

Safety Data Sheet

Rev.date: 16/01/2013

1) IDENTIFICATION

Product Name: BOTTLE / RECHARGE KIT FOR MOTOAIRBAG - EQUIAIRBAG
Supplier: D.P.I. Safety s.r.l.
Address: s.s. dei Giovi 11/13
Zip/City: 20080 – Badile - Milano
Country: Italy
Phone: +39 02 9053806
Fax: +39 02 9052846
Emergency call: +39 347 5852203 / +39 348 7372731

2) COMPOSITION/INFORMATION ON INGREDIENTS

Single or compound material: Single
Chemical Name: Carbon Dioxide
Content (vol %): 99,5% or more
Chemical formula: CO₂
Hazardous or toxic component: Carbon Dioxide

3) HAZARD IDENTIFICATIONS

Highest- level danger or toxicity: Contains compressed CO₂ gas in a small cylinder (60cc-45grams).

Health: Compressed gas (contents under high pressure)
-Inhalation or high purity of carbon dioxide may cause adverse effects on the human body
-If liquefied carbon dioxide is released into atmosphere, it turns into a low-temperature gas and snow-like dry ice, exposure to which may cause frostbite, and if such cold gas or dry ice enters in eyes, it may cause blindness.
-Note that the gas is asphyxiating even at low toxicity

Environmental impact: Carbon dioxide is said to be a major cause of global warming, and measures to reduce it are being considered domestically and internationally
Physical or chemical danger: Carbon dioxide is filled in containers for supply to customers.
Because it is under high pressure, it is hazardous

4) FIRST AID MEASURES

Inhalation: -Immediately move the victim to fresh air. Loosen clothing and keep warm with a blanket or similar. If the victim is unconscious, loosen clothing, clear respiratory tract, and conduct artificial respiration. Seek immediate care by a physician
-If breathing is weak, give pure oxygen
-If not breathing, give artificial respiration

Skeen contact: -If the person is lightly frostbitten, rub the affected area to warm it
-If frostbite is serious, do not rub, but warm the affected area with tepid water, and wrap in gauze or similar. Seek immediate care by a physician

Eye contact: -If the victim has been exposed to a gas flow, wash the part with clear water.
Seek immediate care by a **physician**

Protective measures before starting: -Ensure sufficient ventilation, and provide respirators and other equipment as needed

first aid

5) FIRE FIGHTING MEASURES

Extinguishing media	-Use powder extinguisher and/or water. Use appropriate extinguishing media for surrounding fire
Specific hazard or toxicity	-For nearby fire, do as follows to prevent internal pressure from rising; this is necessary even though the substance is non-flammable: -Move containers from fire area if it can be done without risk. If it is not possible to move containers, turn water on them from windward. -Keep away from leakage because of the risk of suffocation
Protective measures extinguishing a fire	Using fireproof gloves, respirator, and other protective equipments, fight fires from windward and keep appropriate distance

6) ACCIDENTAL RELEASE MEASURES

Respiration	-Promptly evacuate personnel near leakage, keep others away, and ensure sufficient ventilation -Stay windward and dispose.
Protectors:	-If oxygen concentration is low, do not enter the area without protection
Environmental Affects	-Carbon dioxide is about 1.5 times heavier than air and tends to remain in low places, resulting in high concentration. High concentration may cause suffocation
Discharge:	-Ventilate the room and let in fresh air. -Work in teams of two or more and wear protective equipment such as respirators, protective gloves, and other proper guards.

