acute toxicity, oral (Category 3)
Acute toxicity, dermal (Category 3)
Acute toxicity, inhalation (Category 3)
Specific target organ toxicity, single exposure (Category 1)

DANGER

H225: Highly flammable liquid and vapour

H301 + H311 + H331: Toxic if swallowed, in contact with skin or if inhaled

H370: Causes damage to organs

P210: Keep away from heat, sparks, open flames and other ignition sources. No smoking.

P240: Ground or bond container and receiving equipment.

P241: Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.

P242: Use only non-sparking tools.

P243: Take precautionary measures against static discharge.

P260: Do not breathe vapours.

P264: Wash skin 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 and eye protection.
 P308+313: IF exposed or concerned: Get medical attention.
 P301+P330+P310: IF SWALLOWED: Rinse mouth and immediately call a POISON CENTER or physician.
 P303+361+353: IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water and soap or take a shower if necessary.
 P363: Wash contaminated clothing before reuse.
 P304+P340+P311: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician.
 P312: Call a POISON CENTER or doctor/physician if you feel unwell.
 P370+378: In case of fire: Use chemical foam, dry chemical or carbon dioxide to extinguish.
 P403+P235+P233: Store in a well-ventilated place. Keep container tightly closed. Keep cool.
 P405: Store locked up.
 P501: Dispose of contents and container to an approved waste disposal plant.

3. Composition/information on ingredients

Common name	CAS	Weight % content
Methanol	67-56-1	60 - 100 %

4. First-aid measures

Inhalation	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen by trained personnel. If a problem develops or persists, seek medical attention.
Skin contact	Flush with water for at least 15 minutes. Remove contaminated clothing and wash before reuse. Avoid touching eyes with contaminated body parts. If a problem develops or persists, seek medical attention.
Eye contact	IMMEDIATELY flush with plenty of water. Remove contact lenses if easy to do. Flush with water for at least 15 minutes. Hold eyelids apart to rinse properly. If a problem develops or persists, seek medical attention.
Ingestion	DO NOT induce vomiting, unless recommended by medical personnel. Never give anything by mouth if victim is unconscious or convulsing. If victim is conscious wash out mouth with plenty of water. If spontaneous vomiting occurs, keep head below hip level to prevent aspiration into the lungs. Seek medical attention or contact a Poison Centre immediately.
Other	No information available.
Symptoms	May cause slight irritation to eyes. Methyl Alcohol (CAS no 67-56-1) poisoning begins with a depression of the central nervous system leading to narcosis, followed by a symptomless period which usually lasts 12 to 24 hours. Metabolic acidosis sets in and then symptoms such as headaches, dizziness, nausea and vomiting occur.
Notes to the physician	Use Ethyl alcohol as an antidote for the treatment of methyl alcohol poisoning. If ingestion occurred in of less than 2 hours, proceed carefully with a gastric wash. Administer 50% Ethyl alcohol in a proportion of ½ to 1 ml per kg body weight, every 2 or 4 hours for 4 days. If gastric lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire-fighting measures

Suitable extinguishing media	Dry chemicals, water spray, alcohol resistant foam, carbon dioxide (CO ₂). Do not use a heavy water jet.
Specific hazards arising from the chemical	Highly flammable liquid and vapour. The product burns emitting an almost invisible blue flame. May be ignited by heat, sparks, flame or static electricity. Vapours are heavier than air and may travel to an ignition source distant from the material handling point. The aqueous solutions of methanol can also be ignited. Contact with strong oxidizers may cause fire.

Special protective equipment	Firefighters must wear self contained breathing apparatus with full face mask. Firefighting suit may not be efficient against chemicals.
Special protective actions for fire-fighters	Use water spray to cool fire-exposed containers. Water may be ineffective to extinguish a fire, because mixtures of methyl alcohol and water are also flammable.

