

Material Safety Data Sheet

Product Name: Carbon dioxide - Solid - DRY ICE
Date of Issue: 19/06/2020 Revision: 0



1. Product and Company identification:

Product : Carbon dioxide
Chemical Formula : CO₂
Chemical description : Solid Carbon dioxide, Dry ice
Company name : Premier Carbonic Pvt Ltd
13/700, Coimbatore road, Kalmandapam,
Kerala, India - 678003
Emergency Contact number : +919962326026

2. Hazards Identification:

Hazard Warning : Not applicable
Label Elements : Not applicable
Human : Solid carbon dioxide is freezing and can cause frostbite in contact with skin.
Carbon dioxide gas in high concentrations is an asphyxiate, which acts by excluding O₂ from the lungs
Environment : Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

3. First Aid Measures:

Inhalation : Immediately remove the person from the source of exposure to fresh air, keep warm and at rest. If unconscious, loosen tight clothing and place in a stable position, lying on one side. If breathing is difficult, provide oxygen if possible. If the heart has stopped, provide cardiac compression.
Eye : Immediately flush eyes thoroughly with water for 20 minutes. Check for and remove any contact lenses. Seek medical assistance immediately if irritation doesn't stop.
Skin : Do not rub frostbitten skin or break blisters. Remove all clothing from around the affected area. Immerse frostbitten toes, fingers, feet, hands or limbs in lukewarm water (about 40°C) NEVER HOT. Do not use direct heat, hot water bottles, heat lamps, heating pads etc. on the frostbitten area. If possible, keep frostbitten fingers and toes separated with strips of gauze or clean cloth. Seek medical assistance immediately if color and feeling do not return to Frostbitten areas within 20 minutes.
Ingestion : Same as Inhalation.

4. Fire-Fighting Measures

Extinguishing Agents : None necessary; carbon dioxide is non-flammable and is itself used as an extinguishing agent.
Hazards / Preventive Measures : Wear self-contained breathing apparatus in areas where large amounts of carbon dioxide are involved.
Environmental Precautions : Carbon dioxide is heavier than air and could accumulate in low-lying areas. Care should be taken when entering a potentially oxygen deficient environment. If possible, ventilate the affected area.

5. Accidental Release Measures

Personal Precautions : Use protective clothing. Wear cold-insulating gloves/face shield/eye protection. Chemical asphyxiate. Exposure to low concentrations for extended periods may result in dizziness or unconsciousness, and may lead to death. Wear self-contained breathing apparatus when entering area unless atmosphere is proven to be safe. NEVER HANDLE SOLID CARBON DIOXIDE WITH YOUR BARE HANDS. USE

Material Safety Data Sheet

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Clean up procedures : GLOVES OR DRY ICE TONGS OR A DRY SHOVEL OR SCOOP.
: Solid carbon dioxide will evaporate at room temperature. If spillage occurs indoors, provide adequate ventilation to minimize the danger of asphyxiation. No other special procedures are necessary.

6. Handling And Storage

Handling : Avoid skin contact, Low temperatures can embrittle plastics, rubbers and some steels.
Storage : Protect against direct sunlight and heat.

7. Exposure Controls / Personal Protection

Engineering Measures : Provide adequate ventilation in areas where carbon dioxide is handled.
Control Parameters / : ACGIH TLV TWA, DFG MAK: 5000 ppm (=0.5%)
Monitoring Procedures
Personal Protection Equipment : Solid carbon dioxide is cold, wear protective clothing and footwear. Eye / face protection and heavy gloves to avoid skin contact. Leakage of Solid to an enclosed space with poor ventilation may dilute the oxygen concentration of the air sufficiently to cause asphyxiation; wear self-contained breathing apparatus.

8. Physical And Chemical Properties

Appearance	White Opaque Solid
Form	Solid
Odor	Odorless
Molar Mass	44.0 g/mol
Triple Point	-56.6°C at 5.2 atm
Melting Point / Range °C	Sublimes at -78° (-56.6° C at 5.2 atm)
Burning Point	None flammable
Critical Temperature °C	31° C at 73.8 atm
Relative Gravity (g/cm ³)	0.933 at 0° and 40 atm (liquid)
Relative density (air = 1)	1.98 (gas)
Water Solubility	3.42 g CO ₂ /Liter H ₂ O (0°, 1 atm)
Thermal Decomposition	Starts at 1200°C
Viscosity	137 10 ⁻⁷ Pa at 20°C

9. Stability And Reactivity

General : Do not discharge into any place where its accumulation could be dangerous. Discharge to atmosphere in large quantities should be avoided. Contact supplier if guidance is required.
Conditions To Avoid : Cannot be used for extinguishing fires where metallic sodium, Potassium or magnesium are involved.

10. Toxicological Information

Health Effects(General) : Solid carbon dioxide is very cold and can cause frost bite if in contact with the skin. Carbon dioxide gas in high concentrations is an asphyxiant, which acts by excluding O₂ from the lungs
Inhalation : Concentrations of 4-5% by volume may cause headache and dizziness. Concentrations of 6-8% may cause unconsciousness and paralysis of the respiratory system.

Material Safety Data Sheet

Product Name: Carbon dioxide - Solid - DRY ICE

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Skin : In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance. Avoid skin contact.

11. Ecological Information

Ecological Effects (General) : When being discharged in large quantities may contribute to the greenhouse effect. Can cause frost damage to vegetation.

Mobility : Solid carbon dioxide will evaporate at room temperature.

12. Disposal Considerations

General : Do not discharge into any place where its accumulation could be dangerous. Discharge to atmosphere in large quantities should be avoided. Contact supplier if guidance is required.

13. Transport Information

Road / Rail : ADR/(GGVS) RID/(GGVE) - Class 2
Prod. No. - 3
UN-No 1845

Sea: IMO IMDG : Class 2.2
Emergency Procedures (IMDG) : EmS No. 2-12
Medical First Aid Guide (IMDG) : MFAG No. 615

Air : ICAO/IATA-DGR - Class 9
UN-No. - 2187

Other Information - Packaging : White paper and polythene cover, Dry ice storage box

14. Regulatory Information

General : Not regulated

15. Other Information

Recommended Users : Used in freezing applications - airline catering, food freezing.