

**COMPANY DETAILS**

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**SECTION 1 - PRODUCT IDENTIFICATION**

<b>Product Name</b>	Carbon Dioxide Fire Extinguisher	<b>Product Description</b>	Portable and Mobile Rechargeable Fire Extinguishers CO <sub>2</sub>
<b>Trade Names</b>	Carbon Dioxide (Aligal 2)	<b>Chemical Family</b>	Carbon Anhydride Formula: CO <sub>2</sub>
<b>Models</b>	2Kg Steel Alloy, 2Kg Aluminum, 5kg Steel Alloy, 5Kg Aluminum	<b>Chemical Name</b>	Carbon Dioxide CAS NO: 000124-38-9 EC: 204-696-9

**SECTION 2 - HAZARDS IDENTIFICATION**

**Classification of the substance or mixture**

**Hazard Class and Category Code Regulation EC 1272/2008 (CLP)**

Physical hazard: Gases under pressure – Compressed Gas – Warning – (CLP: Press. Gas) – H280

**Classification 67/548 or EC 1999/45**

- Not Classified as dangerous substance / mixture
- Not included in Annex VI.
- No EC labelling required.

**LABEL ELEMENTS:**

<b>Hazard Pictograms</b>	
<b>Pictogram Code</b>	GHS04
<b>Signal Word</b>	WARNING
<b>Hazard Statements</b>	H280 – Contains gas under pressure: may explode if heated
<b>Precautionary Statements: Storage:</b>	P403 – Store in a well-ventilated place

**OTHER HAZARDS:**

Asphyxiant in high concentrations

Contact with liquid may cause cold burns / frostbite

**SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS**

**Substance / 3.2. Mixture**

Substance Name: Carbon Dioxide

Contents:	100%
CAS No:	124-38-9
EC No:	204-696-9
Registration Nr:	*1
Classification:	Not Classified (DSD/DPD) – Liq. Gas (H280)

Contains no other components or impurities which will influence the classification of the product.

1. Listed in Annex IV/V REACH, exempted from registration.
2. Registration deadline not expired
3. Registration not required: Substance manufactured or imported < 1t/y

Full text of R-phrases see chapter 16. Full text of H-statements see chapter 16.

**SECTION 4 - FIRST AID MEASURES**

**Description of First Aid Measures**

- Inhalation: Remove victim to uncontaminated area wearing self-contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
- Skin Contact: In case of frostbite, spray with water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.
- Eye Contact: Immediately flush eyes thoroughly with water for at least 15 minutes.
- Ingestion: Ingestion is not considered a potential route of exposure.

**Most important symptoms and effects, both acute and delayed**

In high concentrations may cause asphyxiation. Symptoms may include loss of mobility / consciousness. Victim may not be aware of asphyxiation. Low concentrations of CO2 cause increased respiration and headache.

**Indication of any immediate attention and special treatment needed:** None

**SECTION 5 - FIRE - FIGHTING MEASURES**

<b>Extinguishing Media</b>	Suitable Extinguishing Media: All known extinguishants can be used.
<b>Hazards from Combustion Products</b>	Exposure to fire may cause containers to rupture / explode. Hazardous Combustion Products: None
<b>Advice for Fire-Fighters</b>	Specific Methods: Coordinate fire measure to the surrounding fire. Cool endangered containers with water spray jet from a protected position. Do not empty contaminated fire water into drains. If possible, stop flow of product.
<b>Special Protective Equipment for Fire-Fighters</b>	In confined space use self-contained breathing apparatus.

**SECTION 6: ACCIDENTAL RELEASE MEASURES**

<b>Personal Precautions, Protective Equipment and Emergency Procedures</b>	Try to stop release. Evacuate area. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation. Prevent from entering sewers, basements and work pits, or any place where it's accumulation can be dangerous.
<b>Environmental Precautions</b>	Try to stop release
<b>Methods and Materials for Containment and Clean Up</b>	Ventilate area
<b>Reference to other sections</b>	See also sections 8 and 13

