



# Carbon Dioxide

Safety Data Sheet

SDS No: 15009

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).

Revision Date: 10/30/2018

Date of Issue: 11/16/2015

Version: 1.0

## SECTION 1: IDENTIFICATION

### 1.1. Product Identifier

**Product Form:** Substance

**Product Name:** Carbon Dioxide

**Synonyms:** CO<sub>2</sub>

### 1.2. Intended Use of the Product

No use is specified.

### 1.3. Name, Address, and Telephone of the Responsible Party

#### Customer

Hess Tower

1501 McKinney

Houston, TX 77010

T:(713) 496-4000

When calling the main operator ask for the EHS Safety Department. All Hess SDSs are also available via the [Hess.com](http://Hess.com) website.

### 1.4. Emergency Telephone Number

**Emergency Number** : (800) 424-9300 CHEMTREC (24 hours)

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the Substance or Mixture

#### GHS-US/CA Classification

Simple Asphy

Press. Gas (Comp.) H280

Full text of hazard classes and H-statements : see Section 16.

### 2.2. Label Elements

#### GHS-US/CA Labeling

**Hazard Pictograms (GHS-US/CA)** :



GHS04

**Signal Word (GHS-US/CA)** : Warning

**Hazard Statements (GHS-US/CA)** : H280 - Contains gas under pressure; may explode if heated.  
May displace oxygen and cause rapid suffocation.

**Precautionary Statements (GHS-US/CA)** : P410+P403 - Protect from sunlight. Store in a well-ventilated place.

### 2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions. Contact with gas escaping the container can cause frostbite.

### 2.4. Unknown Acute Toxicity (GHS-US/CA)

No data available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substance

**Name** : Carbon Dioxide

Name	Product Identifier	% *	GHS Ingredient Classification
Carbon dioxide	(CAS-No.) 124-38-9	100	Simple Asphy Press. Gas (Comp.), H280

Full text of H-phrases: see Section 16.

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\*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of First-aid Measures

**General:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible). If frostbite or freezing occurs, immediately flush with plenty of lukewarm water to GENTLY warm the affected area. Do not use hot water. Do not rub affected area. Get immediate medical attention.

**Inhalation:** Obtain medical attention if breathing difficulty persists. First, take proper precautions to ensure your own safety before attempting rescue (e.g. wear appropriate respiratory protective equipment, use the buddy system), then remove the exposed person to fresh air. Keep at rest in a position comfortable for breathing.

**Skin Contact:** Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation develops or persists. Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention.

**Eye Contact:** Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

**Ingestion:** Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

### 4.2. Most Important Symptoms and Effects Both Acute and Delayed

**General:** Contact with gas escaping the container can cause frostbite. Asphyxia by lack of oxygen: risk of death.

**Inhalation:** When inhaled in elevated concentrations, carbon dioxide may act to produce mild central nervous system effects, stimulation of respiration, and asphyxiation depending on the concentration present and the duration of exposure. An increase in carbon dioxide concentration will increase breathing rate. In high concentrations it will displace oxygen from the breathing atmosphere. Signs of asphyxiation will be noticed when oxygen is reduced to below 16%, and may occur in several stages. Symptoms may include rapid breathing and pulse rate, headache, dizziness, visual disturbances, mental confusion, incoordination, mood changes, muscular weakness, tremors, cyanosis, narcosis and numbness of the extremities. Unconsciousness leading to central nervous system injury and possibly death will occur when the atmospheric oxygen concentration is reduced to about  $\leq 8\%$ .

**Skin Contact:** Contact with gas escaping the container can cause frostbite and freeze burns.

**Eye Contact:** Contact with gas escaping the container can cause frostbite, freeze burns, and permanent eye damage.

**Ingestion:** Not considered a potential route of exposure, but contact with gas escaping the container can cause freeze burns and frostbite.

