

**STRIKE FIRST**
CORPORATION

SAFETY DATA SHEET

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

Product Identifier

Product Name CARBON DIOXIDE FIRE EXTINGUISHING AGENT

Other means of identification

Synonyms CO2, Carbon Dioxide Gas

Recommended use of the chemical and restrictions on use

Recommended Use Fire Suppression

Uses advised against Not for human or animal drug use

Details of the Supplier of the Safety Data Sheet

Extinguisher Manufacturer STRIKE FIRST CORPORATION
777 Tapscott Rd. Toronto Ontario
M1X 1A2

Contact Information Phone: (416) 299-7767
Fax: (416) 299-8039
Email: info@strike-first.com

Chemical Supplier Name Air Liquide Canada Inc.

Supplier Address 1250, René Lévesque West Blvd. Suite 1700
Montreal, QC, H3B 5E6
Canada

Supplier Contact Numbers Phone: 1-800-817-7697
Website: www.airliquide.com

Emergency Telephone Number CHEMTREC 1-800-424-9300 or
(703) 527-3887

2. HAZARDS IDENTIFICATION

This SDS covers the products as sold in pressurized and non-pressurized containers. GHS classifications for both are listed below.

Classification

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

GHS – Classification

<u>Health</u>	<u>Environmental</u>	<u>Physical</u>
<u>Acute Toxicity: 4</u>	<u>None</u>	<u>Warning</u>
<u>Skin Corrosion/Irritation: None</u>	<u>None</u>	<u>None</u>
<u>Skin Sensitization: None</u>	<u>None</u>	<u>None</u>
<u>Eye: None</u>	<u>None</u>	<u>None</u>
<u>Carcinogen: None</u>	<u>None</u>	<u>None</u>

GHS Label elements, including precautionary statements

<u>Hazard Symbol</u>	<u>Signal Word</u>	<u>Hazard Statement</u>
	<u>Warning</u>	<u>Contents under pressure, may explode if heated</u>
	<u>Warning</u>	<u>Carbon dioxide is a simple asphyxiate. May displace oxygen and cause rapid suffocation.</u> <u>May cause frostbite in contact with skin or eyes.</u>

GHS Hazard	GHS Codes(s)	Code Phrase(s)
Physical	H280 281	*- Contains gas under pressure; may explode if heated. Contains refrigerated gas; may cause cryogenic burns or injury.
Health	H313 332	May be harmful in contact with skin. Harmful if inhaled.
Environmental		None
Precautionary:		
General	P101	If medical advice is needed, have product container or label at hand.
Prevention	P251 261 271 280	Do not pierce or burn, even after use. Avoid breathing gas. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	P312 321 336 304+340 305+310 313+333	Call a POISON CENTER/doctor if you feel unwell. Specific treatment (see Section 4. First Aid Measures) Thaw frosted parts with lukewarm water. Do not rub affected areas. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Immediately call a doctor. May be harmful in contact with skin or if inhaled.
Storage	P405 403+233 410+403	Store locked up. Store in a well ventilated place. Keep container tightly closed.
Disposal	P501	*- Protect from sunlight. Store in well-ventilated place. Dispose of contents through a licensed disposal company. Contaminated container should be disposed of as unused product.

3. COMPOSITION/INFORMATION ON INGREDIENTS**Synonyms**

CARBON DIOXIDE FIRE EXTINGUISHING AGENT

Chemical Name	CAS No	Weight - %	GHS Classification
Carbon Dioxide	124-38-9	>99.9	Pressurized Gas

4. FIRST AID MEASURES

First aid measures

Eye contact	Liquid or cold gas can cause freezing injury to eyes. Flush eyes with cool water for 15 minutes. Seek medical attention immediately.
Skin contact	May cause cold burns or frostbite. Remove contaminated clothing and flush affected areas with lukewarm (NOT HOT) water. Seek medical attention immediately if blistering of the dermal surface or if deep tissue freezing occurs.
Inhalation	Carbon dioxide is a simple asphyxiate. May cause coughing, dizziness, headache, dyspnea, unconsciousness. and death. If symptoms appear or respiratory distress occurs, remove victim to fresh air. Seek medical attention immediately.
Ingestion	None under normal conditions.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms and Effects May cause drowsiness or dizziness.