**SECTION 7 - HANDLING AND STORAGE**

**(Precautions for Safe Handling)**

<p><b>Safe use of the product</b></p>	<p>Only experienced and properly instructed persons should handle gases under pressure. The product must be handled in accordance with good industrial hygiene and safety procedures. Use only properly specified equipment which is suitable for this product, it's supply pressure and temperature. Contact your gas supplier if in doubt. Do not smoke while handling product. Ensure the complete gas system was (or is regularly) checked for leaks before use. Avoid suck back of water, acid and alkalis.</p>
<p><b>Safe Handling of the gas receptacle</b></p>	<p>Refer to supplier's container handing instructions. Do not allow backfeed into the container. Protect cylinders from physical damage; do not drag, roll, slide or drop. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc) designed to transport cylinders. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. If user experiences any difficulty operating cylinder valve discontinue use and contact supplier. Never attempt to repair or modify container valves or safety relief devices. Damaged valves should be reported immediately to the supplier. Keep container valve outlets clean and free from contaminates particularly oil and water. Replace valve outlet caps or plugs and container caps where supplied as soon as container caps where supplied as soon as container is disconnected from equipment. Close container valve after each use and when empty, even if still connected to equipment.</p> <p>Never attempt to transfer gases from one cylinder / container to another. Never use direct flame or electrical heating devices to raise the pressure of a container. Do not remove or deface labels provided by the supplier for the identification of the cylinder contents.</p>
<p><b>Conditions for Safe Storage, Including any Incompatibilities</b></p>	<p>Keep container below 50 ° C in a well-ventilated place. Containers should be stored in the vertical position and properly secured to prevent toppling. Stored containers should be periodically checked for general condition and leakage. Container valve guards or caps should be in place. Store containers in location free from fire risk and away from sources of heat and ignition. Keep away from combustible materials. Observe all regulations and local requirements regarding storage of containers. Containers should not be stored in conditions likely to encourage corrosion.</p>
<p><b>Specific End Use(s)</b></p>	<p>None</p>

## SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION

### Description of First Aid Measures

#### Control Parameters / Occupational Exposure Limit Values

Carbon Dioxide:	ILV (EU) – 8 H – [mg/m <sup>3</sup> ]:	9000
	ILV (EU) – 8 H – [ppm]:	5000
	TLV® - TWA [ppm]:	5000
	TLV® - STEL [ppm]:	30000
DNE:	Derived no effect level:	None available
PNEC:	Predicted no effect concentration:	None available

#### EXPOSURE CONTROLS:

- Appropriate Engineering Controls: Oxygen detectors should be used when asphyxiating gases may be released. Consider work permit system e.g. for maintenance activities. Systems under pressure should be regularly checked for leakages. Ensure exposure is below occupational exposure limits (where available). Provide adequate general and local exhaust ventilation.
- Individual protection measures e.g. personal protective equipment: A Risk assessment should be conducted and documented in each work area to assess the risks related to the use of the product and to select the PPE that matches the relevant risk. The following recommendations should be considered. Wear leather safety gloves and safety shoes when handling cylinders. Wear safety glasses with side shields or goggles when transfilling or breaking transfer connections.
- Environmental Exposure Controls: None necessary

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State</b>	Gas	<b>Color</b>	Colorless
<b>Odor Threshold</b>	Odor threshold is subjective and inadequate to warn for overexposure.	<b>Odor</b>	No odor warning properties
<b>Molar Mass [g/mol]</b>	44	<b>Melting Point</b>	-56.6
<b>Boiling Point [ ° C]</b>	-78.5 (s)	<b>Critical Temperature [ ° C]</b>	30
<b>Flash Point [ ° C]</b>	Not applicable for gases and gas-mixtures	<b>Evaporation Rate (ether=1)</b>	Not applicable for gases and gas-mixtures
<b>Flammability Range [vol% in air]</b>	Non-Flammable	<b>Vapor Pressure [20 ° C]</b>	57.3 bar
<b>Relative Density, gas (air=1)</b>	1.52	<b>Relative Density, Liquid (water=1)</b>	0.82
<b>Solubility in water [mg/l]</b>	2000 Completely Soluble	<b>Partition Coefficient n-octanol / water</b>	0.83
<b>Auto-Ignition Temperature [ ° C]</b>	Not applicable	<b>Other Information / Data</b>	Gas / vapor heavier than air. May accumulate in confined spaces, particularly at or below ground level.

