



Safety Data Sheet



Rev. GHS 006

Revised: 2015/1/14

1. Identification of substance

Trade name:	Dry Ice (Solid Carbon Dioxide)
Other Name:	Liquid (Carbonic Acid);Carbon Dioxide
Recommended use and restrictions:	Frozen; carbonated beverages; flight propellant; intermediates (carbonate; synthetic fibers; xylene, etc.); low temperature test; fire extinguishers; inert atmosphere; urban water treatment; drugs; greenhouse; oil cracks and acidification; mining; various sources of pressure; hardening agent of heart-shaped casted mold and casting mold; welding shielding gas; cloud seeding; atomic reactor's gas transfer; anesthetics; special laser; foam; emulsifier to oil recycling.
Manufacturer/Supplier :	FOSECO CORP.
Mfg./Supplier Add. :	No.118-10, Yung Ho Rd.,Ta Ya District, Taichung City, Taiwan
Mfg./Supplier Telephone	04-2568 5609
Emergency Telephone	04-2568 5609
Emergency FAX :	04-2568 5480

2. Hazards identification

Classification system:	Compressed gas - Refrigerated Dry Ice
Hazard description: WHMIS-symbols: GHS label elements:	Exclamation Mark, Health Hazard Warning 
Warning Message:	Contains frozen dry ice under pressure; may cause injure or burn.
Precautions: Prevention:	Wear Protective gloves / Face mask / Safety glasses
Reaction:	Showering the freezing section with warm water, do not rub the frozen section, seeking medical care / advice immediately.
Storage:	Store in a insulation container or box. Keep in a well-ventilated place. 
Scrap:	-
Other Hazard:	The very cold dry ice under pressure, direct contact with dry ice can cause frostbite, may cause rapid suffocation; to avoid inhalation of the dry ice, may need to self-contained breathing apparatus.



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3. Composition/Data on components

Substances:

Chemical characterization:	Carbon Dioxide
Synonyms:	Dry Ice 、 Carbonic Acid Gas 、 Carbonic Anhydride
CAS No.	CAS NO.124-38-9
Composition of Substances % :	100%

4. First aid measures

First aid of different routes of exposure:	
After skin contact:	<ol style="list-style-type: none"> 1. If not cause frostbite, wash with soap immediately, the water temperature should not exceed 40°C (105°F) . 2. If frostbite occurs, do not flush or friction to the affected area and seek medical care immediately. 3. Do not removal of clothing to avoid more damage to frozen tissue.
After eye contact:	<ol style="list-style-type: none"> 1. Rinse opened eye for at least 15 minutes under running water. 2. Consult a doctor.
After inhalation:	<ol style="list-style-type: none"> 1. Supply fresh air 2. Consult doctor in case of complaints.
After swallowing:	Not applicable.
The most important symptoms and harmful effects:	Exposed to low oxygen environment may cause the following symptoms: dizziness, drooling, nausea, vomiting, loss of mobility / consciousness, shaking cramps, sweating, blurred vision. Headache, heart beating, shortness of breath, rapid breathing. Wear self contained breathing apparatus for patient and move to non-contaminated areas. Warm up the patient and maintain the airway. Immediately call up the doctor. If the heart has stopped, make an artificial respiration immediately. Inhalation of high concentrations may cause a large number of circulatory failure and coma to death
Protection of first aid personnel:	Wearing Class C first-aid protective equipment in safe area; please refer to section 8 of personal protective
Immediately medical measures and for the doctor's tip: If inhaled, consider giving oxygen.	



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5. Fire fighting measures

Suitable extinguishing agents:	CO ² , powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
When fire fighting, hazard to be:	-
Special fire fighting	Non-combustible material.
Special protective equipment for firefighters:	Fire fighters must wear full-body chemical protective clothing and air respirators.