**Chronic Symptoms:** None expected under normal conditions of use.

### 4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

## SECTION 5: FIRE-FIGHTING MEASURES

### 5.1. Extinguishing Media

**Suitable Extinguishing Media:** Water spray, dry chemical, foam, carbon dioxide.

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

### 5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Not considered flammable but may burn at high temperatures.

**Explosion Hazard:** Container may explode in heat of fire.

**Reactivity:** Hazardous reactions will not occur under normal conditions.

### 5.3. Advice for Firefighters

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** Use water spray or fog for cooling exposed containers. Fight fire remotely due to the risk of explosion.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Hazardous Combustion Products:** Carbon monoxide and oxygen when heated above 3092°F (1700°C).

### Reference to Other Sections

Refer to Section 9 for flammability properties.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Do not get in eyes, on skin, or on clothing. Do not breathe gas.

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## 6.1.1. For Non-Emergency Personnel

**Protective Equipment:** Use appropriate personal protective equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

## 6.1.2. For Emergency Personnel

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

Evacuate unnecessary personnel, isolate, and ventilate area.

## 6.2. Environmental Precautions

Prevent entry to sewers and public waters.

## 6.3. Methods and Materials for Containment and Cleaning Up

**For Containment:** Stop leak, if possible without risk. As an immediate precautionary measure, isolate spill or leak area in all directions.

**Methods for Cleaning Up:** Clean up spills immediately and dispose of waste safely. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill. Stop the source of the release, if safe to do so. Consider the use of water spray to disperse vapors. Isolate the area until gas has dispersed. Ventilate and gas test area before entering.

## 6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for Safe Handling

**Additional Hazards When Processed:** Do not pressurize, cut, or weld containers. Ruptured cylinders may rocket. Asphyxiating gas at high concentrations.

**Precautions for Safe Handling:** Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid prolonged contact with eyes, skin and clothing. Do not breathe gas.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures.

### 7.2. Conditions for Safe Storage, Including Any Incompatibilities

**Technical Measures:** Comply with applicable regulations. Proper grounding procedures to avoid static electricity should be followed.

**Storage Conditions:** Keep container closed when not in use. Store in a dry, cool place. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials.

**Incompatible Materials:** Strong acids, strong bases, strong oxidizers, reactive metals (such as aluminum, magnesium), hydrides.

### 7.3. Specific End Use(s)

No use is specified.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control Parameters

For substances listed in Section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), or Canadian provincial governments.

Carbon dioxide (124-38-9)		
USA ACGIH	ACGIH TWA (ppm)	5000 ppm
USA ACGIH	ACGIH STEL (ppm)	30000 ppm
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
USA OSHA	OSHA PEL (TWA) (ppm)	5000 ppm
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (TWA) (ppm)	5000 ppm
USA NIOSH	NIOSH REL (STEL) (mg/m <sup>3</sup> )	54000 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (STEL) (ppm)	30000 ppm
USA IDLH	US IDLH (ppm)	40000 ppm
Alberta	OEL STEL (mg/m <sup>3</sup> )	54000 mg/m <sup>3</sup>
Alberta	OEL STEL (ppm)	30000 ppm
Alberta	OEL TWA (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Alberta	OEL TWA (ppm)	5000 ppm
British Columbia	OEL STEL (ppm)	15000 ppm

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British Columbia	OEL TWA (ppm)	5000 ppm
Ontario	OEL STEL (ppm)	30000 ppm
Ontario	OEL TWA (ppm)	5000 ppm
Québec	VECD (mg/m <sup>3</sup> )	54000 mg/m <sup>3</sup>
Québec	VECD (ppm)	30000 ppm
Québec	VEMP (mg/m <sup>3</sup> )	9000 mg/m <sup>3</sup>
Québec	VEMP (ppm)	5000 ppm

## 8.2. Exposure Controls

**Appropriate Engineering Controls:** Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed. Use explosion-proof equipment. Oxygen detectors should be used when asphyxiating gases may be released.

**Personal Protective Equipment:** Gloves. Protective clothing. Protective goggles. Insufficient ventilation: wear respiratory protection. Respiratory protection of the dependent type.



