SAFETY DATA SHEET
Carbon Dioxide
(Fire Extinguishing Agent and Expellant)

1. IDENTIFICATION

Product Name	Carbon Dioxide (Fire Extinguishing Agent and Expellant)
Other Names	CO2
Recommended use of the chemical and restrictions on use	
Identified uses	Fire Extinguishing Agent and Expellant
Restrictions on use	Consult applicable fire protection codes
Company Identification	Kidde-Fenwal, Inc. 400 Main Street Ashland, MA 01721 USA
Customer Information Number	(508) 881-2000
Emergency Telephone Number	
Chemtrec Number	(800) 424-9300 (703) 527-3887 (International)
Issue Date	July 12, 2021
Supersedes Date	March 11, 2020

Safety Data Sheet prepared in accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200) and the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

2. HAZARD IDENTIFICATION

Hazard Classification
Gas under pressure – liquefied gas
Simple Asphyxiant

Label Elements
Hazard Symbols

Signal Word: Warning

Hazard Statements
Contents under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary Statements
Prevention
Do not enter confined space unless adequately ventilated.
In case of inadequate ventilation wear respiratory protection.
Response
None
Storage
Keep container tightly closed.
Protect from sunlight and store in well-ventilated place.
Disposal
None

2. HAZARD IDENTIFICATION

Other Hazards
Direct contact with the cold gas or liquid can cause freezing of exposed tissues. Avoid direct inhalation of undiluted gas. Can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations can cause dizziness, shortness of breath, unconsciousness or asphyxiation.

Specific Concentration Limits
The values listed below represent the percentages of ingredients of unknown toxicity.

Acute oral toxicity	0%
Acute dermal toxicity	0%
Acute inhalation toxicity	0%
Acute aquatic toxicity	100%

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: CO2
This product is a substance.

Component	CAS Number	Concentration
Carbon Dioxide	124-38-9	>99.8%

4. FIRST- AID MEASURES

Description of necessary first-aid measures
Eyes
Immediately flood the eye with plenty of water for at least 15 minutes, holding the eye open. Obtain medical attention if soreness or redness persists.
Skin
Gently warm affected areas. Obtain medical attention if frostbite or blistering occurs or redness persists.
Ingestion
Ingestion is not considered a potential route of exposure.
Inhalation
Remove from exposure. If there is difficulty in breathing, give oxygen. Obtain medical attention immediately.

Most important symptoms/effects, acute and delayed
Aside from the information found under Description of necessary first aid measures (above) and Indication of immediate medical attention and special treatment needed, no additional symptoms and effects are anticipated.

Indication of immediate medical attention and special treatment needed
Notes to Physicians
In case of frostbite, place the frostbitten part in warm water. If warm water is not available or impractical to use, wrap the affected parts gently in blankets. DO NOT USE HOT WATER.

5. FIRE - FIGHTING MEASURES

Suitable Extinguishing Media
Carbon Dioxide is used as an extinguishing agent and therefore is not a problem when trying to control a blaze. Use extinguishing agent appropriate to other materials involved. Keep containers and surroundings cool with water spray as containers may rupture or burst in the heat of a fire.

5. FIRE - FIGHTING MEASURES

Specific hazards arising from the chemical
Containers may explode in heat of fire.

Special Protective Actions for Fire-Fighters
Wear full protective clothing and self-contained breathing apparatus as appropriate for specific fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Remove leaking cylinder to a safe place. Ventilate the area. Leaks inside confined spaces may cause suffocation as oxygen is displaced and should not be entered without a self-contained breathing apparatus.

Environmental Precautions
None - Material is a normal atmospheric gas.

Methods and materials for containment and cleaning up
None - Material evaporates.

7. HANDLING AND STORAGE

Precautions for safe handling
Containers should be properly stored and secured to prevent falling or being knocked over. Do not drag, slide or roll containers. Do not drop containers or permit them to strike against each other. Never apply flame or localized heat directly to any part of the containers.

Conditions for safe storage
Store away from sources of heat or ignition. Storage area should be: - cool - dry - well ventilated - under cover - out of direct sunlight

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
Exposure limits are listed below, if they exist.
Carbon Dioxide
ACGIH TLV: 5000 ppm (9000 mg/m^3) STEL: 30,000 ppm (54,000 mg/m^3)
OSHA PEL: 5000 ppm (9000 mg/m^3)

Appropriate engineering controls
Use with adequate ventilation (natural or mechanical), especially in a confined space.