6. Accidental release measures


Personal precautions, protective equipment and emergency procedures	Do not touch spilled material. Make sure to wear personal protective equipment mentioned in this Safety Data Sheet.
Environmental precautions	Prevent entry into sewers, closed areas and release to the environment. For a large spill, consult the Department of Environment or the relevant authorities.
Methods and materials for containment and cleaning up	Remove sources of ignition. Ventilate the area well. Stop leak, if it's possible to do so without risk. Make sure you have a fire extinguisher near you. Absorb with inert material (soil, sand, vermiculite) and place in an appropriate waste disposal clearly identified. Use non-sparking and antistatic tools. Dispose via a licensed waste disposal contractor. Finish cleaning by rinsing with water contaminated surface.

7. Handling and storage

Precautions for safe handling	Keep away from heat, sparks and open flame. Avoid all sources of ignition. Avoid static electricity build up. Use non-sparking and antistatic tools. Ground/bond all containers when transferring large quantities (5 gallons US or 20 L and more). Use only in well ventilated area. Do not breathe vapours, mists or aerosols. Avoid contact with skin, eyes and clothing. Wear eye protection, gloves and other protective clothing that are adapted to the task being performed and the risks involved. Keep only the quantities necessary for the work being performed in the work area. Keep containers tightly closed when not in use. Do not eat, do not drink and do not smoke during use. Wash hands, forearms and face thoroughly after handling this compound and before eating, drinking or using toiletries. Remove contaminated clothing and wash before reuse.
Conditions for safe storage, including any incompatibilities	Storage and handling should follow the NFPA 30 Flammable and/or Combustible Liquids Code and the National Fire Code of Canada (NFCC). Ground or bond large containers. Store tightly closed and in properly labelled containers in a cool, dry and well ventilated place. Container must be stored in fireproof cabinet. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Store away from oxidizing materials and incompatible materials (see section 10).
Storage temperature	10 to 25°C (50 to 77°F)

8. Exposure controls/personal protection

Immediately Dangerous to Life or Health	Methanol : 6000 ppm.		
Methanol	STEL	250 ppm	ACGIH , BC, ON
		250 ppm	328 mg/m ³
	TWA (8h)	200 ppm	ACGIH , BC, ON
		200 ppm	262 mg/m ³
Appropriate engineering controls	Provide sufficient mechanical ventilation (general or local exhaust) to keep the airborne concentrations of vapours, mists, aerosols or dust below their respective occupational exposure limits.		

Individual protection measures	
Eye	If there is a risk of contact with eyes, wear chemical splash goggles. If risk of contact with eyes or the face wear chemical splash goggles and a face shield. If respiratory hazards exist, a full face respirator may be required instead.
Hands	Chemical-resistant, impervious gloves should be worn at all times when handling this chemical product. Wear nitrile or neoprene gloves. Before using, user should confirm impermeability. Discard gloves with tears, pinholes, or signs of wear. Gloves must only be worn on clean hands. Wash gloves with water before removing them. After using gloves, hands should be washed and dried thoroughly.
Skin	Personal protective equipment for the body should be selected based on the task being performed and the risks involved. Wear normal work clothing covering arms and legs as required by employer code. Wear appropriate chemical impervious clothing. Wear a neoprene or synthetic apron to prevent contact with skin. To clean up a spill, if necessary, wear a synthetic polyethylene coveralls such as the Tychem (DuPont) or equivalent coveralls manufactured to provide protection against liquid chemical.
Respiratory	Where the conditions in the workplace require a respirator, it is necessary to follow a respiratory protection program. Moreover, respiratory protection equipment (RPE) must be selected, fitted, maintained and inspected in accordance with regulations and standard 29 CFR 1910.134 (OSHA), ANSI Z88.2 or CSA Z 94.11 (Canada) and approved by NIOSH/MSHA. In case of insufficient ventilation or in confined or enclosed space and for an assigned protection factor (APF) up to 10 times of exposure limit, wear a half mask respirator with organic vapour cartridges. For an APF until maximum 100 times of exposure limit, wear a full face mask respirator with organic vapour cartridges.
Feet	Wear rubber boots to clean up a spill.
 Goggles Nitrile gloves Neoprene apron	

