Safety Data Sheet

Material Name Carbon Dioxide, Solid **SDS ID: 00244557**

* * *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

Symbol(s)

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* * *

CAS	Component	Percent

124-38-9	Carbon dioxide, solid	100

* * *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* * *

Physical State:	Solid	**Appearance:**	white flakes
Color:	white	**Physical Form:**	flakes
Odor:	Not available	**Odor Threshold:**	Not available
pH:	Not available	**Melting/Freezing Point:**	-70 °C
Boiling Point:	-79 °C	**Flash Point:**	Not flammable
Decomposition:	Not available	**Evaporation Rate:**	Not available
OSHA Flammability Class:	Not available	**LEL:**	Not available
UEL:	Not available	**Vapor Pressure:**	569 mmHg @ -82°C
Vapor Density (air = 1):	1.5	**Density:**	1.4-1.6 g/cm3
Specific Gravity (water=1):	1.56 @ -79°C	**Water Solubility:**	1.6%
Log KOW:	Not available	**Coeff. Water/Oil Dist:**	Not available
Auto Ignition:	Not available	**Viscosity:**	Not available
Sublimation Point:	-78.5 °C @ atmospheric pressure	**Molecular Weight:**	44.01
Molecular Formula:	CO2		

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 LOLI 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

U.S. State Regulations

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

Component	CAS	CA	MA	MN	NJ	PA
Carbon dioxide, solid	124-38-9	Yes	Yes	Yes	Yes	Yes

Not regulated under California Proposition 65

Component Analysis - Inventory

Component	CAS	US	CA	EU	AU	PH	JP	KR	CN	NZ
Carbon dioxide, solid	124-38-9	Yes	DSL	EIN	Yes	Yes	Yes	Yes	Yes	Yes

* * *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

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