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

1.1. Identification of the preparation

Product Name:	"Carbon Dioxide"
Chemical Name:	Carbon Dioxide
CAS No.:	124-38-9
Chemical Formula:	CO_2
EINECS Number:	204-696-9

1.2. Use of the preparation

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT.

1.3. Company identification

Manufacturer/Supplier:	ANSUL INCORPORATED
Address:	One Stanton Street, Marinette, WI 54143-2542
Prepared by:	Safety and Health Department
Phone:	715-735-7411
Internet/Home Page:	http://www.ansul.com
Date of Issue:	September, 2009

1.4. Emergency telephone

CHEMTREC 800-424-9300 or 703-527-3887

2. COMPOSITION/INFORMATION ON INGREDIENTS

2.1.

Ingredient Name:	Carbon Dioxide.
Chemical Formula:	CO_2.
CAS No.:	124-38-9.
EINECS Number:	204-696-9.
Concentration, Wt %:	100%.
Hazard Identification:	See Heading 3.

3. HAZARDS IDENTIFICATION

FOR HUMANS:

EU Classification:		Nonflammable Gas.
R Phrases:		None.
S Phrases:	9	Keep container in a well ventilated place.

Limit Values for Exposure:

OSHA PEL:	5,000 ppm, (9,000 mg/m^3).
ACGIH TLV-TWA:	5,000 ppm, (9,000 mg/m^3).
ACGIH TLV-STEL:	30,000 ppm, (54,000 mg/m^3).

IDLH (Immediately Dangerous for Life and Health): 50,000 ppm.

This substance has not been listed as carcinogenic by National Toxicology Program, IARC, or OSHA.

SIGNS AND SYMPTOMS:

Acute Exposure:

Eye Contact:	Contact with carbon dioxide snow (dry ice) can produce chilling sensations and discomfort, also frostbite.
Skin Contact:	Evaporation of liquid from the skin can produce chilling sensations. Frostbite can occur. Avoid carbon dioxide snow (dry ice).
Inhalation:	Vapor is heavier than air and can cause suffocation by reducing oxygen available for breathing. Breathing very high concentrations of vapor can cause lightheadedness, giddiness, shortness of breath, muscular tremors, and weakness, acrocyanosis. Also unconsciousness or even death
Ingestion:	Ingestion is not likely to occur since this substance is a gas at room temperature.

Chronic Overexposure: No data available.

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Respiratory problems.

FOR ENVIRONMENT:

Carbon dioxide is a global warming gas.

4. FIRST AID MEASURES

Eye Contact:	Immediately flush eyes with water for a minimum of 15 minutes. If redness, itching or a burning sensation develops, get medical attention. Treat for frostbite if necessary.
Skin Contact:	If redness, itching or a burning sensation develops, get medical attention. Treat for frostbite if necessary.
Inhalation:	Remove victim to fresh air. If cough or other respiratory symptoms occur, consult medical personnel. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Consult medical personnel.
Ingestion:	None needed.

5. FIRE-FIGHTING MEASURES

This preparation is an extinguishing media.

There are NO extinguishing media which must not be used for safety reasons.

Though gas cylinders are equipped with pressure and temperature relief devices, they should be removed from high temperature areas or fires, if safe to do so, to avoid risk of rupture.

NO special protective equipment is needed for fire-fighters.

6. ACCIDENTAL RELEASE MEASURES

For personal protection: Prevent skin and eye contact, see Heading 8.

Clean up: This substance will vaporize into the atmosphere, see Heading 13.

This substance is a global warming gas.

7. HANDLING AND STORAGE

7.1. Handling

Care should be taken in handling all chemical substances and preparations.

Secure to prevent falling. Do not move without safety cap in place to prevent damage to valve.

See incompatibility information in Heading 10.

7.2. Storage

Store containers in a clean, dry, well-ventilated area, away from heat above 120 °F. Store as a compressed gas in DOT approved vessels. Keep safety cap in place while in storage.

See incompatibility information in Heading 10.

This substance is a global warming gas.

7.3. Specific use

The intended or recommended use of this preparation is as a FIRE EXTINGUISHING AGENT.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limit values

Limit Values for Exposure:

OSHA PEL:	5,000 ppm, (9,000 mg/m^3).
ACGIH TLV-TWA:	5,000 ppm, (9,000 mg/m^3).
ACGIH TLV-STEL:	30,000 ppm, (54,000 mg/m^3).

IDLH (Immediately Dangerous for Life and Health): 50,000 ppm.

8.2. Exposure controls

8.2.1. Occupational exposure controls

8.2.1.1. Respiratory protection

Not expected to be needed if controls are adequate. If TLV is exceeded or if exposure is prolonged, a self-contained breathing apparatus is recommended. Maintain good ventilation during use of this substance in order to minimize worker exposure.

8.2.1.2. Hand protection

Protective gloves for contact with dry ice.

8.2.1.3. Eye protection

Use safety glasses with side shields or safety goggles particularly when handling the liquid.

