

MATERIAL SAFETY DATA SHEET

IDENTITY: Aromatic Volatile Analytes in Methanol

SECTION I

Manufacturer: Cerilliant Corporation

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SECTION II - HAZARDOUS COMPONENTS/IDENTITY INFORMATION

Hazardous Components	nponents		%	
Benzene			0.2	
Chlorobenzene	Benzene chloride; chlorobenzene; Chlorobenzene ; Chlorobenzene Mono; Chlorobenzol; MCB; monochlorobenzene; Monochlorobenzol; Phenyl Chloride	108-90-7	0.2	
1,2-Dichlorobenzene	o,p-Dichlorobenzene mixture; o-dichlorobenzene; o-Dichlorobenzol; Dichlorobenzene, 1,2-; Dichlorobenzol; Dichloricide; dilantin db; dilatin db; dizene; chloroben; chloroden; cloroben; DCB; dowtherm e; ODB; ODCB; special termite fluid; termitkil	95-50-1	0.2	
1,3-Dichlorobenzene	m-Dichlorobenzene; m-dichlorobenzol; m-Phenylenedichloride; Dichlorobenzene, 1,3-	541-73-1	0.2	
1,4-Dichlorobenzene	PARA; para-Dichlorobenzene; p-dichlorobenzol; p-chlorophenyl chloride; Paracide; Paradow; Paramoth; paranuggets; Para-zene; Dichlorobenzene, 1,4-; Dichlorocide; dichloricide; DCB; Evola; globol; PDB; PDCB; persiaperazol; santochlor		0.2	
Ethylbenzene	ethylbenzol; Ethylenzene; phenylethane		0.2	
Toluene	Antisal La; benzene; methyl; methacide; methane, phenyl-; methylbenzene; methylbenzol; NCI-C07272; phenylmethane; tolueen (Dutch), Toluen (Czech), Toluol (DOT) Toluolo (Italian) Tolu-Sol		0.2	
m-Xylene	1,3-dimethylbenzene; 1,3-Xylene; m-dimethylbenzene; meta-xylene; m-Xylenes; m-xylol		0.2	
o-xylene	1,2-Dimethylbenzene; 1,2-Xylene; o-dimethylbenzene; o-methyltoluene; ortho-xylene; o-Xylenes; o-xylol	95-47-6	0.2	
p-Xylene	1,4-dimethylbenzene; 1,4-Xylene; p-dimethylbenzene; p-methyltoluene; para-xylene; p-Xylenes	106-42-3	0.2	
Methanol	Methyl alcohol, alcool methylique (french), alcool metaillico (Italian), carbinol, Colonial spirit, methanolo (Italian), methylalkohol (German), methyl hydroxide, wood alcohol, metylowy alkohol (Polish)	67-56-1	98.0	

SECTION III – Hazard Identification

Flammable. Highly Flammable (EU). Toxic. Methanol is a human poison by ingestion. Exposure to Methanol may result in severe skin and eye irritation, blindness and narcosis. It can be absorbed through the skin. Target Organs: Eyes. Kidneys.

SECTION IV – First Aid Measures

Eye Contact: Flush eyes with copious amounts of water for a minimum of 15 minutes and transport to a medical facility.

Ingestion: Do not induce vomiting. Give victim large quantities of liquid and transport to a medical facility. **Skin Contact**: Wash affected areas with copious amounts of water and transport to a medical facility.

Inhalation: Remove to fresh air. If breathing is disturbed, give artificial respiration while transporting to a medical facility.

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SECTION V- Fire Fighting Measures

Flash Point: 52°F (11°C) Flammable Limits

Method Used: Closed Cup LEL: 6.0% UEL: 36.5%

Extinguishing Media: Dry chemical, carbon dioxide or Halon extinguisher

Special Fire Fighting Procedures: Wear SCBA and protective clothing to prevent contact with skin and eyes.

Unusual Fire and Explosion Hazards: Flashback along vapor trail may occur.

SECTION VI- Accidental Release Measures

Evacuate area. Remove all sources of ignition. Use inert absorbent to pick up all spilled material. Transfer to a suitable waste container with non-sparking tools. Wash spill site with appropriate cleaning agent to remove residual traces of spilled material.

SECTION VII- Handling and Storage

Handling: Do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged repeated exposure. Wash thoroughly after handling.

Storage: Refrigerate. Protect from light. Keep container closed. Keep away from ignition sources.

SECTION VIII-Exposure Controls/Personal Protection

As appropriate to quantity handled.

Ventilation - Local Exhaust: Use with forced ventilation. **General Mechanical:** Normal laboratory air exchange.

Special: N/A

Respiratory Protection: NIOSH approved cartridge type respirator with organic vapor cartridges recommended.

Eye Protection: Safety glasses with side shields or chemical safety goggles.

Protective Gloves: Compatible chemical resistant gloves. Other Protective Clothing or Equipment: Lab Coat

Work/Hygienic Practices: Only experienced personnel should be allowed to handle this material.