7) HANDLING AND STORAGE

Handling:	Protection for carbon dioxide users
<u>Suffocation</u>	-Use in a place where ventilation is good
<u>Handling of containers</u>	-Do not use containers roughly. -Do not use near fire. -Before using confirm the name of the gas by checking the mark or the other items on the containers. -Feed gas via a pressure regulator, not directly. -Use only specialized pressure regulators. -Before connecting a pressure regulator, check the screw type. -Before using a gas container, check the pressure regulator, hose, pipes, joints, etc., for leakage. -Do not refill gas. -Do not modify or erase marks or other items on containers. Do not peel off labels on containers. -Do not use gas containers in electric circuits. Be careful not to cause arc strike particularly. -Do not touch dry ice with the bare hands because it has an extremely low temperature. -Avoid compressed gas discharge. Direct high-pressure gas may cause injury to the body.
<u>Storage conditions</u>	-Do not use gas containers for other purposes. -Keep container away from fire and spark source\$. -Do not store containers near electric lines or grounding. -Store containers at a dry place that is well drained and ventilated. -Keep containers away from corrosive atmosphere.

- Keep containers away from direct sunlight at an ambient temperature of 0 to 40°C.
- Do not expose containers to rough handling or falling.
- Control oxygen concentration in storage area at 18 vol% or more.

Safe container material:

- Use only container for compressed gas.

8) EXPOSURE CONTROL/PERSONAL PROTECTION

Acceptable concentration:

- . Japan Society for Occupational Health: (2000 version) 5,000 ppm (TWA)
- ' ACGIH: 5,000 ppm (TLV-TWA) (1999 version)
- 300,000 ppm (TLV-STEL) (1999 version)
- ' NIOSH: 5,000 ppm (TWA)
- 300,000 ppm (STEL)
- ' OSFIA: 5,000 ppm (TWA)

Note: ACGIH :American Conference of Governmental Industrial Hygienists
 NIOSH: National Institute for Occupational Safety and Health
 OSHA : Occupational Safety and Health Administration
 TLV : Threshold Limit Value
 TWA: time Weighted Average Concentration
 STEL: Short Term Exposure Limit
 TLV-TWA: time-weighted average
 Expressed as the time-weighted average concentration (TWA) during regular working time of 8 hours a day, 40 hours a week, and the health of most personnel is not adversely affected even when repeatedly exposed to such conditions.
 TLV-STEL: short-term exposure limit
 Indicates the limit of concentration that does not cause:

- 1) Intolerable stimulus,
- 2) Chronic or irreversible damage to the living body, or
- 3) Increased risk of occurrence of injury, accidents, loss of self-control, or significantly lowered work efficiency caused by anesthetic action even after continuous short-term (15-minute) exposure to that environment provided that the day's average exposure does not exceed the TLV-TWA.

Measures for Facilities:

- Before using containers in enclosed place, install a ventilator or similar.

Protectors for Respiration:

- Air respirator, oxygen inhaler, gas mask

Protectors for Hands:

- Not needed

Protectors for Eyes:

- When handling low-temperature containers ,wear leather gloves.

Protectors for skin and body:

- To protect eyes ,wear goggles.
- Not needed

9) PHYSICAL AND CHEMICAL PROPERTIES

Colour: the cylinder contains carbon dioxide, a colourless gas.
 Odour: Odourless
 Flammability: na
 Solubility: na
 Spontaneous ignition: na

10) STABILITY AND REACTIVITY

Stability: Stable under normal temperature conditions.

Conditions to be avoided: Intensive heating and fire
Hazardous decomposition products: May form harmful fumes under fire conditions

11) TOXICOLOGICAL INFORMATION

	Acute toxicity: Inhalation
	' The gas is low in inhalation toxicity but causes symptoms of oxygen deficiency if concentration is high.
0.04%	Normal air
0.5%	(TLV) Limit of long-term safety
1.5%	Tolerable for an extended time without affecting operability and basic physiology, but calcium and phosphorus metabolism may be affected in some cases.
2%	Respiration becomes deeper.
3%	Operability drops. Physiological changes appear in variations in blood pressure, heartbeat, and other factors.
4%	Respiration becomes much deeper. Higher breathing, slight gasping. Considerable degree of discomfort.
5%	Extreme difficulty in breathing; Serious gasping intolerable for most people; some feeling of nausea. Toxicosis occurs after 30 minute's exposure.
7% 9%	Limit of tolerance, resulting in violent gasping. In about 15 minutes, the subject loses consciousness.
10% to 11%	Disabled regulation; unconsciousness in about 10 minutes.
15% to 20%	Much more serious symptoms are seen, but not lethal within an hour.
25% to 30%	Respiration weakens, blood pressure drops, resulting in coma, lost reflexes, and paralysis. Death occurs in some hours.
Local physical effects on skin, eyes, etc.:	None
Sensitization:	None
Chronic or long-term toxicity	None

