PRODUCT IDENTIFIER Carbon Dioxide, Refrigerated Liquid

SECTION I - Product Information*

MANUFACTURER: EPCO Carbon Dioxide Products, Inc.

OFFICE PHONE: 1-800-259-3726
24-HOUR EMERGENCY: 1-800-259-8095
SHIPPING NAME: Carbon Dioxide, Refrigerated Liquid
UN NUMBER: 2187
CAS NUMBER: 124-38-9
TDG CLASSIFICATION: 2.2
WHMIS CLASSIFICATION: A
CHEMICAL NAME: Carbon Dioxide
MOLECULAR WEIGHT: 44.01
CHEMICAL FAMILY: Oxide of Carbon
FACT NAME & SYNONYMS: Carbonic Acid Gas
CHEMICAL FORMULA: CO2
Uses: Various

SECTION II – Hazardous Ingredients of Material

<table>
<thead>
<tr>
<th>Hazardous Ingredients</th>
<th>Approx. Conc. %</th>
<th>LD30</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon Dioxide</td>
<td>100%</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

SECTION III – Physical Data

APPEARANCE & ODOR: Colorless and odorless. Sharp nasal sensation at high concentration.

PHYSICAL STATE (AT N.P.T.): Gas
SPECIFIC GRAVITY (WATER = 1): 0.713
ODOR THRESHOLD (ppm): Not Available
BOILING POINT: Not Applicable
FREEZING POINT: Sublimates at 1 atm at −78.5°C / -109.3°F
SPECIFIC GRAVITY (AIR = 1): 1.52 (@ 21°C / 70°F)
GAS DENSITY (g/ml): 0.00197 (@ 0°C / 32°F)
VAPOR PRESSURE: 5778 kPa, 838 psig (@ 21.1°C / 70°F)
pH: Not Applicable

EPCO Carbon Dioxide Products, Inc.
Prepared by: Production Department
PAGE: 1 of 6
DATE: 05/23/2010
### SECTION III – Physical Date (Cont.’)

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>% VOLATILE (BY VOLUME):</td>
<td>100</td>
</tr>
<tr>
<td>LIQUID DENSITY (g/ml):</td>
<td>0.713 (@ 25° C / 77° F)</td>
</tr>
<tr>
<td>EVAPORATION RATE:</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>SOLUBILITY IN WATER (vol./vol.):</td>
<td>0.9 (@ 20° C / 68° F)</td>
</tr>
<tr>
<td>COEFFICIENT OF WATER/OIL DISTRIBUTION:</td>
<td>Not Available</td>
</tr>
</tbody>
</table>

### SECTION IV – Fire and Explosion Hazard of Material

**FLAMMABILITY**

If yes, under which conditions? Non flammable

_____ Yes  ____x__ No

Will not support combustion.

**MEANS OF EXTINCTION**

If containers are exposed to fire, evacuate all personnel from danger area. Cool containers with water spray from maximum distance. Fight source fire with media appropriate to it.

**SPECIAL PROCEDURES**

Do not direct water at source of leak or venting safety device, as icing may occur.

- **FLASHPOINT (°C) AND METHOD:** None
- **LOWER EXPLOSION LIMIT (% BY VOLUME):** None
- **UPPER EXPLOSION LIMIT (% BY VOLUME):** None
- **AUTO IGNITION TEMPERATURE (°C):** None
- **TDG FLAMMABILITY CLASSIFICATION:** Non Flammable
- **HAZARDOUS COMBUSTION PRODUCTS:** None
- **SENSITIVITY TO MECHANICAL IMPACT:** None
- **RATE OF BURNING:** Non Applicable
- **SENSITIVITY TO STATIC DISCHARGE:** None

### SECTION V – Reactivity Data

**Chemical Stability**

If no, under what conditions?

_____x__ Yes  _____No

Stable at normal temperatures and pressures.
SECTION V – Reactivity Data (Cont’d)

Incompatibility to Other Substances

___ Yes ___x__ No  
If yes, which ones?

Reactivity

___x__ Yes _____ No  
If yes, under which conditions?  
In the presence of moisture, will form carbonic acid which may corrode some metals.

SECTION VI – Toxicological Properties of Material

ROUTE OF ENTRY

___x__ Skin Contact  ____ Skin Absorption  ___x__ Eye Contact

___x__ Inhalation Acute  ____ Inhalation Chronic  ___x__ Ingestion

EFFECTS OF ACUTE EXPOSURE TO MATERIAL

Skin
Escaping liquid transforms to very cold solid and gas (-78°C/-109°F) which may cause frostbite. Solid sublimates and can cool materials it is in contact with to -78°C (-109°F) which can cause frostbite if touched.