Most Important Symptoms and Effects both acute and delayed Low concentrations of CO2 cause increase respiration and headache.

Indication of any immediate medical attention and special treatment if needed

Notes to Physician Treat symptomatically

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool fire-exposed cylinders until flames are extinguished. Damaged cylinders should be handled on by specialists.

Unsuitable Extinguishing Media

CAUTION: Do not use water jet to extinguish.

Specific hazards arising from the chemical

No information available.

Hazardous Combustion Products

Carbon oxides.

Explosion Data

Sensitivity to Mechanical Impact No.

Sensitivity to Static Discharge No.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHS/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Ensure adequate ventilation & monitor oxygen level.

Environmental precautions

Environmental precautions Prevent spreading of vapors through sewers, ventilation systems and confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop the flow of gas or remove the cylinder to outdoor location if safe to do so. If leak is in cylinder or valve, contact Emergency contact is Section 1.

Methods for cleaning up Return cylinder/extinguisher to authorized distributor.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Pressurized cylinder should be handled by experience and properly trained personnel.

Conditions for safe storage, including any incompatibilities

Storage Keep container tightly closed. Keep/store only in original container.

Incompatible Products Passing carbon dioxide over a mixture of sodium peroxide and aluminum or magnesium may explode. Certain reactive metals, hydrides, moist cesium monoxide, or lithium acetylene carbide diamino may ignite.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Carbon Dioxide 124-38-9	TWA: 5000 ppm STEL: 30000 ppm	TWA [1]: 5000 ppm TWA [2]: 9000 mg/m ³	IDLH: 4000 ppm

ACGIH TLV: American Conference of Government Industrial Hygienist – Threshold Limit Value
OSHA PEL: Occupational Safety and Health Administration – Permissible Exposure Limits
NIOSH IDLH Immediately Dangerous to Life or Health

Appropriate engineering controls

Engineering measures

CO2 detectors should be used when CO2 may be released. Systems under pressure should be regularly checked for leakages. Ensure exposure is below occupational exposure limits (where available). Consider the use of a work permit system e.g. for maintenance activities.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear safety glasses with side shield (or goggles).

Skin and body protection

Wear protective gloves and protective clothing and safety shoes

Respiratory protection

No protective equipment is needed under normal conditions. If exposure limits are exceeded, use positive pressure respirator with escape cylinder or self-contained breathing apparatus for oxygen-deficient atmosphere.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Good personal hygiene practice is essential, such as avoiding food, tobacco products, or other hand-to-mouth contact when handling. Do not get in eyes, on skin, or on clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES**Physical and Chemical Properties**

Physical state	: Gas
Appearance	: No data available
Color	: White
Odor	: No odor warning properties
Odor Threshold	: < Odor threshold is subjective and inadequate to ward overexposure
pH	: Not applicable for gases and gas mixtures
Relative evaporation rate (butyl acetate=1)	: No data available
Relative evaporation rate (ether = 1)	: Not applicable
Molecular mass	: 44.01 g/mol
Melting point	: -56.6 °C
Freezing point	: -56.6 °C
Initial boiling point	: -78.5 °C – No data available for boiling range
Flash point	: Not applicable for gas and gas mixtures
Critical temperature	: 30 °C
Auto-ignition temperature	: Non-flammable
Decomposition temperature	: Not applicable
Flammability (solid gas)	: Non flammable
Vapor pressure	: 5730 kPa
Vapor pressure at 50 °C	: Not applicable
Critical pressure	: 7381.8 kPa
Relative vapor density at 20 °C	: Not applicable
Relative density	: 0.82
Relative gas density	: Heavier than air
Solubility	: Water; no reliable data available
Partition coefficient n-octanol/water (Log Pow)	: Not applicable for gas-mixtures
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: Not applicable
Explosive properties	: Not applicable
Oxidizing properties	: Not applicable
Explosion limits	: Non flammable
Lower explosive limit (LEL)	: No data available

