

# ATRASORB DEFENSE 230

## 1. Identification of the product and the company

### 1.1. Product Identifier

Name of the Product: **Atrasorb DEFENSE 230 without indicator (no change color), with 3 types:**

**- granules approximately 2.5 mm**

Codes: 9141, 9142, 9142, 9143, 9144, 9146, 9147, 9208, 9209, 9220

**- granules approximately 3.5 mm**

Codes: 9148, 9149, 9150, 9151, 9152, 9153, 9154, 9210, 9211, 9221

**- granules approximately 4.5 mm**

Codes: 9020, 9034, 9036, 9045, 9046, 9047, 9048, 9049, 9186, 9222

Number of register REACH: this product is a preparation. Number of register REACH see chapter 3.

**1.2 Other means of identification:** data not available

### 1.3. Identified uses of the substance/mixture and non recommended uses

Identified uses: CO<sub>2</sub> (carbon dioxide) absorbent in pills for use in submarines and where the CO<sub>2</sub> absorption is needed.

For additional information about its uses, please go to "Instructions for use"

### 1.4. Details of the supplier of the Material Safety Data Sheet - MSDS

Company: ATRASORB Indústria de Produtos Hospitalares Ltda.

Head Office: Rua Pascoal Pais, 288 – Vila Cordeiro,  
CEP 04581-060, São Paulo – SP - Brasil  
Fones: + 55 11 5521-2076

Branch: Av. Piracicaba, 351, Vila Nova São Roque,  
ZIP CODE 18131-230, São Roque - SP – Brasil  
Fones: + 55 11 5521-2076

### 1.5. Emergency Telephone Number

São Paulo-SP: Phones: + + 55 11 5521-2076  
Abiquim 24 hours: +55 11 0800-118270

## 2. Hazards identification

### 2.1. Classification GHS

Skin irritation	(Category 2)
Severe eye damage	(Category 1)
Systemic toxicity of specific target organ – single exposure	(Category 3), Respiratory system
Acute Aquatic Toxicity	(Category 3)

### 2.2 Label elements

Pictograms



Signal word: Danger

#### Hazard Statements

H315 It can cause skin irritation  
H318 It can cause severe eye damage.  
H335 It can cause respiratory tract irritation.  
H402 It can cause harmful to aquatic life

#### Precautionary Statement

##### Prevention

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.  
P264 Wash skin thoroughly after handling.  
P271 Use only outdoors or in a well-ventilated area.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/protective clothing/eye protection/face protection.

P304 + P340 + 312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

P305 + P351 + P338 + 310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

P332 + P313 If skin irritation occurs: Get medical advice/attention..

##### Storage

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

##### Disposal

P501 Dispose of contents/container to approved waste disposal facility.

#### 2.3. Other hazards

None

### 3. Composition/Information on ingredients

#### 3.1 Substance: not applicable

#### 3.2 Mixture

Chemical nature: Mix of organic and inorganic components

Component	Classification	Concentration
<b>Calcium Hydroxide</b> CAS nr 1305-62-0 CE nr 215-173-3	- Severe eye damage, Category 1 - Skin irritation, Category 2 - Systemic toxicity of specific target organ – single exposure, Category 3 - Acute aquatic toxicity, Category 3	≥ 68.0 % - ≤ 75.0 %
<b>Sodium Hydroxide</b> CAS nr 1310-70-3 CE nr 215-185-5	- Metal corrosive, Category 1 - Skin irritation, Category 1A - Severe eye damage, Category 1 - Acute aquatic toxicity, Category 3	≥ 1,5 % - ≤ 2,0 %
<b>Potassium Hydroxide</b> CAS nr 1310-58-3 CE nr 215-181-3	- Metal corrosive, Category 1 - Skin irritation, Category 1A - Severe eye damage, Category 1 - Acute aquatic toxicity, Category 3	≥ 1,0 % - ≤ 1,5 %

For the full text about the hazard sentences mentioned in this section, see section 16.

### 5. Fire-fighting measures

#### 5.1. Extinguishing media

Suitable extinguishing media: Use an extinguishing agent suitable to the local conditions and to the surroundings.