9. Physical and chemical properties

Physical state	Liquid	Flammability	Flammable.
Colour	Colourless	Flammability limits	5.5 to 36.5%
Odour	Mild alcohol odor	Flash point	11.1°C (52°F) Setaflash closed cup
Odour threshold	4.2 ppm	Auto-ignition temperature	464°C (867.2°F)
pH	7	Sensibility to electrostatic charges	Yes
Melting point	-98°C (-144.4°F)	Sensibility to sparks and/or friction	N.Av.
Freezing point	-98°C (-144.4°F)	Vapour density	1.1 (Air = 1)
Boiling point	65°C (149°F)	Relative density	0.79 kg/L @ 20°C (68°F) (Water = 1)
Solubility	Fully soluble in water.	Partition coefficient n-octanol/water	-0.82 to -0.64
Evaporation rate	> Butyl Acetate	Decomposition temperature	N/Av.
Vapour pressure	12.3kPa (92.3 mm Hg) @ 20°C (68°F)	Viscosity	0.59 cSt @ 20°C (68°F)
Percent Volatile	100%	Molecular mass	32.04

N/Av.: Not Available

N/Av.: Not Available

Und.: Undetermined

N/E: Not Established

10. Stability and reactivity

Reactivity	Contact with strong oxidizers may cause fire. It can attack some metals such as copper, zinc, magnesium, tin, lead and aluminum.
Chemical stability	Stable under recommended storage conditions.
Possibility of hazardous reactions (including polymerizations)	A dangerous reaction will not occur.
Conditions to avoid	Avoid heat, flame and sparks. Avoid contact with incompatible materials.
Incompatible materials	Strong oxidants, bleach, peroxides, perchlorates, halogens, nitric acid (HNO ₃), chromic acid, perchloric acid, nitrites, nitrates, isocyanates, water reactive materials, acetaldehyde.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information


Numerical measures of toxicity	Methanol Ingestion 5600 mg/kg Rat LD50 183 mg/kg Human Inhalation 83.8 mg/l/4h Rat LC50 Skin 15800 mg/kg Rabbit LD50
Likely routes of exposure	Skin, eyes, inhalation, ingestion.
Delayed, immediate and chronic effects	<p>Eye contact May cause slight irritation to eyes. Eye Irritation/Corrosion, Rabbit (OECD TG 405): 0.1 mL undiluted with not rinsed. Test Draize, mild irritating effect. An aqueous methanol 25% solution is not irritating.</p> <p>Skin contact Prolonged and repeated contact may cause drying and cracking of the skin. Skin Irritation/Corrosion, Rabbit (OECD 404) : Not irritating. Case of methanol (CAS no 67-56-1) poisoning by the dermal route in human is very rare due to the high volatility of the product. Widespread contact with skin for several hours can cause large amounts of material to be absorbed and cause toxic effects similar to those for ingestion.</p> <p>Inhalation Toxic if inhaled. In the workplace, the product is rapidly absorbed by respiratory tract. Overexposure may cause irritation of the upper respiratory tract. Inhalation of vapours may cause central nervous system depression such as drowsiness, headache, dizziness, vertigo, nausea and fatigue. The severity of symptoms may vary depending on exposure conditions. Excessive prolonged exposure may cause methanol (CAS no 67-56-1) poisoning with symptoms similar to those for ingestion exposure.</p> <p>Ingestion Toxic by ingestion. Accidental methanol (CAS no 67-56-1) poisoning occurs frequently by ingestion. Methyl Alcohol (CAS no 67-56-1) poisoning begins with a depression of the central nervous system leading to narcosis, followed by a symptomless period which usually lasts 12 to 24 hours. Metabolic acidosis sets in and then symptoms such as headaches, dizziness, nausea and vomiting occur. In more severe cases, this is followed with abdominal and muscle pain, breathing difficulties, loss of vision up to blindness. Apathy or delirium progressing sometimes rapidly to coma and death. Generally ingesting 60 mL (2 Oz) to 235 mL (8 Oz) of methanol is fatal to humans. The human minimum lethal dose of methanol is estimated between 300 and 1000 mg/kg.</p> <p>Respiratory or skin sensitization This product is not a skin or respiratory sensitizer.</p> <p>IARC/NTP Classification No ingredients listed.</p> <p>Carcinogenicity Not listed as a carcinogen by IARC, ACGIH, NIOSH, NTP or OSHA.</p> <p>Mutagenicity This material is not known to cause mutagenic effect.</p>

