


<b>ATRASORB INDUSTRIA DE PRODUTOS HOSPITALARES LTDA</b> Avenida Piracicaba, 351, Vila Nova São Roque - 18131-230, São Roque - SP, Brazil, Phones: + 55 11 5521-2076 CNPJ: 05.691.570/0004-31 - Registration. State: 653.066.864.115 email: <a href="mailto:atrasorb@atrasorb.com.br">atrasorb@atrasorb.com.br</a>			 Absorvedores de CO <sub>2</sub> <b>Atrasorb INDUSTRIAL</b>	
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## 1 – Product

### Carbon dioxide absorber in pills - **Atrasorb INDUSTRIAL**

#### Indications

CO<sub>2</sub> absorber in pills and for Industrial use, Coal Mines and wherever CO<sub>2</sub> absorption is necessary.

## 2 – Composition / Specification

### 2.1 Chemical Composition

CAS 1305-62-0 – Calcium Hydroxide (hydrated lime) - Chemical formula: Ca(OH)<sub>2</sub>

CAS 1310-73-2 – Sodium Hydroxide - Chemical formula: NaOH

CAS 1310-58-3 – Potassium Hydroxide - Chemical formula: KOH

CAS 2390-59-2 – Ethyl Violet - Chemical formula: C<sub>31</sub> H<sub>42</sub> N<sub>3</sub> Cl

Water - Chemical formula: H<sub>2</sub>O

### 2.2 Physicochemical characteristics

- Grain size: 4.5mm pill (2.36 to 4.75 mm mesh) / 3.5mm and 2.5mm pill (2.36 to 4.00 mm mesh);
- Grain shape: semi-spherical pills;
- Humidity: 12 to 19% (depending on the application);
- Color: white to slightly yellowish or grayish;
- Post-saturation indicator: color change from white to violet.

## 3 – Product Description

Atrasorb INDUSTRIAL is a chemical compound used as a filter for closed breathing circuits in Industrial applications, Coal Mines and wherever CO<sub>2</sub> absorption is required.

Its semi-spherical shape provides better compaction in the reservoir and consequently a larger CO<sub>2</sub> absorption area, in addition to preventing the formation of dust.

When used in filters, whether combined or not, they enable the reuse of expired gases without rebreathing Carbon dioxide (CO<sub>2</sub>) through a chemical filtration process.


They have a limited useful life, after which they must be replaced so that the user does not rebreathe CO<sub>2</sub>. To do this, they have an evolution indicator (see item 4.2).

They have a moisture composition between 12 and 23% H<sub>2</sub>O (depending on the application). Its degree of hardness allows safe transportation, preventing the formation of dust.

The packaging of the products is hermetically sealed, guaranteeing their moisture content, enabling the product to be guaranteed for 5 years.

#### Presentation forms:

The packaging consists of Plastic Containers with a demarcated product identification label and lids differentiated by the color Black and for Barrels, the product identification is affixed to the packaging.

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## 4 – Instructions for Use

The packaging in which they are contained ensures that they maintain compliance with manufacturing and performance requirements, while unopened, for five years from the date of manufacture. However, once the packaging is opened, it is the responsibility of the user/dealer/owner to ensure that the product is used properly as described in this instruction for use and on suitable equipment ***in accordance with the instructions for use provided by the manufacturer. of the respective equipment*** with which Atrasorb INDUSTRIAL will be used. Atrasorb, manufacturer of CO<sub>2</sub> absorbers cannot and will not assume responsibility for incorrect use or storage, or products that have passed their expiration date.

### Handling and storage:

- In the packaging itself, in a covered environment without exposing the packaging to the elements;
- Avoid mechanical shocks or large vibrations;
- Temperature range between -20° C to +50° C;

The product's expiration date appears on the batch identification label on the packaging and must be observed to avoid using it after its useful life.

If the packaging is damaged or accidentally opened before use, the product must be discarded (see MSDS – Chemical Product Safety Data Sheet).

**4.1 - When in systems with a closed** CO<sub>2</sub> absorption circuit that contains an appropriate reservoir for depositing the product (Ex.: Masks/Respiratory safety equipment/Air circulation).

The handling, use, monitoring and control of the product must be carried out by a qualified professional, as well as checking the environmental conditions for the procedures.

