**Section 1 - IDENTIFICATION**

**Product Identifier:** Carbon Dioxide, Solid  
**Trade Names/Synonyms**  
DRY ICE; Gas ID 2187  
**Recommended Use**  
industrial applications  
**Restrictions on Use**  
None known.

**Manufacturer Information**  
Continental Carbonic Products, Inc.  
3985 East Harrison Avenue  
Decatur, IL 62526  
General Information: 217-428-2068  
Emergency #: 1-800-424-9300 (CHEMTREC)  
Outside the US: 703-527-3887 (Call collect)

**Section 2 - HAZARDS IDENTIFICATION**

**Classification in accordance with 29 CFR 1910.1200**  
Specific Target Organ Toxicity - Single Exposure, Category 3 (central nervous system)

**GHS LABEL ELEMENTS**

**Signal Word**  
WARNING

**Hazard Statement(s)**  
May cause drowsiness and dizziness

**Precautionary Statement(s)**

**Prevention**  
Avoid breathing dust, mist, fumes or vapors. Use only outdoors or in a well-ventilated area.

**Response**  
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

**Storage**  
Store in a well-ventilated place. Keep container tightly closed. Store locked up.

**Disposal**  
Dispose in accordance with all applicable regulations.

**Hazard(s) Not Otherwise Classified**  
May cause asphyxia. May cause frostbite.

**Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS**

<table>
<thead>
<tr>
<th>CAS</th>
<th>Component</th>
<th>Percent</th>
</tr>
</thead>
</table>

Page 1 of 7  
Issue Date 04/28/2014  
Revision 1.0000  
Print Date 05/08/2014
**Section 4 - FIRST AID MEASURES**

**Description of Necessary Measures**

**Inhalation**
Remove person to fresh air and keep comfortable for breathing. If breathing is difficult, oxygen should be administered by qualified personnel. If breathing has stopped, start artificial respiration at once. Get medical attention.

**Skin**
If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

**Eyes**
Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

**Ingestion**
If swallowed, get medical attention.

**Most Important Symptoms/Effects**

**Acute**
suffocation, frostbite, central nervous system depression

**Delayed**
No information on significant adverse effects.

**Indication of Immediate Medical Attention and Special Treatment**
For inhalation, consider oxygen.

**Section 5 - FIRE FIGHTING MEASURES**

**Suitable Extinguishing Media**
Use extinguishing agents appropriate for surrounding fire.

**Unsuitable Extinguishing Media**
None known.

**Specific Hazards Arising from the Chemical**
Negligible fire hazard.

**Hazardous Combustion Products**
Combustion: oxides of carbon

**Fire Fighting Measures**
Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Use extinguishing agents appropriate for surrounding fire. Evacuation radius: 800 meters (1/2 mile). Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

**Special Protective Equipment and Precautions for Firefighters**
Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

**Section 6 - ACCIDENTAL RELEASE MEASURES**

**Personal Precautions, Protective Equipment and Emergency Procedures**
Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment.
Methods and Materials for Containment and Cleaning Up

Do not touch spilled material. Stop leak if possible without personal risk. Keep unnecessary people away, isolate hazard area and deny entry. Ventilate closed spaces before entering. Collect spilled material in appropriate container for disposal.

** *Section 7 - HANDLING AND STORAGE* **

Precautions for Safe Handling

Avoid breathing dust, mist, fumes or vapors. Use only outdoors or in a well-ventilated area. Wear cold insulating gloves/face shield/eye protection. Wash thoroughly after handling.

Conditions for Safe Storage, including any Incompatibilities

Store in accordance with all current regulations and standards. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Keep away from incompatible materials.

Incompatibilities combustible materials, oxidizing materials, metal salts, reducing agents, metal carbide, metals, bases

** *Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION* **

Component Exposure Limits

Carbon dioxide, solid (124-38-9)

- ACGIH: 5000 ppm TWA
  30000 ppm STEL
- Europe: 5000 ppm TWA; 9000 mg/m3 TWA
- OSHA (Final): 5000 ppm TWA; 9000 mg/m3 TWA
- OSHA (Vacated): 10000 ppm TWA; 18000 mg/m3 TWA
  30000 ppm STEL; 54000 mg/m3 STEL
- NIOSH: 5000 ppm TWA; 9000 mg/m3 TWA
  30000 ppm STEL; 54000 mg/m3 STEL

Component Biological Limit Values

There are no biological limit values for any of this product's components.