6. Accidental release measures

Personal precautions:	Restrict personnel from entering spill area until completely
Environmental precautions:	Disperse the CO ² gas in leaking or spilling area, and making it well-ventilated.
Cleaning methods:	1. Trying to stanch without endangering the safety of the next. 2. If not able to stop the leakage, move the container to a safe place

7. Handling and storage

Handling:	1. Use in well-ventilated place.
Storage:	1. Store in a cool, dry, ventilated area. 2. Adopt the FIFO inventory management, so the dry ice will not volatile




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8. Exposure controls and personal protection

Technical systems: 1.Adequate ventillation. 2.Adequate local ventillation.			
Components with limit values that require monitoring at the workplace:			
TWA	STEL	CEILING	BEIs
5000ppm	5000ppm	-	-
Personal protective equipment:			
Breathing equipment:	Use atmosphere-supplying respirators (e.g. supplied-air: demand, pressure-demand, or continuous-flow or selfcontained breathing apparatus: demand or pressure-demand or combination supplied-air with auxiliary selfcontained air supply atmosphere-supplying respirator) in case of insufficient ventilation		
Protection of hands:	Protective gloves.		
			
Eye protection:	Safety glasses.		
Skin and body protection:	Protective clothing		
General protective and hygienic measures:	Ensure sufficient ventilation.		

9. Physical and chemical properties

Form: Gaseous.	Odor: Odorless
Olfactory: Odorless	Melting point/Melting range: -
PH:-	Boiling point/Boiling range: sublimation
Danger of explosion: not present an explosion hazard.	Flash point: Not applicable.
Decomposition Temperature:/	Test method:-
Nature Temperature:-	Explosion limits:-
Steam pressure: 56.5 atm	Steam density : 1.53 (air=1)
Density : 0.775 (water=1)	Miscibility: Water at 20°C 2000 g/l
Octanol / water partition coefficient (log Kow) : 0.83	Evaporation rate:/



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10. Stability and reactivity

Stability:	No decomposition if used according to specifications.
Special Conditions of hazardous reactions:	1. Metal dust (such as magnesium, zirconium, titanium, aluminum, manganese): When suspended in CO ² , easy to ignite and explode. 2. In water: to form carbonic acid. 3. Lithium, sodium: carbon dioxide in the molten metal will be combusted.
Conditions to be avoided:	Temp. over 52°C °
Substance to be avoided:	Metal powder/dust, water
Dangerous products of decomposition:	No dangerous decomposition products known.

11. Toxicological information

Routes of exposure:	skin, inhalation, or eyes.
Symptom:	Rapid breathing, heart beating, headache, sweating, breathing, dizziness, or frostbite.
Primary irritant effect:	
on the skin:	Frostbite occurred.
inhalation:	1. Caused of headache by low concentrations of 3-5 Mole. 2. Concentrations of 8-15 Mole can cause nausea and vomiting, if not timely supply of fresh air can cause loss of consciousness. 3. This material is very strong of cerebral vasodilator, a large number of inhalation of high concentrations may cause of death.
on the eye:	Frostbite occurred.

12. Ecological information

General notes:	Generally not hazardous for water.
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13. Disposal considerations

Disposition:	Release to the air
Recommendation:	In well-ventilated place

14. Transport information

UN/ID Number:- Propper shipping name: - UN "Model Regulation": -
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15. Regulations

Applicable laws and regulations: In accordance with the labor safety regulations of Republic of China (Taiwan) , details please refer to the Chinese version of this MSDS.

16. Other information

Reference:	1.MSDS Database, CCINFO Disk, 2005-3 2.RTECS Database, TOMES PLUS Disk, Vol.65, 2005 3.HSDB Database,TOMES PLUS Disk, Vol.65, 2005 4.ChemWatch Database,2005-1 5. http://ghs.cla.gov.tw/CHT/masterpage/index_CHT.aspx
Issue Organization:	FOSECO CORP. No.118-10, Yung Ho Rd.,Ta Ya District, Taichung City, Taiwan TEL: 04-2568 5609
Dept. issuing MSDS:	Products Administration Dept.
Revised Date:	2015/1/14

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.