

CYCLO[®] INDUSTRIES, LLC

MATERIAL SAFETY DATA SHEET

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This MSDS is being provided to your company for the purpose of providing current health and safety information to your management and for your employees who work with this product. Please read the information on these sheets and then provide this information to those people at your company whose responsibility it is to comply with FEDERAL, STATE and COMMUNITY RIGHT TO KNOW regulations. Also, make this information available to any employee who requests it.

If Cyclo Industries, LLC considers the formula of this product to be a trade secret, the exact chemical names of the ingredient(s) and the percentages in which they are combined will not appear in the body of this sheet. The exact composition is available upon request to physicians, industrial hygienists and other health professionals.

SECTION 1 - PRODUCT IDENTIFICATION

Product Name: Cyclo[®] C-97 & C-98 Air Brake Anti-Freeze Common Code #: B150

Chemical Name: Methyl Alcohol

Hazardous Material Description: DOT & IMDG – METHANOL, Class 3, UN1230, II

NFPA Hazard Rating: HEALTH = 3 FLAMMABILITY = 3 REACTIVITY = 0

SECTION 2 - PHYSICAL DATA

Boiling Point: 148°F (64°C) Specific Gravity (H₂O=1): 0.791

Vapor Pressure (mm Hg): 96 @ 68°F Vapor Density (AIR=1): 1.1

Percent Volatile By Volume: <99% Percent Solids By Weight: n/a

pH: n/a Solubility in Water: Totally miscible

Melting Point: -144°F (-98°C)

Appearance and Odor: Product may be either a blue or clear, colorless liquid with a faint characteristic alcohol smell.

Volatile Organic Compound (VOC) (as packaged minus water): 100%

SECTION 3 - HAZARDOUS INGREDIENTS

<u>CAS Reg. No.</u>	<u>Material</u>	<u>Percentage</u>	<u>Exposure Limits</u>
67-56-1	Methyl Alcohol	> 98%	200 ppm (skin)* / ACGIH TWA 250 ppm (skin) / ACGIH STEL 200 ppm (skin) / OSHA TWA 250 ppm (skin) / OSHA STEL

* (skin) notation indicates that absorption through the skin can contribute significantly to overall exposure.

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

Flash Point: 52°F (11.1°C)

Method Used: Closed cup

Autoignition Temperature: 725°F (385°C)

Extinguishing Media: Use halon or carbon dioxide extinguishers or alcohol foam for small fires. Water spray or fog can cool fire but may not be effective in extinguishing fire. Large fires should be extinguished with alcohol foam. Use water spray to cool containers exposed to fire.

Flammable Limits In Air % By Volume at:

Lower Explosion Limit (LEL): 6

Upper Explosion Limit (UEL): 36.5

Special Fire Fighting Procedures: Keep unnecessary people away. Isolate hazard area and deny entry. Avoid breathing vapors, stay upwind. Wear NIOSH approved self-contained breathing respirator in the positive pressure mode and chemical protective clothing specifically recommended for methanol. Container may explode in heat of fire.

Unusual Fire and Explosion Hazards: Dangerous fire and explosion hazard when exposed to heat or flame.

Methanol is extremely flammable and forms explosive mixtures with air. Methanol vapors may travel considerable distance to a source of ignition and flash back.

SECTION 5 - HEALTH HAZARD DATA

Effects of Overexposure:

Ingestion: Headache, weakness, drowsiness, lightheadedness, nausea, vomiting, drunkenness, irritation of the eyes and blurred vision. There is usually a latency period during which the acute symptoms may disappear, then relapse. Symptoms during relapse include nausea, vomiting, dizziness and headache. Visual disturbances up to and including blindness almost always occur during the relapse. Liver toxicity may also occur.

Inhalation: Headache, weakness, drowsiness, lightheadedness, nausea, vomiting, drunkenness, irritation of the eyes and blurred vision. There is usually a latency period during which the acute symptoms may disappear, then relapse. Symptoms during relapse include nausea, vomiting, dizziness and headache. Visual disturbances up to and including blindness almost always occur during the relapse. Liver toxicity may also occur.

Skin Contact: Solvent action acts as a defatting agent which can result in dermatitis.

Eye Contact: Irritant

SECTION 5 - HEALTH HAZARD DATA continued

Chronic Effects of Overexposure: Headache, dizziness, nausea, vomiting, weakness, vertigo, chills, unsteady gait, dermatitis, edema of the arms, gastric pain, insomnia, blurred vision, constricted visual fields, changes in color perception, double vision and blindness. Methanol has also been reported to cause shooting pains in the lower extremities and multiple neuritis, characterized by numbness and prickling on the skin and shooting pain in the back of the hands and forearms. Sleep disturbances and digestive problems may also occur. Methanol is a defatting agent and can cause dermatitis.

Carcinogenicity: NTP Carcinogen = No; IARC Monographs = No; OSHA Regulated = No

Potential Adverse Chemical Interactions: Persons with existing skin, kidney, liver or eye disorders may be at increased risk when exposed to methanol. Methanol may enhance the toxicity of carbon monoxide.

