MATERIAL SAFETY DATA SHEET

IDENTITY: Meperidine in Methanol

SECTION I

Manufacturer: Cerilliant Corporation
811 Paloma Drive, Suite A
Round Rock, TX 78665
Emergency Telephone Number: (512) 238-9974
Data Prepared: June 4, 2012

SECTION II - HAZARDOUS COMPONENTS/IDENTITY INFORMATION

<table>
<thead>
<tr>
<th>Hazardous Components</th>
<th>Synonyms</th>
<th>CAS Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>Methyl alcohol, Alcool methylque (French), Alcool metallico (Italian), Carbinol, Colonial spirit, Methanol (Italian), Methylethanol (German), Methyl hydroxide, Wood alcohol, Metilowe alcohol (Polish)</td>
<td>67-56-1</td>
<td>99.9</td>
</tr>
<tr>
<td>Meperidine</td>
<td>Demerol; Dolantin; Ethyl 1-methyl-4-phenylpiperidine-4-carboxylate; isonipeptine; Mepergan; Pamergan; Pethidine</td>
<td>57-42-1</td>
<td>0.1</td>
</tr>
</tbody>
</table>

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: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Ingestion: Do NOT induce vomiting. Rinse mouth with water. Consult a physician.
Skin Contact: Wash off with soap and plenty of water. Consult a physician.
Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration and transport to a medical facility.

SECTION V - Fire Fighting Measures

Flash Point: 52°F (11°C) (Methanol) Flammable Limits
Method Used: Closed Cup LEL: 8.0% UEL: 36.5% (Methanol)

Extinguishing Media: Dry chemical or carbon dioxide 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: Freeze. 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: Compliant chemical resistant gloves.
Other Protective Clothing or Equipment: Lab coat.
Work/Hygienic Practices: Only experienced personnel should be allowed to handle this material.

<table>
<thead>
<tr>
<th>Exposure Limits</th>
<th>OSHA PEL</th>
<th>ACGH TLV</th>
<th>DFG MAK</th>
<th>Other Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol</td>
<td>TWA 200 ppm</td>
<td>TWA 200 ppm</td>
<td>STEL 250 ppm</td>
<td>STEL 250 ppm</td>
</tr>
<tr>
<td>Meperidine</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

SECTION IX-Physical/Chemical Properties

Boiling Point (degrees C): 64.6 (148°F) (Methanol)
Melting Point (degrees C): -68 (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 Decomp Pts: 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? N/A IARC? N/A OSHA? N/A

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. Exposure to Meperidine may cause lightheadedness, dizziness, sedation, nausea, vomiting, sweating, euphoria, dysphoria, weakness, headache, agitation, tremor, uncoordinated muscle movements, transient hallucinations and disorientation, visual disturbances, dry mouth, constipation, biliary tract spasm, flushing of the face, tachycardia, brady cardia, palpitation, hypotension, syncope, urinary retention, pruritus and urticaria.
Toxicity Data:
Methanol:
oral-male LD₅₀: 6422 mg/kg
oral-female LD₅₀: 5429 mg/kg
oral-human LD₅₀: 426 mg/kg
oral-human LD₅₀: 143 mg/kg
oral-women LD₅₀: 4 g/kg mg/kg
inhalation-human TC₅₀: 86000 mg/m²
inhalation-human TC₅₀: 86300 ppm
intraperitoneal rat LD₅₀: 7529 mg/kg
intravenous rat LD₅₀: 2141 mg/kg
skin-monkey LD₅₀: 383 mg/kg

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
Methanol:
Fish: Oncorhynchus mykiss (Rainbow trout): LC₅₀: 19,000 mg/L/48H
Fish: Cyprinus carpio LC₅₀: 36,000 mg/L/48H
Invertebrates: Daphnia magna EC₅₀: 24,000 mg/L/48H
Invertebrates: Daphnia magna EC₅₀: 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

<table>
<thead>
<tr>
<th>DOT</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name: Methanol</td>
<td>Proper Shipping Name: Methanol</td>
</tr>
<tr>
<td>UN #: 1230</td>
<td>UN #: 1230</td>
</tr>
<tr>
<td>Class: 3 (0.1)</td>
<td>Class: 3</td>
</tr>
<tr>
<td>Packing Group: II</td>
<td>Packing Group: II</td>
</tr>
<tr>
<td>Small quantities excepted</td>
<td>Small quantities excepted</td>
</tr>
</tbody>
</table>

SECTION XV-Regulatory Information

EU Directives Classification
Symbol of Danger: F1T
Indication of Danger: Highly Flammable. Toxic.
R: 11-23/24/25-36/23/24/25
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: 7-16-30/37-45
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.
California Prop. 65: WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. [Methanol]
SARA 313: Listed

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.