Not suitable extinguishing media:

No limitation of extinguishing media is given to this substance/mixture.

## 5.2. Special exposure hazards

Non-combustible.

Possible formation of hazardous fumes in case of fire in nearby areas.

## 5.3. Precautions for fire-fighters

Special equipment to protect any involved people in the fire fighting.

Do not stay in the danger zone without self contained breathing apparatus. To avoid skin contact, keep a safe distance and wear protective gear.

Additional information

Avoid surface and ground water contamination with the water used in the fire fighting.

## 6. Accidental release measures

### 6.1. Personal precautions, protection equipment and emergency procedures

Recommendation to personnel not involved with emergencies: Avoid contact with the substance. Avoid dust inhalation. Provide adequate ventilation. Evacuate the area, observe the emergency procedures, consult a specialist.

Recommendations to emergency personnel: Protective equipment, see section 8

### 6.2 Environmental precautions

Do not disperse residues in the sewer.

### 6.3 Methods and materials for containing and cleaning up

Cover drains. Collect, patch and pump spills.

Observe the possible material restrictions (see sections 7 and 10).

Absorb the product in its dry state. Dispose the residues. Clean afterwards. Avoid dust formation.

### 6.4 Reference to other sections

For treatment of waste, see section 13.

## 7. Handling and storage

-Avoid mechanical shocks or big vibrations;

-Range of temperature between  $-20^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$ ;

-Relative humidity between 10 and 90% (no condensation);

Use the original package to load and unload containers. Follow instructions on item 8.

Store in the original package, in a covered place without weather exposure.

After opening, it is recommended to be used within a maximum of 30 days and that the recipient remains protected from heat and light (preferably in its own box). After this period, the product must be discarded as in item 13.

## 8. Exposure control and personal protection

### 8.1. Control parameters

Does not contain substances with occupational exposure limits.

### 8.2. Exposure limits

#### Planning measures

Technical measures and proper work operations must have priority over the use of personal protection equipment. See section 7.

#### Personal protection measures

Personal protective equipment for the body should be selected based on the concentration and the amount of toxic substances according to the specific conditions at the workplace. Resistance of protective equipment to chemical agents should be cleared up with suppliers.

Skin/eye protection  
Fitted safety glasses

Hand protection  
Immersion protection:

Glove material: Nitrile rubber  
Glove thickness: 0.11 mm  
Break through time: > 480 min

Splash protection:

Glove material: Nitrile rubber  
Glove thickness: 0.11 mm  
Break through time: > 480 min

Other protection equipment  
Protection suit

Respiratory protection

Necessary in case of dust formation.

Type of Filter recommended: Filter P2

The entrepreneur must make sure that the maintenance, cleaning and test of respiratory protection equipment be executed according to the producer's instructions. These measures should be properly documented.

Environmental risk control

Do not dispose residues in the sewer.

## 9. Physical and chemical properties

### 9.1. Information on basic physical-chemical properties

Physical state	solid
Color	white to slightly yellowish or grayish
Odor	odorless
Odor threshold	non applicable
PH in 50 g/l (20 °C):	alkaline, (filtered)
Melting point	No data available.
Boiling point	No data available.
Flash point	No data available.
Evaporation rate	No data available.
Flammability (solid, gas)	No data available.
Lower explosive limit	No data available.
Upper explosive limit	No data available.
Vapor pressure	No data available.
Vapor relative density	No data available.
Relative density	No data available.
Water solubility (20 °C)	insoluble
Partition coefficient (n- octanol/water)	No data available.
Auto ignition temperature	No data available.
Decomposition temperature	No data available.
Viscosity, dynamic	No data available.
Explosion risks	Not classified as explosive.
Oxidizing properties	no

### 9.2. Other information

Bulk density	≥ 900 kg/m <sup>3</sup>
Particle size	2.00 – 4.75 mm

## 10. Stability and Reactivity

### 10.1. Reactivity

See section 10.3.