**4.2 -** The average time of use is 7 (seven) to 8 (eight) hours per kilogram of product (test carried out with an air flow of 10 liters/minute with 4% CO<sub>2</sub> by volume). The change must be made when the color reaches 3/4 (three quarters) of the container. If there is an indication of the CO<sub>2</sub> (carbon dioxide) content in the air flow, the change takes place when the index reaches the level of 1% CO<sub>2</sub>.

**4.3 -** Control can be done by recording the time of use or by the maximum index of 1% of CO<sub>2</sub> in the air flow if measurement is available.

**4.4 -** Once the maximum filtration limit has been reached, the product must be removed from the reservoir and discarded (see FISPQ – Chemical Product Safety Information Sheet).

### ATTENTION

The material to be discarded after use must be properly identified and segregated, to avoid misuse.

**4.5 -** After opening the packaging, it is recommended that it be used within a maximum of 30 days and that the container remains protected from heat and light (preferably stored in the box itself). After this period, it must be discarded (see MSDS – Chemical Product Safety Information Sheet).

**4.6 -** After filling the reservoir (appropriate container) until its effective use, we inform you of the following:

- a) the normal procedure is to fill the reservoir and use it immediately.
- b) when its immediate use does not occur, its duration (CO<sub>2</sub> absorption capacity) will depend on factors such as:
  - room temperature;
  - incidence of luminosity and solar rays;
  - equipment sealing;
  - loss of moisture in the product, which significantly interferes with its absorption capacity;
  - quality of inhaled air.

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**ATTENTION:**

Each environment or mode of operation interferes differently with the product (e.g.: Leaks in the circuit, problems with the equipment where the product is being used, etc.), therefore Atrasorb INDUSTRIAL must be replaced in the breathing system at least once every seven days or when the CO<sub>2</sub> concentration in the inspiration gas reaches 1% (7.6 mmHg).

c) As already specified, the absorber element has a useful life (CO<sub>2</sub> absorption capacity). After this, it stops absorbing CO<sub>2</sub> and must then be replaced with a new one.

**d) Replacement of the CO<sub>2</sub> Absorber Element**

The CO<sub>2</sub> absorbing element is a consumable, granulated material that is placed inside the reservoir to absorb carbon dioxide from exhaled gases, through a chemical filtration process.

The CO<sub>2</sub> Absorber Element has a limited useful life, after which it must be replaced. The determination of the change moment must be done mainly by visualizing its color (when approximately 3/4 (three quarters) of the product has changed color), when the CO<sub>2</sub> concentration in the inspiration gas reaches 1% or as per instructions from the manufacturer of the equipment where Atrasorb INDUSTRIAL is being used.

**ATTENTION!**







- 1- The useful life of the Absorber is measured in liters of CO<sub>2</sub> absorbed. Never use absorber packaging to store used Atrasorb INDUSTRIAL, nor mix new absorber with used absorber.
- 2- CO<sub>2</sub> Absorber Element contains calcium hydroxide (lime) and may cause irritation to the eyes, skin and respiratory system. When replacing the CO<sub>2</sub> Absorber Element, be careful not to spill it.












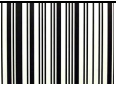
- a) Empty the Canister (reservoir) with used CO<sub>2</sub> Absorber Element, in an appropriate location;
- b) Fill the Canister (reservoir) only with a new CO<sub>2</sub> Absorber Element;
- c) Make sure that when closing the filled Canister, there is no dust or CO<sub>2</sub> Absorber Element particles preventing the system from sealing.

**Personal protection measures**

- Skin/eye protection: Well-fitting safety glasses
- Hand protection: Glove substance: Nitrile rubber - Glove thickness: 0.11 mm
- Respiratory protection - Necessary in case of dust formation: Recommended Filter Type: Filter P FF2

**5 – Symbol table**

	Manufacturer
	Manufacturing date
	Expiration date
	Non-sterile
	Batch
	Do not reuse

	Fragile, handle with care
	See instructions for use
	Corrosive. May cause burns severe skin and eye damage
	Careful
	Causes skin sensitization and skin and eye irritation
	Irritating to the respiratory tract. Risk of serious eye damage
	Correct stacking direction
	Maximum stacking
	Storage Temperature Range
	Protect against moisture
	Protect against heat
	bar code

## 6 – Manufacturer data



Atrasorb Industria de Produtos Hospitalares Ltda


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## 7 - Other information

For more information about the product (risks, protective and first aid measures, handling, storage, etc.) can also be found in the product's FISPQ (Chemical Product Safety Information Sheet) and at [www.atrasorb.com.br](http://www.atrasorb.com.br).