8.2.1.4. Skin protection

Protective clothing as needed for contact with dry ice.

8.2.2. Environmental exposure controls

Since this is a gas at normal conditions, release should be only as needed to extinguish fires.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General information

Appearance:	Colorless gas.
Odor:	None.

9.2. Important health, safety, and environmental information

pH:	Not determined.
Boiling point/boiling range:	Sublimes.
Flash point:	None.
Flammability (solid/gas):	Not flammable.
Explosive properties:	Not explosive.
Oxidizing properties:	Not an oxidizer.
Vapor Pressure:	830 psi @ 20 °C.
Relative Density:	Not applicable.
Solubility:	
– Water solubility:	88 ml carbon dioxide per 100 ml @ 20 °C.
– Fat solubility:	Not soluble.
Partition coefficient, n-octanol/water:	Not determined.
Viscosity:	Not determined.
Vapor density (Air = 1):	1.5.
Evaporation rate:	Not applicable.

9.3. Other information

Auto-ignition temperature:	Does not ignite.

10. STABILITY AND REACTIVITY

10.1. Conditions to avoid

Extremely high temperatures, as in a fire may cause a cylinder to fail.

There are no known conditions such as temperature, pressure, light, shock, etc., which may cause a dangerous reaction.

10.2. Materials to avoid

(Al + Na_2O_2), (Mg + Na_2O), Cs_2O, Li, K, $Mg(C_2H_5)_2$, KC_2H, Na, NaK, and Ti.

10.3. Hazardous decomposition products

Normally stable.

Hazardous polymerization will not occur.

There are no hazardous combustion or decomposition products.

11. TOXICOLOGICAL INFORMATION

Inhalation LC_{LO} (human) = 100,000 ppm/min.

12. ECOLOGICAL INFORMATION

12.1. Ecotoxicity

This material is a normal atmospheric gas.

12.2. Mobility

This material is a normal atmospheric gas.

12.3. Persistence and degradability

This material is a normal atmospheric gas.

12.4. Bioaccumulative potential

This material is a normal atmospheric gas.

12.5. Other adverse effects

Ozone depletion potential:	None.
Photochemical ozone creation potential:	None
Global warming potential:	This is a global warming gas.

13. DISPOSAL CONSIDERATIONS

This preparation, if spilled it will vaporize to the atmosphere.
This is a global warming gas.

14. TRANSPORT INFORMATION

Hazard Class or Division:	Carbon Dioxide, Class 2.2, UN1013
Label:	Nonflammable gas.

Emergency response guide page number: 120; EMS (Intl): 2-09.
For additional transport information, contact Ansul Incorporated.
This is a global warming gas.

15. REGULATORY INFORMATION

EU Classification:		Nonflammable Gas.
R Phrases:		None.
S Phrases:	9	Keep container in a well ventilated place.

Exposure Limit Values:

OSHA PEL:	5,000 ppm, (9,000 mg/m^3).
ACGIH TLV-TWA:	5,000 ppm, (9,000 mg/m^3).
ACGIH TLV-STEL:	30,000 ppm, (54,000 mg/m^3).

IDLH (Immediately Dangerous for Life and Health): 50,000 ppm.

EINECS Status:	All components are included in EINECS inventories or are exempt from listing.
EPA TSCA Status	All components are included in TSCA inventories or are exempt from listing.
Canadian DSL (Domestic Substances List):	All components are included in the DSL or are exempt from listing.
Environmental restrictions:	None are known.
Restrictions on Marketing and Use:	None are known.

Refer to any other national measures that may be relevant.

16. OTHER INFORMATION

(HMIS) HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

HEALTH:	1	4. Severe Hazard
FLAMMABILITY:	0	3. Serious Hazard
REACTIVITY:	0	2. Moderate Hazard
		1. Slight Hazard
		0. Minimal Hazard

(WHMIS) CANADIAN WORKPLACE HAZARDOUS MATERIAL IDENTIFICATION SYSTEM RATINGS:

This product is rated: **A – Compressed Gas.**

Format is from directive 2001/58/EC.

EINECS data is from http://ecb.jrc.it/existing-chemicals/

Data used to compile the data sheet is from Ansul Material Safety Data Sheet, February, 2002.

Toxicological information added from the EINECS ESIS (Existing Substances Information System). A rating under WHMIS has been added, following the Canadian guidelines.

Updated to new format.

The EU Classification has been changed in accordance with Directive 1999/45/EC and information in the EINECS ESIS files. A rating under WHMIS has been added, following the Canadian guidelines.

17. DISCLAIMER

THE ABOVE INFORMATION IS BELIEVED TO BE CORRECT, BUT DOES NOT PURPORT TO BE ALL INCLUSIVE AND SHALL BE USED ONLY AS A GUIDE. ANSUL SHALL NOT BE HELD LIABLE FOR ANY DAMAGE RESULTING FROM HANDLING OR FROM CONTACT WITH THE ABOVE PRODUCT.

MSDS available at http://www.ansul.com

