UN	1013
HAZCHEM	2 RE
CLASS	2.2

Carbon Dioxide, Compressed

T E C H S P E C S

CONTAINER	'G'	'F'	'E'	'DL'	PACK 4	PACK 8
CONTENT kg	31	22	15	9	124	248
CONTENT m^3 (101.325 kPa @ 15° C)	16.5	12.0	8.0	5.0	65	130
AVERAGE WEIGHT kg (full)	86	78	45	32	420	790
AVERAGE WEIGHT kg (empty)	55	56	30	23	295	540
OUTLET CONNECTION A.S. 2473 Type 30	HORIZ.	HORIZ.	HORIZ.	HORIZ.	HORIZ.	HORIZ.

NOTE:The above data is typical of the most common containers.

SPECIFICATION

Carbon Dioxide,compressed,liquefied	> 99.8%

PHYSICAL DATA

Chemical Symbol	CO_2
Boiling Point	-78.3°C
Relative Density (Air = 1)	1.53
Molecular Weight	44.01
Critical Temperature	31°C
Flashpoint	Non-flammable
Density of Gas (@101.3 kPa & 15°C)	1.87 kg/m^3
Solubility in Water (@101.3 kPa & 20°C)	0.759
Specific Volume (@101.3 kPa & 15°C)	0.535 m^3/kg

PROPERTIES

Carbon dioxide is a colourless,odourless,non toxic,non flammable gas.It is heavier than air.

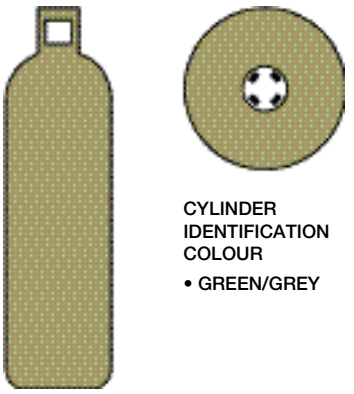
USES

The food industries consume most of the carbon dioxide produced.It is employed for:

- carbonation of soft drinks,lemonade,soda,fruit juices, etc. . .
- recharging of natural mineral waters with carbon dioxide.
- conservation of wine, unfermented grape juice and various fruit juices.
- tapping of beer and prevention of oxidation through contact with the air.
- accelerating the growth of farm produce as an atmospheric additive.

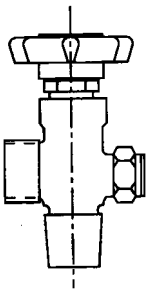
It is employed in the chemical industry in the following applications:

- preparation of sodium carbonate, alkaline bicarbonates, lead carbonate and various organic substances (e.g.salicylic acid).
- neutralization of sedentary alkalis.
- manufacture of foam rubber.
- precipitation of lime after clarification of juices in the sugar industry.
- dehydration of penicillin.
- tanning of hides.
- production of paints and varnishes.



CYLINDER IDENTIFICATION COLOUR

- GREEN/GREY



OUTLET CONNECTION

AS 2473 TYPE 30 MALE R.H. THREAD

CLASS LABEL

AIR LIQUIDE™

UN	1013
HAZCHEM	2 RE
CLASS	2.2

Carbon Dioxide, Compressed

T E C H S P E C S

H A N D L I N G & S A F E T Y

USES Continued

It is employed as a protective atmosphere for arc welding, and in reactor cooling circuits in nuclear power plants.

Pressurized carbon dioxide is employed in fire extinguishers, extinguishers for aircraft and torpedoes. It serves to inflate buoys and pneumatic rescue dinghies. It is also used a a propellant gas in aerosols. Carbon dioxide is employed in the laboratory as a carrier gas for gas analysis, and as a standard gas. Owing to its stimulating effect on the nerve centres, carbon dioxide is employed in medicine in mixtures with oxygen, for reviving victims of asphyxiation (drowning, electrocution, carbon dioxide poisoning,diptheric toxin morphine, scopolamine). It also serves in the treatment of certain skin lesions. Mixed with ethylene oxide, it is employed as a fumigant in the destruction of insects in grain silos, and in leguminous plants, dates and dried figs.

HAZARDS

Inhalation of carbon dioxide in high concentration is dangerous to respiration.At very high concentrations leads to loss of consciousness,and eventually death.

MATERIALS COMPATIBILITY

Carbon dioxide is non-corrosive and so any common metal is acceptable, provided equipment is designed to withstand process pressure.

CYLINDER STORAGE AND HANDLING

Store cylinders upright in a cool, well ventilated area away from sources of heat and combustible materials.

Protect cylinders, particularly the valve, against physical damage whether full or empty.

Do not artificially heat cylinder. Keep away from artificial heat.

Do not allow any part of the cylinder to be exposed to temperatures above 55°C.

Check that cylinders are clearly labelled.

Keep outlet seals in place on full cylinders.

Close valves on empty cylinders.

LEAKING CYLINDERS

Move to a well ventilated area.

Stop leak if possible to do so.

Evacuate area way from direction of movement of gas.

If leak cannot be stopped,move cylinder to a safe area and allow to empty.

PRECAUTIONS IN USE

Never allow oil or grease on cylinder or valve.

Close cylinder valve when not in use.

Always use regulator to connect to system.

Secure cylinders to prevent falling over.

Open cylinder valve slowly.

PERSONAL PROTECTION

Personnel regularly engaged in the use and movement of gas cylinders must be provided with:

- Safety footwear
- Leather or PVC gloves

Full cover overalls & safety glasses are recommended.

FIRE

Carbon dioxide will not support combustion.

It is a fire extinguishing medium.

Remove cylinders not directly affected by fire.

Cool cylinders with water from a protected location.

If unable to keep cylinders cool, evacuate area.

FIRST AID

If victim is conscious:

- Move to uncontaminated area to breathe fresh air.
- Keep warm and quiet.
- Call doctor.

If victim is unconscious:

- Move to uncontaminated area and give assisted respiration.
- When breathing is restored, treatment as above. Continued treatment should be symptomatic and supportive.

ADDITIONAL INFORMATION

The information, recommendations and data contained in this publication are intended to give basic guidance to users of Air Liquide gases for their safe handling and use.

Material Safety Data Sheets (MSDS) for gases and gas mixtures supplied by Air Liquide are also available.

It is essential for the safe use of gases that personnel are properly trained and are fully aware of the possible hazards.

Further information and advice on any matter relating to the safe handling or use of these products may be obtained from the nearest Air Liquide office.

AIR LIQUIDE™

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