Appropriate Engineering Controls

Provide local exhaust or process enclosure ventilation system. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eyes/Face Protection

Wear splash resistant safety goggles with a faceshield. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin Protection

Wear appropriate protective, cold insulating clothing.

Glove Recommendations

Wear insulated gloves.

Respiratory Protection

The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.

- 40,000 ppm
- Any supplied-air respirator.
- Any self-contained breathing apparatus with a full facepiece.
- Emergency or planned entry into unknown concentrations or IDLH conditions - Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.
Escape -
Any appropriate escape-type, self-contained breathing apparatus.

**Section 9 - PHYSICAL AND CHEMICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Physical State:</th>
<th>Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color:</td>
<td>white</td>
</tr>
<tr>
<td>Odor:</td>
<td>Not available</td>
</tr>
<tr>
<td>pH:</td>
<td>Not available</td>
</tr>
<tr>
<td>Boiling Point:</td>
<td>-79 °C</td>
</tr>
<tr>
<td>Decomposition:</td>
<td>Not available</td>
</tr>
<tr>
<td>OSHA Flammability Class:</td>
<td>Not available</td>
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<tr>
<td>UEL:</td>
<td>Not available</td>
</tr>
<tr>
<td>Specific Gravity (water=1):</td>
<td>1.56 @ -79°C</td>
</tr>
<tr>
<td>Log KOW:</td>
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</tr>
<tr>
<td>Auto Ignition:</td>
<td>Not available</td>
</tr>
<tr>
<td>Sublimation Point:</td>
<td>-78.5 °C @ atmospheric pressure</td>
</tr>
<tr>
<td>Molecular Formula:</td>
<td>CO2</td>
</tr>
</tbody>
</table>

**Appearance:** white flakes
**Physical Form:** flakes
**Odor Threshold:** Not available
**Melting/Freezing Point:** -70 °C
**Flash Point:** Not flammable
**Evaporation Rate:** Not available
**LEL:** Not available
**Vapor Pressure:** 569 mmHg @ -82°C
**Density:** 1.4-1.6 g/cm³
**Water Solubility:** 1.6%
**Coeff. Water/Oil Dist:** Not available
**Viscosity:** Not available
**Molecular Weight:** 44.01

**Other Property Information**
No additional information is available.

**Solvent Solubility**
**Soluble:** hydrocarbons, organic solvents

**Section 10 - STABILITY AND REACTIVITY**

**Reactivity**
No reactivity hazard is expected.

**Chemical Stability**
Stable at normal temperatures and pressure.

**Possibility of Hazardous Reactions**
Will not polymerize.

**Conditions to Avoid**
Protect from physical damage and heat. Containers may rupture or explode if exposed to heat. Avoid contact with water or moisture.

**Incompatible Materials**
combustible materials, oxidizing materials, metal salts, reducing agents, metal carbide, metals, bases

**Hazardous Decomposition**
Combustion: oxides of carbon

**Section 11 - TOXICOLOGICAL INFORMATION**

**Acute and Chronic Toxicity**
**Component Analysis - LD50/LC50**
The components of this material have been reviewed in various sources and no selected endpoints have been identified.
RTECS Acute Toxicity (selected)
The components of this material have been reviewed, and RTECS publishes the following endpoints:

**Carbon dioxide, solid (124-38-9)**

**Inhalation:** 200000 ppm/2 hour Inhalation Mouse LC50; 361 gm/m3/2 hour Inhalation Mouse LC50

Acute Toxicity Level
**Carbon dioxide, solid (124-38-9)**

**Non Toxic:** inhalation

Information on Likely Routes of Exposure

**Inhalation**
- ringing in the ears, nausea, irregular heartbeat, headache, drowsiness, dizziness, loss of coordination, tingling sensation, visual disturbances, suffocation, convulsions, coma

**Ingestion**
- frostbite

**Skin Contact**
- blisters, frostbite

**Eye Contact**
- irritation, blurred vision, frostbite

**Immediate Effects**
- suffocation, frostbite, central nervous system depression

**Delayed Effects**
- No information on significant adverse effects.

**Medical Conditions Aggravated by Exposure**
- None known.

**Irritation/Corrosivity Data**
- No data available.

**RTECS Irritation**
- The components of this material have been reviewed and RTECS publishes no data as of the date on this document.