**SECTION 10 - STABILITY AND REACTIVITY**

<b>Chemical Stability</b>	Stable under normal conditions.	<b>Reactivity</b>	No reactivity hazard other than the effects described in sub-section below
<b>Incompatible Materials</b>	None. For additional information on compatibility refer to ISO11114	<b>Hazardous Decomposition Products</b>	None
<b>Conditions to Avoid</b>	None under recommended storage and handling conditions (see section 7)	<b>Possibility of Hazardous Reactions</b>	None

**SECTION 11 - TOXICOLOGICAL INFORMATION (INFORMATION ON TOXICOLOGICAL EFFECTS)**

<b>Acute Toxicity</b>	In high concentrations cause rapid circulatory insufficiency even at normal levels of oxygen concentration.
<b>Serious Eye Damage/ Irritation</b>	No know effects from this product.
<b>Skin Corrosion / Irritation</b>	No know effects from this product.
<b>Respiratory or Skin Sensitization</b>	No know effects from this product.
<b>Carcinogenicity</b>	No know effects from this product.
<b>Germ Cell Mutagenicity</b>	No know effects from this product.
<b>Reproductive Toxicity</b>	No know effects from this product.
<b>STOT-Single Exposure</b>	No know effects from this product.
<b>STOT-Repeated Exposure</b>	No know effects from this product.
<b>Aspiration hazard</b>	Not applicable for gases and gas-mixtures.

**SECTION 12 - ECOLOGICAL INFORMATION**

<b>Toxicity</b>	No know ecological damage caused by this product
<b>Persistence – Degradability</b>	No data available
<b>Bio accumulative Potential</b>	No data available
<b>Mobility in Soil</b>	No data available
<b>Results of PBT and vPvB assessment</b>	Not Classified as PBT or vPvB.

**Other Adverse Effects**

Effect on ozone layer:

Global Warming Potential [CO2=1]:

Effect on Global Warming:

None

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When discharged in large quantities may contribute to the greenhouse effect.  
Contains Fluorinated greenhouse gases covered by the Kyoto protocol.

**SECTION 13 - DISPOSAL CONSIDERATIONS**

<b>Waste Treatment Methods</b>	Do not discharge into any place where its accumulation could be dangerous. May be vented to atmosphere in large quantities should be avoided.
<b>Additional Information</b>	None

**SECTION 14 - TRANSPORT INFORMATION**

**Road and Rail Transport (ADR/RID)**

<b>UN Number</b>	1013	<b>UN Proper Shipping Name</b>	Carbon Dioxide
<b>H.I. Nr</b>	20	<b>Transport Hazard Class(es)</b>	2
<b>Classification Code</b>	2 A	<b>Packing Instruction</b>	P200
<b>Tunnel Restriction</b>	C/E Tank carriage: Passage forbidden through tunnels of category C, D and E; Other carriage: Passage forbidden through tunnels of category E	<b>Labeling ADR, IMDG, IATA</b>	
<b>Environmental Hazards</b>	None		

**Marine Transport (Imo / Imdg) / Air Transport (ICAO-TI/ IATA-DGR)**

<b>Proper Shipping Name</b>	Carbon Dioxide	<b>Proper Shipping Name (IATA)</b>	Carbon Dioxide
<b>Class</b>	2.2	<b>Class</b>	2.2
<b>Packing Group / Instruction</b>	P200	<b>Passenger and Cargo Aircraft</b>	Allowed
<b>Emergency Schedule (EMS) – Fire</b>	F-C	<b>Packing Instruction – Passenger and Cargo Aircraft</b>	200
<b>Emergency Schedule (EMS) – Spillage</b>	S-V	<b>Packing Instruction – Cargo Aircraft Only</b>	200
<b>Special Precautions for User</b>	<p>Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers:</p> <ul style="list-style-type: none"> <li>• Ensure that containers are firmly secured.</li> <li>• Ensure Cylinder Valve is closed and not leaking.</li> <li>• Ensure valve outlet cap nut or plug (where provided) is correctly fitted.</li> <li>• Ensure valve protection device (where provided) is correctly fitted.</li> <li>• Ensure there is adequate ventilation.</li> </ul>		

## SECTION 15 - REGULATORY INFORMATION

### Safety, Health And Environmental Regulations / Legislation Specific For The Substance Or Mixture

#### EU Legislation

Restrictions on Use: | None  
Seveso Directive 96/82/EC: | Not covered

#### National Legislation:

Ensure all national / local regulations are observed.

#### Chemical Safety Assessment:

A CSA does not need to be carried out for this product.

## SECTION 16 - OTHER INFORMATION

#### Indication of Changes

Revised safety data sheet in accordance with commission regulation (EU) No 453/2010

#### Training Advice

The Hazard of asphyxiation is often overlooked and must be stressed during operator training.

#### List of full text of H-Statements in section 3

H280 – Contains Gas Under pressure; may explode if heated

*Note: This Safety Data Sheet has been established in accordance with the applicable European Union Legislation.*

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