	<p>Reproductive toxicity This material is not known to cause effects on reproduction.</p> <p>Specific target organ toxicity - single exposure Visual organs, central nervous system.</p> <p>Specific target organ toxicity - repeated exposure Visual organs, central nervous system.</p>
Interactive effects	Ethanol, carbon tetrachloride, toluene, dichloromethane, chloroform.
Other information	Humans are uniquely sensitive to the toxic effects of methanol.

12. Ecological information

Ecological toxicity	<p>Fish - Lepomis macrochirus - Bluegill LC50 15400 mg/L; 96 h (CAS no 67-56-1)</p> <p>Aquatic Invertebrate - Daphnia Magna, Water flea, fresh water EC50 >10000 mg/L ; 48h (CAS no 67-56-1)</p> <p>Algae - Chlorella pyrenoidosa EC50 28400 mg/L ; 10-14 days (CAS no 67-56-1)</p>
Persistence	Not persistent in aquatic environment.
Degradability	Methanol is readily biodegradable under aerobic and anaerobic conditions (OECD Test Guideline 301D). His atmospheric degradation (OH radical attack) in air has a half-time T _{1/2} of 17 to 18 days.
Bioaccumulative potential	Methanol is soluble in water and has a low Bioconcentration Factor (BCF) <10 and a log Kow of -0.74. It is not expected to accumulate in food chains.
Mobility in soil	Methanol will rapidly evaporate into the atmosphere and it has a high mobility in soil based on the high solubility in water.
Other adverse effects	This chemical does not deplete the ozone layer.



13. Disposal considerations

	<p>Container Important! Prevent waste generation. Use in full. DO NOT dispose residue in sewers, streams or drinking water supply. Organic solvents and wastes residues can be reprocessed (recycle) where there is a recovery program. Residues and empty containers must be considered as hazardous waste. Dispose via a licensed waste disposal contractor. Observe all federal, state/provincial and municipal regulations. If necessary consult the Department of Environment or the relevant authorities.</p>
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14. Transport information

UN Number	UN 1230
UN Proper Shipping Name	METHANOL
Environmental hazards	This material is not listed as a marine pollutant.
Special precautions for user	Permit required for transportation with proper DANGER placards displayed on vehicle.

TDG - Transportation of Dangerous Goods (Canada)

Transport hazard class(es)	  Class 3 Class 6.1
Packing group	II
Emergency response guidebook 2016	131
IMO/IMDG - International Maritime Transport	
Classification	UN 12630. METHANOL. Class 3 (6.1) PG II. Emergency schedules (EmS-No) F-E, S-D
IATA - International Air Transport Association	
Classification	UN 12630. METHANOL. Class 3 (6.1) PG II.
<small>These transportation classifications are provided as a customer service. As the shipper YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. In addition, if a domestic exemption exists, it is the responsibility of the shipper to define the application of it.</small>	

15. Regulatory information

CANADA

Common name	CAS	CEPA	DSL	NDSL	NPRI
Methanol	67-56-1	X	X		X

- CEPA: List of Toxic Substances Managed Under Canadian Environmental Protection Act
- DSL: Domestic Substances List Inventory
- NDSL: Non-Domestic Substances List Inventory
- NPRI: National Pollutant Release Inventory Substances