**Target Organs**
- **Carbon dioxide, solid (124-38-9)**
- central nervous system

**Respiratory Sensitization**
- No data available.

**Dermal Sensitization**
- No data available.

**Carcinogenicity**

**Component Carcinogenicity**
- None of this product's components are listed by ACGIH, IARC, NTP, OSHA or DFG.

**Mutagenic Data**
- No data available.

**RTECS Reproductive Effects**
- The components of this material have been reviewed, and RTECS publishes the following endpoints:

- **Carbon dioxide, solid (124-38-9)**

  - 2 pph Inhalation Mouse TCLo (8 hour, pregnant 10 day(s)); 55 pph Inhalation Mouse TCLo (4 hour, 6 day(s)); 55 pph Inhalation Mouse TCLo (2 hour, 3 day(s)); 13 pph Inhalation Rabbit TCLo (4 hour, pregnant 9-12 day(s)); 6 pph Inhalation Rat TCLo (24 hour, pregnant 10 day(s)); 6 pph Inhalation Rat TCLo (24 hour, pregnant 10 day(s))
Tumorigenic Data
No data available.

Specific Target Organ Toxicity - Single Exposure
Central nervous system

Specific Target Organ Toxicity - Repeated Exposure
No data available.

Aspiration Hazard
No data available.

***Section 12 - ECOLOGICAL INFORMATION***

Component Analysis - Aquatic Toxicity
No LOEL ecotoxicity data are available for this product's components.

Persistence and Degradability
No data available.

Bioaccumulative Potential
No data available.

Mobility
No data available.

***Section 13 - DISPOSAL CONSIDERATIONS***

Disposal Methods
Dispose in accordance with all applicable regulations.

Component Waste Numbers
The U.S. EPA has not published waste numbers for this product's components.

***Section 14 - TRANSPORT INFORMATION***

US DOT Information
Shipping Name: Not regulated.
Additional Info.: Not regulated as a hazardous material when transported by highway.
Regulated when transported by aircraft or vessel.

IMDG Information
Shipping Name: Carbon dioxide, solid
UN #: UN1845  Hazard Class: 9
Required Label(s): 9

***Section 15 - REGULATORY INFORMATION***

Component Analysis
U.S. Federal Regulations
None of this products components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA 311/312 Hazardous Categories
Acute Health: Yes  Chronic Health: No  Fire: No  Pressure: No  Reactive: No
Safety Data Sheet

Material Name Carbon Dioxide, Solid

SDS ID: 00244557

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>CA</th>
<th>MA</th>
<th>MN</th>
<th>NJ</th>
<th>PA</th>
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</thead>
<tbody>
<tr>
<td>Carbon dioxide, solid</td>
<td>124-38-9</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Not regulated under California Proposition 65

Component Analysis - Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>US</th>
<th>CA</th>
<th>EU</th>
<th>AU</th>
<th>PH</th>
<th>JP</th>
<th>KR</th>
<th>CN</th>
<th>NZ</th>
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</thead>
<tbody>
<tr>
<td>Carbon dioxide, solid</td>
<td>124-38-9</td>
<td>Yes</td>
<td>DSL</td>
<td>EIN</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

** *Section 16 - OTHER INFORMATION* **

NFPA Ratings: Health: 3 Fire: 0 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

Other Information

Continental Carbonic Products, Inc. makes no express or implied warranties, guarantees or representations regarding the product or the information herein, including but not limited to any implied warranty or merchantability or fitness for use. Continental Carbonic Products, Inc. shall not be liable for any personal injury, property or other damages of any nature, whether compensatory, consequential, exemplary, or otherwise, resulting from any publication, use or reliance upon the information herein.

End of Sheet 00244557