Exposure Limits					
	OSHA PEL	ACGIH TLV	DFG MAK	Other Limits	
Benzene	TWA 1 ppm STEL 5 ppm Peak 5 ppm/15M/8H	TWA 0.5 ppm STEL 2.5 ppm	Human Carcinogen	NIOSH REL TWA 0.32 mg/m ³ CL 3.2 mg/m ³ /15M	
Chlorobenzene	TWA 75 ppm	TWA 10 ppm	10 ppm (47 mg/m³)	N/A	
1,2-Dichlorobenzene	TWA-Ceiling 50 ppm	TWA 25 ppm (skin) STEL 50 ppm	50 ppm (300 mg/m ³)	N/A	
1,3-Dichlorobenzene	N/A	N/A	N/A	N/A	
1,4-Dichlorobenzene	TWA 75 ppm STEL 110 ppm	TWA 75 ppm STEL 110 ppm	50 ppm (300 mg/m ³)	1.7 ppm (LOQ)	
Ethylbenzene	TWA 100 ppm STEL 125 ppm	TWA 100 ppm STEL 125 ppm	100 ppm (440 mg/m³)	NIOSH REL TWA 100 ppm STEL 125 ppm	
Toluene	TWA 100 ppm STEL 150 ppm	TWA 50 ppm	50 ppm (190 mg/m³)	NIOSH REL TWA 100 ppm CL 200 ppm/10M	
m-Xylene	TWA 100 ppm STEL 150 ppm	TWA 100 ppm STEL 150 ppm	N/A	NIOSH REL TWA 100 ppm CL 200 ppm/10M	

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Exposure Limits					
	OSHA PEL	ACGIH TLV	DFG MAK	Other Limits	
o-Xylene	TWA 100 ppm STEL 150 ppm	TWA 100 ppm STEL 150 ppm	N/A	NIOSH REL TWA 100 ppm CL 200 ppm/10M	
p-Xylene	TWA 100 ppm STEL 150 ppm	TWA 100 ppm STEL 150 ppm	N/A	NIOSH REL TWA 100 ppm CL 200 ppm/10M	
Methanol	TWA 200 ppm STEL 250 ppm	TWA 200 ppm STEL 250 ppm	200 ppm	NIOSH REL TWA 200 ppm CL 800 ppm/15M	

SECTION IX-Physical/Chemical Properties

Boiling Point (degrees C): 64.6 (148°F) (Methanol)
Melting Point (degrees C): -98 (Methanol)
Specific Gravity (Water=1): 0.7913 (Methanol)
Vapor Pressure (mmHg): 97 @ 20°C (Methanol)
Vapor Density (Air=1): 1.11 (Methanol)

Evaporation Rate (Butyl Acetate=1): 5.9 (Methanol)

Solubility in Water: Miscible (Methanol)

Appearance and Odor: Clear, colorless liquid, slight alcoholic odor (Methanol).

SECTION X-Stability and Reactivity

Stability: Stable

Conditions to Avoid: Heat, sparks or other sources of ignition.

Incompatible Materials: Acids, acid chlorides, acid anhydrides, oxidizing agents, reducing agents, and alkali metals

Hazardous Dcmp Pdts: Toxic fumes of carbon monoxide and carbon dioxide.

Hazardous Polymerization: Will not occur

Conditions to Avoid: N/A

SECTION XI-Toxicological Information

Routes of Entry: Inhalation? Yes Skin? Yes Ingestion? Yes

Carcinogenicity: NTP? Carcinogen-Benzene

Anticipated Carcinogen1,4-Dichlorobenzene

IARC? Carcinogen-Benzene

Possible Human Carcinogen 1,4-Dichlorobenzene, Ethylbenzene

OSHA? Carcinogen-Benzene

Symptoms of Exposure:

Exposure to Methanol may cause burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting, eye damage, convulsions, fatigue, drowsiness, and central nervous system depression.

Toxicity Data:

Methanol:

oral-man LD_{Lo}:6422 mg/kg oral-man TD_{Lo}:3429 mg/kg oral-human LD_{Lo}:428 mg/kg oral-human LD_{Lo}:143 mg/kg oral-woman TD_{Lo}:4 g/kg mg/kg inhalation-human TC_{Lo}: 86,000 mg/m³ inhalation-human TC_{Lo}: 86300 ppm intraperitoneal-rat LD₅₀:7529 mg/kg intravenous-rat LD₅₀:2131 mg/kg skin-monkey LD_{Lo}:393 mg/kg

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The toxicological properties of this formulation have not been fully investigated. It should be assumed to have toxic effects and, therefore, procedures appropriate for the safe handling of hazardous chemicals should be followed.

SECTION XII-Ecological Information

Acute Toxicity Tests

Fish: Onchorhynuchus mykiss (Rainbow trout): LC₅₀ 19,000 mg/L/96H

Fish: Cyprinus carpio LC $_{50}$ 36,000 mg/L/48H Fish: Daphnia magna EC $_{50}$ 24,500 mg/L/48H Fish: Daphnia magna EC $_{100}$ 19,000 mg/L/24H

SECTION XIII-Disposal Considerations

Waste materials should be disposed of under conditions that meet Federal, State, and Local environmental control regulations. Contact a licensed waste disposal specialist to dispose of this material.

SECTION XIV- Transportation Information

DOT	IATA		
Proper Shipping Name: Methanol	Proper Shipping Name: Methanol		
UN #: 1230	UN #: 1230		
Class: 3	Class: 3		
Packing Group: II	Packing Group: II		
Small quantities exempted	Small quantities exempted		

SECTION XV-Regulatory Information

EU Directives Classification Symbol of Danger: F $\ensuremath{\mathsf{T}}$

Indication of Danger: Highly Flammable. Toxic.

R:11 23/24/25 39/23/24/25

Risk Statements:

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.

S: 7 16 36/37 45

Safety Statements: Keep container tightly closed. Keep away from sources of ignition-no smoking. Wear suitable protective clothing and gloves. In case of an accident or if you feel unwell, seek medical advice immediately.

SARA 313 reporting required.

SECTION XVI-Other Information

The information contained herein is believed to be accurate and is supplied in good faith. Cerilliant Corporation makes no warranty with respect to and assumes no legal responsibility for use of or reliance upon this information. Individuals receiving this data must exercise their own judgement in determining its suitability for a particular purpose.

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