Eye
Escaping liquid transforms to very cold solid and gas (-78°C/-109°F) which may cause frostbite.

Inhalation
Carbon Dioxide is present in air at 0.03% and, at higher levels in exhaled breath. Low concentrations (3-5%) increase the respiration rate and can cause headache. Levels of 8% to 15% cause headache, nausea, vomiting and may lead to unconsciousness. Higher concentrations can cause coma and death.

Ingestion
Swallowing of solid will cause severe burns. Keep out of reach of children.

EFFECTS OF CHRONIC EXPOSURE TO MATERIAL

No known chronic effects to repeated exposures of low concentrations (3-5%)
SECTION VI – Toxicological Properties of Material (Cont’d)

<table>
<thead>
<tr>
<th>EXPOSURE LIMIT (S):</th>
<th>STEL</th>
<th>30,000 ppm (3%) ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>TWA</td>
<td>5,000 ppm (5%) ACGIH, OSHA</td>
</tr>
<tr>
<td></td>
<td>LCLo</td>
<td>90% 5 min. human</td>
</tr>
</tbody>
</table>

ITTITANCY OF MATERIAL: Sharp sensation on nasal membranes at higher concentration.

SENSITIZATION OF MATERIAL: None

CARCINOGENICITY: None

REPRODUCTIVE EFFECTS: None

TERATOGENICITY: None

MUTAGENICITY: None

SYNERGISTIC MATERIALS: None

SECTION VII – Preventive Measures

Gloves: Insulated gloves
Respiratory: SCBA in case of suspected leak or oxygen-deficient atmosphere.
Eyes: Goggles of full faceshield.
Footwear: Safety shoes for container handling, if applicable.
Clothing: Long sleeves/trousers recommended.

ENGINEERING CONTROLS
Provide good ventilation to maintain more than 18% oxygen and less than 0.5% CO₂ (TWA). Air monitoring device is recommended.

LEAK AND SPILL PROCEDURE
Major: Evacuate danger area. Use SCBA to return to shutoff source. Allow gas to dissipate. Verify CO₂ and oxygen concentration of enclosed of low areas before permitting re-entry.

WASTE DISPOSAL
No residual waste.

STORAGE REQUIREMENTS
Replace container cap, if applicable.
Protect containers from physical damage.
Store in cool, dry, well ventilated area.
Do not allow temperature to exceed 52°C (125°F).
Store secured in upright position with full and empty containers segregated.
SECTION VII – Preventive Measures (Cont’d)

SPECIAL SHIPPING INFORMATION
Replace container cap, if supplied.
Transport secured upright in well-ventilated truck.
Never transport in passenger compartment, trunk or enclosed vehicle.

HANDLING PROCEDURES AND EQUIPMENT
When withdrawing gaseous CO2 use only regulating equipment designed for CO2 service and source pressure.
Use only in well ventilated areas.
Do not move container without its cap in place, if applicable.
Use a suitable hand truck for container movement, if applicable.
Secure container when in use.
Use a backflow preventive device to prevent suck-back.
Keep container away from heat, flames and sparks.
Close valve after each use and when empty.
Provide a safety relief device between any two valves.

CORROSIVITY
In presence of moisture, will form carbonic acid which may corrode some metals.

SECTION VIII - First Aid Measures

Eyes:  - For frostbite, rinse with warm water for 15 minutes.
       - Obtain medical attention.

Skin:  - For frostbite, allow affected body parts to thaw.
       - Obtain medical attention.

Inhalation: - Rescue personnel should be equipped with SCBA.
            - Move victim to fresh air.
            - Give oxygen, if breathing is difficult.
            - Give artificial respiration, if breathing has stopped.
            - Ensure that vomit does not obstruct airway.
            - Obtain medical attention.

Ingestion: - Maintain breathing.
           - Obtain medical attention immediately.
Use, handling or storage of the product described in the MSDS is at the user's sole risk.

EPCO Carbon Dioxide Products, Inc. shall not be liable for any loss of damage of any nature whatsoever, however arising, relating to the use, handling or storage of the product, of the statements and information contained in or omitted from this MSDS.

Prepared By: EPCO Production Department
Phone Number: 1-800-259-3726
Date: 05/23/2010