12) ECOLOGICAL INFORMATION

Global warming potential (GWP):	1
	* Global Warming Potential (GWP) Index detailing effects on global warming

13) WASTE CONSIDERATIONS

<u>Disposal of carbon dioxide</u>	- Gradually release in open air, because it may cause simple suffocation even though the toxicity is low. - Too quick gas release is dangerous because it may produce dry ice, causing frostbite.
<u>Disposal of containers</u>	- If gas remains in containers ,drive into the container cap with appropriate application to release gas and dispose of containers as incombustible. - Do not dispose of containers without first checking that all gas has been released - For empty containers ,check that containers are open and dispose of as incombustible waste.

14) TRANSPORT INFORMATION

ADR 2012
UN Number UN2037
Proper shipping name (PSN) RECEPTACLES, SMALL CONTAINING GAS
(non flammable gas) without a release device, non refillable
Class 2.2
Hazard label Non flammable gas
Transport category 3 (E)
Packing Instruction P003
Limited quantity 1 L

Label



IATA 2013 53° Edition

UN Number UN2037
Proper shipping name (PSN) RECEPTACLES, SMALL CONTAINING GAS
(non flammable gas) without a release device, non refillable
Class 2.2
Hazard label Non flammable gas
Packing Instruction P.I. 203 (Ltd qty: Y203)
Max quantity Passenger aircraft: 1 kg

Label



Cargo aircraft

15 kg



Label

Limited quantity

1 kg

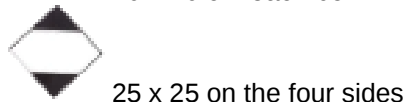
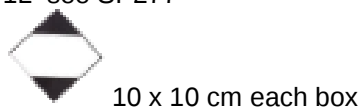


Label

IMDG Code 2010 Edition

UN Number UN2037
Proper shipping name (PSN) RECEPTACLES, SMALL CONTAINING GAS
(non flammable gas) without a release device, non refillable
Class 2.2
Hazard label Non flammable gas
Marine pollutants NO
Packing Instruction P.I. 003
Emergency schedule F-D, S-U
Limited quantity 1L see SP277

Label Lt. Qty



15) REGULATORY INFORMATION

Legal information

(on Japan)

High Pressure Gas

Safety Law:

Production, sales, storage, transportation, consumption, disposal

Industrial Safety

and Health Law:

Production, storage, consumption

Food Sanitation

Law:

Production, sales

Law for Safety of

Containers:

Transportation

Port Regulation

Law:

Transportation

Civil Aeronautics

Law:

Transportation

Road Trucking

Vehicle Law:

Transportation

Road Traffic Law:

Transportation

16) OTHER INFORMATION

Scope:

This Material Safety Data Sheet applies to liquefied carbon dioxide.
Article 2 of the High Pressure Gas Safety Law (Japan) , Carbon dioxide is
specified as a "High Pressure Gas"

Data sheet:

This Material Safety Data Sheet (MSDS) is prepared based on the latest
materials and data. It may be subject to change when new material and/or data
are obtained.

The MSDS states precautions assuming that the product is used under normal
conditions. Uses under special conditions should take these conditions into
account to ensure safety. While the MSDS has been prepared as
comprehensively as possible ,we cannot guarantee its applicability or
effectiveness under all possible conditions or applications.