First Aid Procedures:

- Ingestion: If the person is conscious, induce vomiting immediately, then give two teaspoons of baking soda in a glass of water. Do not induce an unconscious person to vomit. Get medical attention immediately.
- Skin Contact: Promptly wash the contaminated skin with soap and water. If this chemical penetrates the clothing, promptly remove the clothing and wash the skin with soap and water. Systemic effects may be delayed by 18 to 72 hours, therefore, keep individual under observation.
- Inhalation: Move the exposed person to fresh air at once and call emergency medical care. If breathing has stopped, give artificial respiration. If breathing is difficult, give humidified oxygen.
- Eye Contact: Immediately wash the eyes with large amounts of room temperature water for at least 15 minutes, occasionally lifting the lower and upper lids. Get medical attention immediately. A follow up visit to an ophthalmologist should be made. Contact lenses should not be worn when working with this chemical.

SECTION 6 - REACTIVITY DATA

Stability: Stable

Conditions to Avoid: Heat, sparks, open flame, oxidizing conditions

Incompatibility (materials to avoid): Strong oxidizing agents, aluminum, zinc, or metals that displace hydrogen, rubber and rubber based coatings, chromic anhydride, lead perchlorate and perchloric acids.

Hazardous Decomposition Products: Excessive heating and/or incomplete combustion will produce carbon monoxide and toxic vapors such as formaldehyde.

Hazardous Polymerization: Will not occur.

SECTION 7 - SPECIAL PROTECTION INFORMATION

Respiratory Protection: Do not use air purifying respirator. Use appropriate NIOSH approved supplied air or self-contained respirator to prevent overexposure. Respirators must be selected based on the airborne levels found in the workplace and must not exceed the working limits of the respirator.

Ventilation: Provide local ventilation to maintain exposure levels below recommend exposure limits. Use explosion proof ventilation.

Protective Gloves: Use natural rubber or neoprene gloves.

Eye Protection: Use splash proof chemical safety goggles or appropriate full-face respirator. Where there is any possibility that an individual's eyes may be exposed to methanol, an eye wash fountain should be within the immediate work area for emergency use. Contact lenses should not be worn when working with this chemical.

Other Protective Equipment: Provide impervious clothing.

Work/Hygienic Practices: Eye washes and safety showers in the workplace are recommended.

SECTION 8 - SPILL OR LEAK PROCEDURES

Steps To Be Taken In Case Material Is Released or Spilled: Shut off sources of ignition. No smoking or flares allowed in the spill area. Restrict access to spill area, and move unprotected personnel upwind of the area. Keep out of low areas. Allow only trained personnel wearing appropriate protective clothing and self contained respirator in the positive pressure mode in the vicinity of the spill. Do not touch spilled material; stop leak if you can do so without risk. If fire potential exists, cover spill with foam. Prevent methanol from entering water bodies, drains and any sewage collection systems. Methanol will float on water and the runoff will present an explosion or fire hazard. For small spill take up with sand or other non-combustible absorbent material and place into containers for later disposal. Control large spills by diking. Methanol spills over the reportable quantity of 5,000 lbs. must be reported to the National Response Center (800) 242-8802.

Waste Disposal Method: Dispose of in accordance with local, state and federal regulations. Before attempting clean up, refer to other sections of this MSDS for hazard caution information.

SECTION 9 - SPECIAL PRECAUTIONS

Precautions To Be Taken In Handling and Storage: Store in a well ventilated place away from sources of ignition, combustibles, oxidizing materials and acid. Store in an area equipped with automatic sprinklers or fire extinguishing system. Large quantities should be stored in metal tanks or drums. Ground and bond metal storage containers and all transfer lines to prevent possible ignition from static sparks. Use spark resistant equipment to store methanol. Since emptied containers retain produce residues, assume emptied containers to have same hazards as full containers. Wear appropriate protective equipment.

Other precautions: Provide suitable training for those working with methanol.

SECTION 10 – ANIMAL TOXICITY DATA

Oral: Rat LD₅₀ is 5.6 g/kg; Mouse LD_{LO} is 0.42 g/kg; Rabbit LD₅₀ is 14.4 g/kg; Monkey LD₅₀ is 7.0 g/kg; Human TD_{LO} is 3.4 g/kg; Human LD_{LO} is 6.4 g/kg.

Dermal: Rabbit LD₅₀ is 15.8 g/kg; Monkey LD_{LO} is 0.39 g/kg.

Inhalation: Cat LC₅₀ is 65,700 ppm (4.5 hours); Cat LC₅₀ 33,600 ppm (6 hours).

SECTION 11 – REGULATORY DATA

SARA TITLE III

Section 302 and 304; Extremely Hazardous Substances (40 CFR 355): None

Section 311 Hazard Categorization (40 CFR 370): Acute, Chronic and Fire

Section 313 Toxic Chemicals (40 CFR 372.65): Methanol, CAD #67-56-1, Wt.%=99.85.

CERCLA 101 (14) – Hazardous Substance: RQ 5,000 lbs.

RCRA 40 CFR 261.33 Hazardous waste number: Methanol waste and material contaminated with methanol would be regulated as a hazardous waste material under the hazardous waste number U154.

TSCA: 67-56-1

Date entered: 10/6/92

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