Material Safety Data Sheet
Dimethyl Carbonate

Effective Date: August 29, 2012 Page 1 of 6

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Trade name: Dimethyl Carbonate
Synonyms: Methyl carbonate
Chemical Name: Carbonic acid, dimethyl ester
Chemical Formula: C3-H6-O3

Company Name: Silver Fern Chemical
2226 Queen Anne Ave N
Seattle, WA 98109
206-282-3376

Emergency Phone Numbers:
CONTACT INFOTRAC: 1-800-535-5053 (24 hours)
001-352-323-3500 (24 hours)

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS Number</th>
<th>Chemical name</th>
<th>Content (W/W)</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>616-38-6</td>
<td>Dimethyl carbonate</td>
<td>99.5</td>
<td>210-478-4</td>
</tr>
</tbody>
</table>

Toxicological Data on Ingredients: Dimethyl carbonate: ORAL (LD50): Acute: 6000 mg/kg [Mouse]. 13000 mg/kg [Rat]. DERMAL (LD50): Acute: &gt; 5000 mg/kg [Rabbit].

3. HAZARD IDENTIFICATION

Potential Acute Health Effects:
Hazardous in case of skin contact (irritant), of eye contact (irritant). Slightly hazardous in case of skin contact (permeator), of ingestion, of inhalation.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available.
DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

4. FIRST-AID MEASURES

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.
Skin Contact:  
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.  
**Serious Skin Contact:**  
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.  

**Inhalation:**  
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.  
**Serious Inhalation:**  
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.  

**Ingestion:**  
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 if symptoms appear.  
**Serious Ingestion:** Not available.  

### 5. FIRE-FIGHTING MEASURES  
**Flammability of the Product:** Flammable.  
**Auto-Ignition Temperature:** Not available.  
**Flash Points:** CLOSED CUP: 18°C (64.4°F). OPEN CUP: 21.667°C (71°F).  
**Flammable Limits:** LOWER: 4.22% UPPER: 12.87%  
**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. Flammable in presence of oxidizing materials.  
**Explosion Hazards in Presence of Various Substances:**  
**Fire Fighting Media and Instructions:**  
Flammable liquid, insoluble in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Never direct a water jet in the container in order to prevent any splashing of the product which could cause spreading of the fire.  
**Special Remarks on Fire Hazards:**  
Vapor may travel considerable distance to source of ignition and flash back. When heated to decomposition it emits acrid smoke and irritating fumes.  
**Special Remarks on Explosion Hazards:** Not available.
6. ACCIDENTAL RELEASE MEASURES
Small Spill:
Absorb with an inert material and put the spilled material in an appropriate waste disposal.
Large Spill:
Flammable liquid, insoluble in water.
Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

7. HANDLING AND STORAGE
Precautions:
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/vapor/spray. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, acids, alkalis.
Storage:
Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION
Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits: TWA: 200 STEL: 400 (ppm) Consult local authorities for acceptable exposure limits.
9. PHYSICAL AND CHEMICAL PROPERTIES
Physical state and appearance: Liquid.
Odor: Pleasant.
Taste: Not available.
Molecular Weight: 90.08 g/mole
Color: Colorless. Clear
pH (1% soln/water): Not applicable.
Boiling Point: 90°C (194°F) - 91°C.
Melting Point: 2°C (35.6°F) - 4°C.
Critical Temperature: 274.85°C (526.7°F)
Specific Gravity: 1.069 @ 20°C (Water = 1)
1.0636 @ 25°C.
Vapor Pressure: 5.6 kPa (@ 20°C)
Vapor Density: 3.1 (Air = 1)
Volvatility: Not available.
Odor Threshold: Not available.
Water/Oil Dist. Coeff.: Not available.
Ionicity (in Water): Not available.
Dispersion Properties: Not available.
Solubility: Insoluble in cold water, hot water.

10. STABILITY AND REACTIVITY
Stability: The product is stable.
Instability Temperature: Not available.
Conditions of Instability: Heat, ignition sources, incompatible materials
Incompatibility with various substances:
Highly reactive with oxidizing agents.
Reactive with reducing agents, acids, alkalis.
Corrosivity: Not available.
Special Remarks on Reactivity: Violent reaction or ignition on contact with potassium tert-butoxide.
Special Remarks on Corrosivity: Not available.
Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION
Routes of Entry: Absorbed through skin. Eye contact. Inhalation. Ingestion.
Toxicity to Animals:
Acute oral toxicity (LD50): 6000 mg/kg [Mouse].
Acute dermal toxicity (LD50): >5000 mg/kg [Rabbit].
Chronic Effects on Humans: May cause damage to the following organs: central nervous system (CNS).
Other Toxic Effects on Humans:
Hazardous in case of skin contact (irritant).
Slightly hazardous in case of skin contact (permeator), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.
Special Remarks on Chronic Effects on Humans: Not available.
Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects:
Skin: Causes skin irritation. It can be absorbed through the skin.
Eyes: Causes eye irritation.
Inhalation: May cause respiratory tract irritation. May cause drowsiness, unconsciousness, and central nervous system depression. Vapors may cause dizziness or suffocation.
Ingestion: May cause irritation of the digestive tract.
The toxicological properties of this substance have not been fully investigated.

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 product itself and its products of degradation are not toxic.
Special Remarks on the Products of Biodegradation: Not available.

13. DISPOSAL CONSIDERATIONS
Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

14. TRANSPORTATION INFORMATION
DOT Classification: CLASS 3: Combustible liquid
Identification: Dimethyl Carbonate UNNA: 1161 PG: II
Special Provisions for Transport: Not available.

15. REGULATORY INFORMATION
Federal and State Regulations:
Connecticut hazardous material survey.: Dimethyl carbonate
Pennsylvania RTK: Dimethyl carbonate
Florida: Dimethyl carbonate
Massachusetts RTK: Dimethyl carbonate
New Jersey: Dimethyl carbonate
TSCA 8(b) inventory: Dimethyl carbonate
Other Regulations:

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).

DSCL (EEC):
  R11- Highly flammable.
  S9- Keep container in a well-ventilated place.
  S16- Keep away from sources of ignition – No smoking.
  S29- Do not empty into drains.
  S33- Take precautionary measures against static discharges.

HMIS (U.S.A.):
  Health Hazard: 2
  Fire Hazard: 3
  Reactivity: 0
  Personal Protection: j

National Fire Protection Association (U.S.A.):
  Health: 1
  Flammability: 3
  Reactivity: 0
  Specific hazard:
  Protective Equipment:
    Gloves.
    Lab coat.
    Wear appropriate respirator when ventilation is inadequate.

16. OTHER INFORMATION

Original: 10/01/2002
Revised: 07/29/2006 Last Update: 08/29/2012

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