UNITED STATE OF AMERICA

Common name	CAS	TSCA	CER CLA	EPCRA 313	EPCRA 302/304	CAA 112(b) HON	CAA 112(b) HAP	CAA 112(r)	CWA 311	CWA Prio.
Methanol	67-56-1	X	X	X		X	X			

- TSCA: Toxic Substance Control Act
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act list of hazardous substances
- EPCRA 313: Emergency Planning and Community Right-to-Know Act, Section 313 Toxic Chemicals
- EPCRA 302/304: Emergency Planning and Community Right-to-Know Act, Section 302/304 Extremely Hazardous Substances
- CAA 112(b) HON: Clean Air Act - Hazardous Organic National Emission Standard for Hazardous Air Pollutant
- CAA 112(b) HAP: Clean Air Act - Hazardous Air Pollutants lists pollutants
- CAA 112(r): Clean Air Act - Regulated Chemicals for Accidental Release Prevention
- CWA 311: Clean Water Act - List of Hazardous Substances
- CWA Priority: Clean Water Act - Priority Pollutant list

California Proposition 65

Common name	CAS	Cancer	Reproductive and Developmental Toxicity
Methanol	67-56-1		X

Other regulations

WHMIS 1988

B2 D1B D2A D2B

Class B2 : Flammable Liquid

Class D1B : Toxic material causing immediate and serious toxic effects

Class D2A : Very toxic material causing other toxic effects

Class D2B : Toxic material causing other toxic effects

HMIS**NFPA**

TM/MD

16. Other information

Date (YYYY-MM-DD)	AEROCHEM INC. 2017-11-13
Version	02
Other information	<p>DATE OF FIRST VERSION OF SDS: 2014-11-10.</p> <p>CHANGES MADE IN THE VERSION 02: sections 1, 2, 12 and 15.</p> <p>REFERENCES:</p> <ul style="list-style-type: none"> - Haz-Map, Information on Hazardous Chemicals and Occupational Diseases, http://hazmap.nlm.nih.gov/index.php - Service du répertoire toxicologique de la Commission des normes, de l'équité, de la santé et de la sécurité du travail (CNESST), http://www.reptox.csst.qc.ca - TOXNET Databases, Toxicology Data Network, NIH U.S. National Library of Medicine, http://toxnet.nlm.nih.gov/ - Database, Institut National de Recherche et de Sécurité, http://www.inrs.fr/accueil/produits/bdd.html - IPCS INCHEM, Chemical Safety Information from Intergovernmental Organizations, Canadian Centre for Occupational Health and Safety (CCOHS), Copyright International Programme on Chemical Safety (IPCS), http://www.inchem.org - NIOSH Pocket Guide to Chemical Hazards, Centers for Disease Control and Prevention, NIOSH Publications, 2007, http://www.cdc.gov/niosh/npg/npg.html - OECD Existing Chemicals Database, Chemicals Screening Information DataSet (SIDS) for High Volume Chemicals, UNEP publications, http://webnet.oecd.org/HPV/UI/Search.aspx - High Production Volume (HPV) Chemical Challenge Program, U.S. EPA, http://www.epa.gov/hpv/ <p>ACGIH: American Conference of Governmental Industrial Hygienists AIHA: American Industrial Hygiene Association HMIS: Hazardous Materials Identification System NFPA: National Fire Protection Association OSHA: Occupational Safety and Health Administration (USA) NIOSH: National Institute for Occupational Safety and Health NTP: National Toxicology Program RSST: Règlement sur la santé et la sécurité du travail (Québec) GHS: Globally Harmonized System IARC: International Agency for Research on Cancer IDLH: Immediately Dangerous to Life or Health STEL: Short Term Exposure Limit (15 min) TWA: Time Weighted Averages WHMIS: Workplace Hazardous Materials Information System</p>

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