Material Safety Data Sheet

Section 1. Chemical Product and Company Identification

Trade Name: Perchlorate Test

Manufacturer: Haztech Systems, Inc.
PO Box 929
Mariposa, CA 95338

Commercial Name: Methylene blue in methanol

Synonyms: 3,7-Bis(dimethylamino)phenothiazin-5-i um chloride in methanol

Chemical Family: CH3OH, C16H18N3SCl.3H2O

Supplier: Spectrum Chemical Mfg. Corp.
14422 S. San Pedro St.
Gardena, CA 90248

Section 2. Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>TWA (mg/m3)</th>
<th>STEL</th>
<th>CEIL (mg/m3)</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl alcohol</td>
<td>67-56-1</td>
<td>260</td>
<td>325</td>
<td></td>
<td>99%</td>
</tr>
<tr>
<td>Methylene blue</td>
<td>95-45-4 / 61-73-4</td>
<td></td>
<td></td>
<td></td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

Methyl alcohol:
Data on:
ORAL (LD50): Acute: 5628 mg/kg (Rat.).

Methylene blue:
Data on:
ORAL (LD50): Acute: 1180 mg/kg (Rat.).

Section 3. Hazards Identification

Potential Acute Health Effects: Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator). Severe over-exposure can result in death.

Potential Chronic Health Effects: CARCINOGENIC EFFECTS: Classified 4 (No evidence.) by NTP. None. by OSHA. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Classified POSSIBLE for human. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Development toxin [POSSIBLE].

The substance is toxic to the nervous system, gastrointestinal tract, eyes. The substance may be toxic to blood, kidneys, lungs, the reproductive system, liver, heart, brain, cardiovascular system, skin, central nervous system (CNS), pancreas.

Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
Section 4. First Aid Measures

Eye Contact  
Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention.

Skin Contact  
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Inhalation  
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion  
If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Section 5. Fire and Explosion Data

Flammability  
Flammable.

Auto-Ignition Temperature  
464°C (867.2°F)

Flash Point  
CLOSED CUP: 12°C (53.6°F). OPEN CUP: 16°C (60.8°F)

Flammable Limits  
LOWER: 6%  UPPER: 36.5%

Products of Combustion  
These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances  
Highly flammable in presence of open flames and sparks, of heat, of combustible materials.

Explosion Hazards in Presence of Various Substances  
Risks of explosion of the product in presence of mechanical impact: Not available.

Explosion Hazards in Presence of Various Substances  
Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions  
Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder.

Special Remarks on Fire Hazards  
CAUTION: MAY BURN WITH NEAR INVISIBLE FLAME. Explosive when mixed with Choroform + sodium methoxide and diethyl zinc. It boils violently and explodes.

Section 6. Accidental Release Measures

Small Spill  
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Section 7. Handling and Storage

Precautions  
Keep away from sources of accidental ignition. Do not ingest. Do not breathe gas/fumes/vapor/spray. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes.

Storage  
Keep in HazCat Kit.

Section 8. Exposure Controls/Personal Protection

Engineering Controls  
Use in a well ventilated area.

Personal Protection  
Gloves and goggles.
### Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State and Appearance</td>
<td>Clear liquid</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>Not available</td>
</tr>
<tr>
<td>pH (1% Solution in Water)</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling Point</td>
<td>64.5°C (148.1°F) (methanol)</td>
</tr>
<tr>
<td>Melting Point</td>
<td>-97.8°C (-144°F) (methanol)</td>
</tr>
<tr>
<td>Critical Temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>0.796 (Water = 1) (methanol)</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>13.3 kPa (@ 20°C) (methanol)</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>1.11 (Air = 1) (methanol)</td>
</tr>
<tr>
<td>Volatility</td>
<td>Not available</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>Water/Oil Dist. Coeff.</td>
<td>Not available</td>
</tr>
<tr>
<td>Dispersion Properties</td>
<td>See solubility in water, methanol.</td>
</tr>
<tr>
<td>Solubility</td>
<td>Easily soluble in water, methanol.</td>
</tr>
</tbody>
</table>

