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**1. IDENTIFICATION**

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<b>Product Name</b>	Carbon Dioxide (Fire Extinguishing Agent and Expellant)
<b>Other Names</b>	CO2
<b>Recommended use of the chemical and restrictions on use</b>	
<b>Identified uses</b>	Fire Extinguishing Agent and Expellant
<b>Restrictions on use</b>	Consult applicable fire protection codes
<b>Company Identification</b>	Kidde-Fenwal, Inc. 400 Main Street Ashland, MA 01721 USA
<b>Customer Information Number</b>	(508) 881-2000
<b>Emergency Telephone Number</b>	
<b>Chemtrec Number</b>	(800) 424-9300 (703) 527-3887 (International)
<b>Issue Date</b>	October 1, 2015
<b>Supersedes Date</b>	April 10, 2015

*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)*

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**2. HAZARD IDENTIFICATION**

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**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.

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**2. HAZARD IDENTIFICATION**

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**Response**

None

**Storage**

Keep container tightly closed.

Protect from sunlight and store in well-ventilated place.

**Disposal**

None

**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%

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**3. COMPOSITION/INFORMATION ON INGREDIENTS**

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

This product is a substance.

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

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**4. FIRST- AID MEASURES**

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**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.

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**4. FIRST- AID MEASURES**

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**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.

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**5. FIRE - FIGHTING MEASURES**

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**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.

**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.

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**6. ACCIDENTAL RELEASE MEASURES**

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**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.

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**7. HANDLING AND STORAGE**

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**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

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**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

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**Control parameters**

Exposure limits are listed below, if they exist.

**Carbon Dioxide**

ACGIH TLV: 5000 ppm (9000 mg/m<sup>3</sup>) STEL: 30,000 ppm (54,000 mg/m<sup>3</sup>)

OSHA PEL: 5000 ppm (9000 mg/m<sup>3</sup>)

**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.

**Body Protection**

Normal work wear.

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**9. PHYSICAL AND CHEMICAL PROPERTIES**

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**Appearance**

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

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**10. STABILITY AND REACTIVITY**

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**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.

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**11. TOXICOLOGICAL INFORMATION**

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**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 not expected to be mutagenic.

**Reproductive Toxicity**

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

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**11. TOXICOLOGICAL INFORMATION**

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**Aspiration Hazard**

Not an aspiration hazard.

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**12. ECOLOGICAL INFORMATION**

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**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.

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**13. DISPOSAL CONSIDERATIONS**

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**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.

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**14. TRANSPORT INFORMATION**

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

**Pressurized Containers**

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

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.

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**15. REGULATORY INFORMATION**

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**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**

Pressure Hazard

**SARA Title III Sect. 313**

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

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**16. OTHER INFORMATION**

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**NFPA Ratings**

NFPA Code for Health - 1

NFPA Code for Flammability - 0

NFPA Code for Reactivity - 0

NFPA Code for Special Hazards – None

**HMIS Ratings**

HMIS Code for Health - 1

HMIS Code for Flammability - 0

HMIS Code for Physical Hazard - 0

HMIS Code for Personal Protection - See Section 8

\*Chronic

**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: October 1, 2015

Replaces: April 10, 2015

Changes made: Update to Section 14.

**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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**16. OTHER INFORMATION**

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The information and recommendations presented in this SDS are based on sources believed to be accurate. Kidde - Fenwal Inc. assumes no liability for the accuracy or completeness of this information. It is the user's responsibility to determine the suitability of the material for their particular purposes. In particular, we make **NO WARRANTY OF MERCHANTABILITY OR ANY OTHER WARRANTY, EXPRESS OR IMPLIED**, with respect to such information, and we assume no liability resulting from its use. Users should ensure that any use or disposal of the material is in accordance with applicable Federal, State, and local laws and regulations.

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