**Materials for Protective Clothing:** Chemically resistant materials and fabrics.

**Hand Protection:** Wear protective gloves. If material is cold, wear thermally resistant protective gloves.

**Eye and Face Protection:** Chemical safety goggles.

**Skin and Body Protection:** Wear suitable protective clothing.

**Respiratory Protection:** Use a NIOSH-approved positive pressure, supplied air respiratory with escape bottle or self-contained breathing apparatus (SCBA) for gas concentrations above occupational exposure limits, for potential for uncontrolled release, if exposure levels are not known, or in an oxygen-deficient atmosphere.

Refer to OSHA 29 CFR 1910.134, ANSI Z88.2-1992, NIOSH Respirator Decision Logic, and the manufacturer for additional guidance on respiratory protection selection.

**Thermal Hazard Protection:** Wear thermally resistant protective clothing.

**Other Information:** When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on Basic Physical and Chemical Properties

Physical State	: Gas
Appearance	: Colorless, Slightly Acidic Gas
Odor	: Odorless
Odor Threshold	: Not available
pH	: Not available
Evaporation Rate	: Not available
Melting Point	: -57 °C (-70.6 °F)
Freezing Point	: Not available
Boiling Point	: -79 °C (-110.2 °F)
Flash Point	: Not flammable
Auto-ignition Temperature	: Not flammable
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not flammable
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: 856 mm Hg @70°F (21°C)
Relative Vapor Density at 20°C	: 1.53 (air = 1)
Relative Density	: Not available
Specific Gravity	: Heavier than air

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<b>Solubility</b>	: Very soluble
<b>Partition Coefficient: N-Octanol/Water</b>	: Not available
<b>Viscosity</b>	: Not available
<b>Explosive Properties</b>	: Contains gas under pressure; may explode if heated

## SECTION 10: STABILITY AND REACTIVITY

- 10.1. Reactivity:** Hazardous reactions will not occur under normal conditions.
- 10.2. Chemical Stability:** Contains gas under pressure; may explode if heated.
- 10.3. Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4. Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, open flames, sources of ignition and incompatible materials.
- 10.5. Incompatible Materials:** Strong acids, strong bases, strong oxidizers, reactive metals (such as aluminum, magnesium), hydrides.
- 10.6. Hazardous Decomposition Products:** None expected under normal conditions of use.

## SECTION 11: TOXICOLOGICAL INFORMATION

### 11.1. Information on Toxicological Effects - Product

- Acute Toxicity (Oral):** Not classified
- Acute Toxicity (Dermal):** Not classified
- Acute Toxicity (Inhalation):** Not classified
- LD50 and LC50 Data:** Not available
- Skin Corrosion/Irritation:** Not classified
- Eye Damage/Irritation:** Not classified
- Respiratory or Skin Sensitization:** Not classified
- Germ Cell Mutagenicity:** Not classified
- Carcinogenicity:** Not classified
- Specific Target Organ Toxicity (Repeated Exposure):** Not classified
- Reproductive Toxicity:** Not classified
- Specific Target Organ Toxicity (Single Exposure):** Not classified
- Aspiration Hazard:** Not classified

**Symptoms/Injuries After Inhalation:** When inhaled in elevated concentrations, carbon dioxide may act to produce mild central nervous system effects, stimulation of respiration, and asphyxiation depending on the concentration present and the duration of exposure. An increase in carbon dioxide concentration will increase breathing rate. In high concentrations it will displace oxygen from the breathing atmosphere. Signs of asphyxiation will be noticed when oxygen is reduced to below 16%, and may occur in several stages. Symptoms may include rapid breathing and pulse rate, headache, dizziness, visual disturbances, mental confusion, incoordination, mood changes, muscular weakness, tremors, cyanosis, narcosis and numbness of the extremities. Unconsciousness leading to central nervous system injury and possibly death will occur when the atmospheric oxygen concentration is reduced to about  $\leq 8\%$ .

**Symptoms/Injuries After Skin Contact:** Contact with gas escaping the container can cause frostbite and freeze burns.

**Symptoms/Injuries After Eye Contact:** Contact with gas escaping the container can cause frostbite, freeze burns, and permanent eye damage.