Upper explosive limit (UEL) : No data available
 Physical state : Refrigerated solidified gas

Other information

Sublimation point : No data available
 Gas group : Compressed gas

10. STABILITY AND REACTIVITY

Reactivity : No reactivity hazard other than the effects described in sub-section below
 Chemical Stability : Stable under normal conditions
 Possibility of hazardous reactions : None
 Conditions to avoid : Avoid moisture in installation systems
 Incompatible materials : None. For additional information on compatibility refer to ISO 11114
 Hazardous decomposition products : Not produced under normal conditions
 Hardening Time : No additional information available

11. TOXICOLOGICAL INFORMATION**Information on likely routes of exposure**

Inhalation Asphyxiate, low concentration may cause drowsiness or dizziness, increased respiration and headache, increased blood pressure & pulse rate, High exposure may cause unconsciousness, death

Eye contact Contact with eyes may cause burns/frostbite

Skin contact Contact with skin may cause burns/frostbite

Ingestion Not applicable under normal conditions

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50 - Rat
Carbon Dioxide 124-38-9	No information available	No information available	820,000 ppm/4h

Other toxicity categories

Chemical Name	Germ Cell Mutagenicity	Carcinogenicity	Reproductive	TOST Single Exp	TOST Repeated Exposure	Aspiration
Carbon Dioxide 124-38-9	None	None	None	Central Nervous System, Respiratory System	None	None

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Ecology – general : No data available

Hazardous to the aquatic environment, short term (acute) : Not classified

Hazardous to the aquatic environment, long term (acute) : Not classified

Chemical Name	Partition coefficient n-octanol/water (Log Kow)	Partition coefficient n-octanol/water (Log Kow)
Carbon Dioxide	Not applicable for gas-mixtures	Not applicable for gas-mixtures

Persistence Degradability

No data available

Bioaccumulation

Bioaccumulative potential – No ecological damage caused by this product

Chemical Name	Partition coefficient n-octanol/water (Log Kow)	Partition coefficient n-octanol/water (Log Kow)
Carbon Dioxide	Not applicable for gas-mixtures	Not applicable for gas-mixtures

Mobility in soil

Ecology - soil – Because of its high volatility, the product is unlikely to cause ground or water pollution. Partition into soil is unlikely

Chemical Name	Partition coefficient n-octanol/water (Log Kow)	Partition coefficient n-octanol/water (Log Kow)
Carbon Dioxide	Not applicable for gas-mixtures	Not applicable for gas-mixtures

Other adverse effects

Ozone – Not classified

Effect on ozone layer - None

Other adverse effects – No known effects from this product

13. DISPOSAL INFORMATION

Waste treatment methods : Discharge to atmosphere in large quantities should be avoided. Contact supplier if guidance is required. Do not discharge into any place where its accumulation could be dangerous. Ensure that the emission levels from local regulations or operating permits are not exceeded. Refer to the EIGA code of practice Doc.30 "Disposal of Gases", downloadable at <http://www.eiga.org> for more guidance on suitable disposal methods. Return unused product in original container to supplier.

Additional information : External treatment and disposal of waste should comply with applicable local and/or national regulations.