**10.2. Chemical Stability**

Humidity sensitive

**10.3. Possibility of hazardous reactions**Possible violent reactions with acids, hydrogen sulfide, light metals, phosphorus, organic nitro-compounds  
Risk of explosion in the presence of anhydrides**10.4. Conditions to be avoided**

Humidity

**10.5. Incompatible materials**

Light metals

**10.6. Hazardous decomposition products**

There are no indications

**11. Toxicological information****11.1. Information on toxicological effects**

Mixture

Acute oral toxicity

Symptoms:

Irritation of: Gastrointestinal tract

Acute respiratory toxicity

Symptoms:

- mucous irritation, cough, superficial breathing, possible consequences: lesion in the respiratory tracts

Acute skin toxicity

No data available.

Skin irritation

Rabbit

Result: No skin irritation

Guidelines for test 404 of OECD

(test in mixture)

Eye Irritation

Rabbit

Result: Causes severe eye lesions.

Guidelines for test 405 of OECD.

(test in mixture)

Can cause opacification of the cornea.

The mixture causes severe eye damage.

Sensitivity

No data available.

Germ cell mutagenicity

No data available.

Carcinogenicity

No data available.

Reproductive and lactation toxicity

No data available.

Teratogenicity

No data available.

Specific target organ toxicity – single exposure  
Can cause irritation in the respiratory tracts.

Specific target organ toxicity – repeated exposure  
No data available.

Aspiration risk  
No data available.

### 11.2. Additional information

Other hazardous properties cannot be excluded.  
Handle according to good hygiene and safety industrial practices.

#### Components

##### Calcium hydroxide

Acute oral toxicity: DL50 rat: 7340 mg/kg (IUCLID)

##### Skin irritation

Rabbit

Result: No irritation.

Guidelines for test 404 of OECD in case of sweat/corrosive humidity.

##### Eye irritation

Rabbit

Result: Severe irritation (RTECS)

##### Sodium hydroxide

##### Skin irritation

Rabbit

Result: Causes burns (RTECS)

##### Eye irritation

Rabbit

Result: Causes burns (RTECS)

##### Germ cells mutagenicity

In vitro genotoxicity

Mutagenicity (test in mammalian cells): micronucleus

Result: negative (Literature)

##### Ames test

Result: negative (IUCLID)

##### Potassium hydroxide

##### Skin irritation

Rabbit

Result: Causes burns (RTECS)

##### Eye irritation

Rabbit

Result: Causes burns (RTECS)

##### Germ cells mutagenicity

Ames test

Escherichia coli

Result: negative (IUCLID)

## 12. Ecological information

Mixture

**12.1. Toxicity**

No data available.

**12.2. Persistence and degradability**

No data available.

**12.3. Bioaccumulative potential**

No data available.

**12.4. Mobility in soil**

No data available.

**12.5. Results of PBT and vPvB assessment**

PBT/vPvB\* assessment not performed because chemical safety assessment is not required/was not performed.

\*PBT – Persistent – Bioaccumulative – Toxic  
vPvB – Very persistent and very bioaccumulative

**12.6. Other adverse effects**

Additional ecological data

Biological effects: detrimental effect due to pH change. Notwithstanding dilution, it still forms caustic mixtures with water.

Additional data about ecology

Disposal in the environment must be avoided.

**Components****Calcium hydroxide**

Toxicity to fish: CL50 *Gambusia affinis* (mosquitofish): 160 mg/l; 96 h (IUCLID)

Biodegradability: Methods to determine biological degradability are not applicable to inorganic substances.

Not applicable to inorganic substances: The substance does not meet the criteria to PBT or vPvB according to regulation (CE) Number 1907/2006, Annex XIII.

**Sodium hydroxide**

Toxicity to fish: CL50 *Gambusia affinis* (mosquitofish): 125 mg/l; 96 h

Toxicity in daphnias and other aquatic invertebrates: CE50 *Daphnia magna*: 76 mg/l; 24 h

Toxicity to bacteria: CE50 *Photobacterium phosphoreum*: 22 mg/l; 15 min

Biodegradability: Methods to determine biological degradability are not applicable to inorganic substances.

**Potassium hydroxide**

Toxicity to fish: CL50 *Gambusia affinis* (mosquitofish): 80 mg/l; 96 h

Toxicity in daphnias and other aquatic invertebrates: CE50 *Daphnia magna*: 76 mg/l; 24 h

Toxicity to bacteria: CE50 *Photobacterium phosphoreum*: 22 mg/l; 15 min

Biodegradability: Methods to determine biological degradability are not applicable to inorganic substances.