Individual protection measures
Respiratory Protection
Not normally required. In oxygen deficient atmospheres, use a self contained breathing apparatus, as an air purifying respirator will not provide protection.
Skin Protection
Gloves
Eye/Face Protection
Chemical goggles or safety glasses with side shields.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Body Protection
Normal work wear.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical State	Liquefied gas under pressure
Color	Colorless
Odor	Odorless to Slightly Acidic
Odor Threshold	No data available
pH	Not applicable
Specific Gravity	1.522
Boiling Range/Point (°C/F)	-56.6°C/-69.8 °F
Melting Point (°C/F)	-78.5°C/-109.2 °F (sublimation)
Flash Point (PMCC) (°C/F)	Not flammable
Vapor Pressure	838 psig @70°F and 1 atmosphere
Evaporation Rate (BuAc=1)	Not applicable
Solubility in Water	Soluble
Vapor Density (Air = 1)	Heavier than air.
VOC (%)	Not applicable
Partition coefficient (n-octanol/water)	No data available
Viscosity	Not applicable
Auto-ignition Temperature	No data available
Decomposition Temperature	No data available
Upper explosive limit	Not explosive
Lower explosive limit	Not explosive
Flammability (solid, gas)	Not flammable

10. STABILITY AND REACTIVITY

Reactivity
Containers may rupture or explode if exposed to heat.

Chemical Stability
Stable under normal conditions.

Possibility of hazardous reactions
Hazardous polymerization will not occur.

Conditions to Avoid
Extremely high temperatures - contact with incompatible materials

Incompatible Materials
Powdered metals (ex. aluminum, zinc, etc.) - strong oxidizing agents – alkalis

Hazardous Decomposition Products
In contact with moisture will generate carbonic acid.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
Simple asphyxiant. LCLo (inhalation in humans): 90,000ppm/ 5 minutes.

Specific Target Organ Toxicity (STOT) – single exposure
Exposure to carbon dioxide vapor at high concentrations can cause loss of consciousness which may prove fatal due to suffocation as it displaces oxygen. Symptoms may include light headedness, dizziness, difficulty with breathing, drowsiness, nausea, mental confusion, increased blood pressure and increased respiratory rate.

Specific Target Organ Toxicity (STOT) – repeat exposure
No data available.

Serious Eye damage/Irritation
Direct contact with the cold gas or liquid can cause freezing of exposed tissues.

Skin Corrosion/Irritation
Direct contact with the cold gas or liquid can cause freezing of exposed tissues.

Respiratory or Skin Sensitization
Available data indicates this product is not expected to cause skin or respiratory sensitization.

Carcinogenicity
Not considered carcinogenic by NTP, IARC, and OSHA.

Germ Cell Mutagenicity
Available data indicates this product is is not expected to be mutagenic.

Reproductive Toxicity
Available data indicates this product is not expected to cause reproductive toxicity or birth defects.

Aspiration Hazard
Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

Ecotoxicity
LC50 (Rainbow trout) 60mg/l 96 hr

Mobility in soil
Carbon dioxide occurs naturally in the atmosphere.

Persistence/Degradability
Carbon dioxide occurs naturally in the atmosphere.

Bioaccumulative Potential
Carbon dioxide occurs naturally in the atmosphere.

Other adverse effects
No relevant studies identified.

13. DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose of container in accordance with all applicable local and national regulations. Do not cut puncture or weld on or near to the container. If spilled, contents will vaporize to the atmosphere.

14. TRANSPORT INFORMATION

Safety Data Sheet information is intended to address a specific material and not various forms or states of containment.

Pressurized Containers

DOT CFR 172.101 Data	Carbon Dioxide, 2.2, UN1013
UN Proper Shipping Name	Carbon Dioxide
UN Class	(2.2)
UN Number	UN1013
UN Packaging Group	Not Applicable
Classification for AIR Transportation (IATA)	Consult current IATA Regulations prior to shipping by air.
Classification for Water Transport IMDG	Consult current IMDG Regulations prior to shipping by water. Carbon Dioxide, 2.2, UN1013

This section is believed to be accurate at the time of preparation. It is not intended to be a complete statement or summary of the applicable laws, rules, or hazardous material regulations, and is subject to change. Users have the responsibility to confirm compliance with all laws, rules, and hazardous material regulations in effect at the time of shipping.

15. REGULATORY INFORMATION

United States TSCA Inventory
All components of this product are in compliance with the inventory listing requirements of the US Toxic Substance Control Act (TSCA) Chemical Substance Inventory.

Canada DSL Inventory
All ingredients in this product have been verified for inclusion on the Domestic Substance List (DSL).

SARA Title III Sect. 311/312 Categorization
Gas under pressure

SARA Title III Sect. 313
This product does not contain any chemicals listed in Section 313 at or above de minimis concentrations.

16. OTHER INFORMATION

NFPA Ratings
NFPA Code for Health - 1
NFPA Code for Flammability - 0
NFPA Code for Reactivity - 0
NFPA Code for Special Hazards – None

16. OTHER INFORMATION

Legend
ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstracts Service
IARC: International Agency for Research on Cancer
LCLo: Lethal concentration low
N/A: Denotes no applicable information found or available
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PEL: Permissible Exposure Limit
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value

Revision Date: July 12, 2021
Replaces: March 11, 2020
Changes made: Updated melting point

Information Source and References
This SDS is prepared by Hazard Communication Specialists based on information provided by internal company references.

Prepared By: EnviroNet LLC.

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