**Symptoms/Injuries After Ingestion:** Not considered a potential route of exposure, but contact with gas escaping the container can cause freeze burns and frostbite.

**Chronic Symptoms:** None expected under normal conditions of use.

### 11.2. Information on Toxicological Effects - Ingredient(s)

**LD50 and LC50 Data:** Not available

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

**Ecology - General:** Not classified.

### 12.2. Persistence and Degradability

<b>Carbon Dioxide</b>	
<b>Persistence and Degradability</b>	Not established.

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## 12.3. Bioaccumulative Potential

<b>Carbon Dioxide</b>	
<b>Bioaccumulative Potential</b>	Not established.
<b>Carbon dioxide (124-38-9)</b>	
<b>BCF Fish 1</b>	(no bioaccumulation)
<b>Log Pow</b>	0.83

## 12.4. Mobility in Soil

Not available

## 12.5. Other Adverse Effects

**Other Information:** Avoid release to the environment.

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

**Waste Disposal Recommendations:** Dispose of waste material in accordance with all local, regional, national, provincial, territorial and international regulations.

**Additional Information:** Container may remain hazardous when empty. Continue to observe all precautions. Empty gas cylinders should be returned to the vendor for recycling or refilling. Do not puncture or incinerate container.

**Ecology - Waste Materials:** Avoid release to the environment.

## SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

### 14.1. In Accordance with DOT

**Proper Shipping Name** : CARBON DIOXIDE  
**Hazard Class** : 2.2  
**Identification Number** : UN1013  
**Label Codes** : 2.2  
**ERG Number** : 120



### 14.2. In Accordance with IMDG

**Proper Shipping Name** : CARBON DIOXIDE  
**Hazard Class** : 2.2  
**Identification Number** : UN1013  
**Label Codes** : 2.2  
**EmS-No. (Fire)** : F-C  
**EmS-No. (Spillage)** : S-V



### 14.3. In Accordance with IATA

**Proper Shipping Name** : CARBON DIOXIDE  
**Identification Number** : 2.2  
**Hazard Class** : UN1013  
**Label Codes** : 2.2  
**ERG Code (IATA)** : 2L



### 14.4. In Accordance with TDG

**Proper Shipping Name** : CARBON DIOXIDE  
**Hazard Class** : 2.2  
**Identification Number** : UN1013  
**Label Codes** : 2.2



## SECTION 15: REGULATORY INFORMATION

### 15.1. US Federal Regulations

<b>Carbon Dioxide</b>	
<b>SARA Section 311/312 Hazard Classes</b>	Sudden release of pressure hazard Immediate (acute) health hazard
<b>Carbon dioxide (124-38-9)</b>	

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Listed on the United States TSCA (Toxic Substances Control Act) inventory

## 15.2. US State Regulations

### Carbon dioxide (124-38-9)

U.S. - Massachusetts - Right To Know List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

## 15.3. Canadian Regulations

### Carbon dioxide (124-38-9)

Listed on the Canadian DSL (Domestic Substances List)

## SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

**Date of Preparation or Latest** : 10/30/2018

**Revision**

**Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR) SOR/2015-17.

### GHS Full Text Phrases:

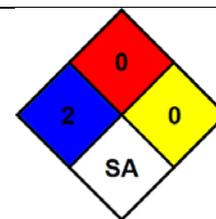
H280	Contains gas under pressure; may explode if heated
Press. Gas (Comp.)	Gases under pressure Compressed gas
Simple Asphy	Simple Asphyxiant
H280	Contains gas under pressure; may explode if heated

**NFPA Health Hazard** : 2 - Materials that, under emergency conditions, can cause temporary incapacitation or residual injury.

**NFPA Fire Hazard** : 0 - Materials that will not burn under typical dire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

**NFPA Reactivity Hazard** : 0 - Material that in themselves are normally stable, even under fire conditions.

**NFPA Specific Hazards** : SA - This denotes gases which are simple asphyxiants.



*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

NA GHS SDS 2015 (Can, US)