14. TRANSPORTATION INFORMATION

UN number	DOT	TDG	MEXICO	IMDG	IATA
	UN1013	UN1013	UN1013	UN1013	UN1013

UN proper shipping name	CARBON DIOXIDE	CARBON DIOXIDE	CARBON DIOXIDE	CARBON DIOXIDE	CARBON DIOXIDE
Transport hazard classes	2.2 	2.2 	2.2 	2.2 	2.2 
Packing group	-	-	-	-	-
Environment	No	No	No	No	No

NOTES:

This product is not defined as a hazardous material under U.S. Department of Transportation (DOT) 49 CFR 173, or by Transport Canada “Transportation of Dangerous Goods” regulations.

Special Precautions for Shipping:

If shipped in a stored pressure-type fire extinguisher, and pressurized with a non-flammable, nontoxic inert expellant gas, the fire extinguisher is considered a hazardous material by the US Department of Transportation and Transport Canada. The proper shipping name shall be FIRE EXTINGUISHER and the UN designation is UN 1013. The DOT hazard class is Limited Quantity when shipped via highway or rail. Use a Non-Flammable Gas label (class 2.2) when shipping via air.

15. REGULATORY INFORMATION

International Inventories

All ingredients are on the following inventories

Country(ies)	Agency	Status
United States of America (USA)	TSCA	Yes
Canada	WHMIS	Not controlled
Australia	AICS	Listed or exempt
Europe	EINECS	Not Classified

REACH Title VII Restrictions

No information available

Chemical Name	Dangerous Substances	Organic Solvents	Harmful Substances Whose Names Are To be Indicated On The Label	Pollution Release And Transfer Registry (Class II)	Pollution Release And Transfer Registry (Class I)	Poison And Deleterious Substances Control Law
Water	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Component	ISHA – Harmful Substances Prohibited for Manufacturing, Importing, Transferring, or Supplying	ISHA – Harmful Substances Requiring Permission	Toxic Chemical Classification Listing (TCCL) – Toxic Chemicals	Toxic Release Inventory (TRI) – Group I	Toxic Release Inventory (TRI) – Group II
Water	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

US Federal Regulations

SARA 313:

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) - This product does not contain and chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372. None of the chemicals in this product are under SARA reporting requirements or have SARA threshold planning quantities (TPQs) or CERCLA reportable quantities (RQs), or are regulated under TSCA 8(d).

SARA 311/312 Hazard Categories:

Acute Health Hazard	:No
Chronic Health Hazard	: No
Fire Hazard	: No
Sudden Release of Pressure Hazard-*	: Yes
Reactive Hazard	:No
* - Only applicable if material is in a pressurized extinguisher.	

Clean Water/Clean Air Acts:

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42) or Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61) and Section 112 of the Clean Air Act Amendments of 1990.

US State Regulations

Chemicals in this product are covered under specific State regulations, as denoted below:

Alaska - Designated Toxic and Hazardous Substances: None

California – Permissible Exposure Limits for Chemical Contaminants: None

Florida – Substance List: None

Illinois – Toxic Substance List: None

Kansas – Section 302/303 List: None

Massachusetts – Substance List: None

Minnesota – List of Hazardous Substances: None

Missouri – Employer Information/Toxic Substance List: None

New Jersey – Right to Know Hazardous Substance List: None

North Dakota – List of Hazardous Chemicals, Reportable Quantities: None

Pennsylvania – Hazardous Substance List: None

Rhode Island – Hazardous Substance List: None

Texas – Hazardous Substance List: None

West Virginia – Hazardous Substance List: None

Wisconsin – Toxic and Hazardous Substances: None

California Proposition 65

This product does not contain any material the following Proposition 65 chemicals.

International Regulations**Mexico****National occupational exposure limits**

Mexico – Occupational Exposure Limits – Not determined

Canada

WHMIS Hazard Class - Not Determined

16. OTHER INFORMATION

Prepared By	Strike First Corporation
	777 Tapscott Road
	Scarborough ON
	M1X 1A2 Canada
Revision Date	March 20, 2023
Revision Note	Origination

Disclaimer:

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of this publication. This information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the test.

END OF SAFETY DATA SHEET