**13. Treatment and disposal considerations**

**Waste treatment methods:** Waste must be disposed in solid form in accordance with federal, state and local disposal regulations. Keep chemical substances in its original recipients. Handling of recipients must be done the same way as the product.

**Residue category:**

EWL (European list of residues) 16 03 3\* / 18 01 06\*

**Disposal legislation:**

-Law 12.305 / 2010 Solid Residues National Politic;  
-RDC ANVISA Number 306 / 2004 Technical Regulation to health service residues management;

-Resolution CONAMA Number 358/2005 Treatment and final destination of health service residues;  
-The Hazardous Waste (England & Wales) Regulations 2005;  
- Residue code number, applicable to Europe – residue code number, applicable to Europe

**Storage:**

-Avoid mechanical shocks or big vibrations;  
-Range of temperature between -20°C to +50°C;  
-Relative humidity between 10 and 90% (no condensation);

**Storage class:**

LGK 10-13 (VCI – concept)

**14. Transport information**

## 14.1 UN Number

ADR / RID, DOT (US), IMDG, IATA, ANTT: Special Provision 62 in Transport Regulations (IMDG / RID / ADR / ADN code) specifies that soda lime is not considered to be a dangerous goods for transport with sodium hydroxide concentrations less than 4% as well as special provision A16 to the IATA Regulation.

## 14.2 UN proper shipping name

ADR / RID: ATRASORB DEFENSE 230 (Soda lime)  
DOT (US): ATRASORB DEFENSE 230 Soda lime (Carbon dioxide absorber)  
IMDG: ATRASORB DEFENSE 230 Soda lime (Carbon dioxide absorber)  
IATA: ATRASORB DEFENSE 230 Soda lime (Carbon dioxide absorber)  
ANTT: ATRASORB DEFENSE 230 (Soda lime)

## 14.3 Transport hazard class (es)

ADR / RID, DOT (US), IMDG, IATA, ANTT: exempt by the special provisions 62 and A16

## 14.4 Packing Group

ADR / RID, DOT (US), IMDG, IATA, ANTT: exempt by the special provisions 62 and A16

## 14.5 Environmental hazards

ADR / RID: no DOT (US): no IMDG marine pollutant: no IATA: no

## 14.6 Special precautions for user

Data not available

**15. Regulatory information**

R Sentence(s)	41	Risk of severe eye lesions.
S - Sentence(s)	S 2	Keep children out of reach.
	S 26	In case of contact with eyes, rinse immediately and with plenty of water and see a specialist.
	S 37/39	Wear gloves and eye/face protective equipment.

**15.1 Regulations**

Additional classification according to GefStoffV Annex II No (only if different of EC classification):

Occupation restriction: n/a  
State Law about hazardous incidents: n/a  
Water pollution class: 1 (autoclassification)

Information according to 1999/13/EC about volatile limitations of organic compound emissions (guideline VOC):

Other regulations, restrictions and prohibitions:

(like industrial medicine principles and health and safety regulations).

Instruction sheet BG-Chemie (Chemical Professional Association):

Other state regulations may be applicable. See state individual requirements.

**16. Other information**



**Full text of H Declarations mentioned in sections 2 and 3.**

H290: May be metal corrosive.  
H314: Cause severe skin burn and eye damage.  
H315: Cause skin irritation.  
H318: Cause severe eye lesions.  
H335: May cause irritation of respiratory tracts.

**Text of R-sentences mentioned in titles 2 and 3**

R35: Cause severe burns.  
R37: Irritating to respiratory tracts.  
R37/38: Irritating to skin and respiratory tracts.  
R41: Risk of severe eye lesions.

**Training recommendations**

Provide information, instructions and proper training to operators.

Caption of abbreviations and acronyms

Abbreviations and acronyms used may be consulted in <http://www.wikipedia.org>.

The indications are based in the present date of our knowledge and are applicable to the characterization of the product with regard to appropriate safety measures. They do not represent any guarantee of the properties of the described product.