### Section 10. Stability and Reactivity Data

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>Product is stable</td>
</tr>
<tr>
<td>Instability Temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Conditions of Instability</td>
<td>Not available</td>
</tr>
<tr>
<td>Incompatibility with Various Substances</td>
<td>Highly reactive with oxidizing agents.</td>
</tr>
<tr>
<td>Special Remarks on Reactivity</td>
<td>Reactive with metals</td>
</tr>
<tr>
<td>Corrosivity</td>
<td>Non-corrosive in presence of glass.</td>
</tr>
<tr>
<td>Special Remarks on Corrosivity</td>
<td>Not available</td>
</tr>
<tr>
<td>Polymerization</td>
<td>Will not polymerize</td>
</tr>
<tr>
<td>Special Remarks on Reactivity</td>
<td>Violent reaction with alkyl aluminum salts, acetyl bromide, chloroform + sodium methoxide, chronic anhydride, cyanuic chloride, lead perchlorate, phosphorous trioxide, nitric acid. Exothermic reaction with sodium hydroxide + chloroform. Incompatible with beryllium dihydride, metals (potassium and magnesium), oxidants (barium perchlorate, bromine, sodium hypochlorite, chlorine, hydrogen peroxide), potassium tert-butoxide, carbon tetrachloride, metals (aluminum, magnesium, zinc), and dichlormethane. May attack some plastics, rubber, and coatings.</td>
</tr>
<tr>
<td>Corrosivity</td>
<td>Non-corrosive in presence of glass.</td>
</tr>
<tr>
<td>Special Remarks on Reactivity</td>
<td>Not available</td>
</tr>
<tr>
<td>Polymerization</td>
<td>Will not polymerize</td>
</tr>
</tbody>
</table>

### Section 11. Toxicological Information

<table>
<thead>
<tr>
<th>Route of Entry</th>
<th>Absorbed through skin. Eye contact. Inhalation. Ingestion.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to Animals</td>
<td>Acute oral toxicity (LD50): 5628 mg/kg (Rat.) (methanol).</td>
</tr>
<tr>
<td></td>
<td>Acute dermal toxicity (LD50): 15800 mg/kg (Rabbit.) (methanol).</td>
</tr>
<tr>
<td></td>
<td>Acute toxicity of the vapor (LC50): 64000 4 hours (Rat.) (methanol).</td>
</tr>
<tr>
<td></td>
<td>Very hazardous in case of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant).</td>
</tr>
<tr>
<td>Chronic Effects on Humans</td>
<td>CARCINOGENIC EFFECTS: Classified 4 (No evidence.) by NTP, None. by OSHA. TERATOGENIC EFFECTS: Classified POSSIBLE for human. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Development toxin [POSSIBLE]. Causes damage to the following organs: the nervous system, gastrointestinal tract, eyes. May cause damage to the following organs: blood, kidneys, lungs, the reproductive system, liver, heart, brain, cardiovascular system, skin, central nervous system (CNS), pancreas. Causes damage to the following organs: lungs, mucous membranes.</td>
</tr>
<tr>
<td>Other Toxic Effects on Humans</td>
<td>Hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).</td>
</tr>
<tr>
<td>Special Remarks on Toxicity to Animals</td>
<td>Not available.</td>
</tr>
<tr>
<td>Special Remarks on Chronic Effects on Humans</td>
<td>Not available.</td>
</tr>
<tr>
<td>Special Remarks on Other Toxic Effects on Humans</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
Section 12. Ecological Information

Ecotoxicity
Not available.

BOD5 and COD
Not available.

Products of Biodegradation
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation
The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation
Not available.

Section 13. Disposal Considerations

Waste Disposal
Recycle to process, if possible. Consult your local or regional authorities.

Section 14. Transport Information

DOT Classification
CLASS 3: Flammable liquid.

Identification
: Methyl alcohol UNNA: 1230 PG: II

Special Provisions
Not available.

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations
Rhode Island RTK hazardous substances: Methyl alcohol
Pennsylvania RTK: Methyl alcohol
Minnesota: Methyl alcohol
Massachusetts RTK: Methyl alcohol
New Jersey: Methyl alcohol
California Directors List of Hazardous Substances (8CCR 339): Methyl alcohol
Tennesse Hazardous Right to Know : Methyl alcohol
TSCA 8(b) inventory: Methyl alcohol, TSCA 8(b) inventory: Methylene blue
SARA 313 toxic chemical notification and release reporting: Methyl alcohol
CERCLA: Hazardous substances.: Methyl alcohol: 5000 lbs. (2268 kg)

EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

California Proposition 65 Warnings

Other Regulation
EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other classifications
WHMIS (Canada) CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).
CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).
CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC)  R11- Highly flammable.
R23/24/25- Toxic by inhalation, in contact with skin and if swallowed.
R22- Harmful if swallowed.  R36- Irritating to eyes.

Section 16. Other Information

Part Number(s)
RE2060

References
Not available.

Other Special Considerations
Not available.

Validated by
R. Houghton 5/13/02

Verified by
R. Turkington

Call 1-800-543-5487

Notice to Reader
All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user’s responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Haztech Systems, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.

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