# Material Safety Data Sheet

## 1. Product and Company Identification

Product name : **Carbon Dioxide, Gas**

Chemical formula : $CO_2$

Synonyms : Carbonic Acid Gas, Carbon Dioxide, Carbon Oxide, Carbonic Anhydride

Company : Specialty Gases of America, Inc
6055 Brent Dr.
Toledo, OH 43611

Telephone : 419-729-7732

Emergency : 800-424-9300

## 2. Composition/Information on Ingredients

| Components | CAS Number | % Volume |
|---|---|---|
| Carbon Dioxide, Gas | 124-38-9 | 100% |

## 3. Hazards Identification

Emergency Overview

Containers may rupture or explode if exposed to heat.
May cause difficulty breathing.

Potential Health Effects

Inhalation : Changes in blood pressure, ringing in the ears, nausea, difficulty breathing, irregular heartbeat, headache, drowsiness, dizziness, tingling sensation, tremors, weakness, visual disturbances, suffocation, convulsions, unconsciousness, coma.

Eye contact : Blurred vision, frostbite.

Skin contact : Blisters, frostbite.

Ingestion : Ingestion of a gas is unlikely.

Chronic Health Hazard : Not applicable.

## 4. First Aid Measures

General advice : None.

Eye contact : Contact with liquid: Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Skin contact : If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blanket. Get immediate medical attention.

Ingestion : If a large amount is swallowed, get medical attention.

Inhalation : If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be

administered by qualified personnel. Get immediate medical attention.

## 5. Fire-Fighting Measures

| | | |
|---|---|---|
| Suitable extinguishing media | : | Use extinguishing agents appropriate for surrounding fire. |
| Specific hazards | : | Negligible fire hazard. Containers may rupture or explode if exposed to heat. |
| Fire fighting | : | Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For tank, rail car or tank truck: Evacuation radius: 800 meters (1/2 mile). Use extinguishing agents appropriate for surrounding fire. Cool containers with water spray until well after the fire is out. Do not get water directly on material. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. |

## 6. Accidental Release Measures

| | | |
|---|---|---|
| Personal precautions | : | None. |
| Environmental precautions | : | None. |
| Methods for cleaning up | : | Do not touch spilled material. Stop leak if possible without personal risk. Reduce vapors with water spray. Keep unnecessary people away. Isolate hazard area and deny entry. Ventilate closed spaces before entering. |
| Additional advice | : | None. |

## 7. Handling and Storage

Handling

Secure cylinder when using to protect from falling. Use suitable hand truck to move cylinders.

Storage

Store in accordance with all current regulations and standards. Protect from physical damage. Store in a well-ventilated area. Subject to storage regulation: U.S. OSHA 29 CFR 1910.101. Keep separated from incompatible substances.

## 8. Exposure Controls / Personal Protection

Exposure limits

5000 ppm (9000 mg/m3) OSHA TWA
10000 ppm (18000 mg/m3) OSHA TWA (vacated by 58 FR 35338, June 30, 1993)
30000 ppm (54000 mg/m3) OSHA STEL (vacated by 58 FR 35338, June 30, 1993)
5000 ppm ACGIH TWA
30000 ppm ACGIH STEL
5000 ppm (9000 mg/m3) NIOSH recommended TWA 10 hour(s)
30000 ppm (54000 mg/m3) NIOSH recommended STEL

Engineering measures

Not available.

Personal protective equipment

| | | |
|---|---|---|
| Respiratory protection | : | The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.<br>40000 ppm – Any supplied-air respirator. Any self-contained breathing apparatus with a full facepiece.<br>Escape – Any appropriate escape-type, self-contained breathing apparatus.<br>For unknown concentrations or immediately dangerous to life or death – Any |

| | | |
|---|---|---|
| | | supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply. Any self-contained breathing apparatus with a full facepiece. |
| Hand protection | : | Wear insulated gloves. |
| Eye protection | : | For the gas: Eye protection is not required, but recommended. For the liquid: Wear splash resistant safety goggles. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area. |
| Skin and body protection | : | For the gas, Protective clothing is not required. For the liquid: Wear appropriate protective, cold insulating clothing. |
| Ventilation | : | Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits. |

## 9. Physical and Chemical Properties

| | | |
|---|---|---|
| Form | : | Gas. |
| Color | : | Colorless. |
| Odor | : | Odorless. |
| Taste | : | Acid taste. |
| Molecular weight | : | 44.01 |
| Vapor pressure | : | 43700 mmHg @ 21 C |
| Vapor density | : | 1.5 (air = 1) |
| Specific gravity | : | 1.527 @ 21 C (water = 1) |
| Boiling point | : | -109.3 to -79 F (-78.50 to -61.7 C) (liquid) |
| Freezing point | : | -71 F (-57 C) @ 4000 mmHg |
| Water solubility | : | Soluble. |

## 10. Stability and Reactivity

| | | |
|---|---|---|
| Stability | : | Stable at normal temperatures and conditions. |
| Conditions to avoid | : | Protect from physical damage and heat. Containers may rupture or explode if exposed to heat. Avoid contact with water or moisture. |
| Materials to avoid | : | Combustible materials, oxidizing materials, metal salts, reducing agents, metal carbide, metals, bases, potassium, sodium, ethyleneimine. |
| Hazardous decomposition products | : | Thermal decomposition products: oxides of carbon. |

## 11. Toxicological Information

Acute Health Hazard

| | | |
|---|---|---|
| Ingestion | : | Not available. |
| Inhalation | : | Not available. |
| Skin | : | Not available. |
| Medical conditions aggravated by exposure | : | Heart or cardiovascular disorders, respiratory disorders. |

## 12. Ecological Information

Ecotoxicity Data

| | | |
|---|---|---|
| Fish toxicity | : | 150000 ug/L 48 day(s) (Mortality) Brown trout (Salmo trutta) |

## 13. Disposal Considerations

| | | |
|---|---|---|
| Waste from residues / unused products | : | Dispose in accordance with all applicable regulations. |
| Contaminated packaging | : | Return cylinder to supplier. |

## 14. Transport Information

DOT (US only)

| | | |
|---|---|---|
| Proper shipping name | : | Carbon Dioxide |
| Class | : | 2.2 |
| UN/ID No. | : | UN1013 |
| Labeling | : | Non-Flammable Gas |

Further information

Cylinders should be transported in a secure upright position in a well ventilated truck.

## 15. Regulatory Information

OSHA Process Safety (29 CFR 1910.119) Hazard Class(es)

Not regulated.

TCSA

Material is listed in TSCA inventory.

SARA Title III Section 302 Extremely Hazardous Substances (40 CFR 355.30)

Not regulated.

SARA Title III Section 304 Extremely Hazardous Substances (40 CFR 355.40)

Not regulated.

SARA Title III SARA Sections 311/312 Hazardous Categories (40 CFR 370.21)

Acute: Yes
Chronic: No
Fire: No
Reactive: No
Sudden Release: Yes

SARA Title III Section 313 (40 CFR 372.65)

Not regulated.

## 16. Other Information

Prepared by : Specialty Gases of America, Inc.

For additional information, please visit our website at www.americangasgroup.com.