

**Safety Data Sheet****Solid Core Scrubber<sup>®</sup> with Orbsorb<sup>®</sup> Technology****Solid Core Reduced Mass Scrubber with Orbsorb<sup>®</sup> Technology****SDS Reference: A47D412**

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[www.biopak240r.com](http://www.biopak240r.com)**Revision: C****1. Product Identification****Trade Name:** Solid Core Scrubber<sup>®</sup> with Orbsorb<sup>®</sup> Technology  
Solid Core Scrubber<sup>®</sup> Reduced Mass with Orbsorb<sup>®</sup> Technology**Description:** Carbon Dioxide absorbent for use in breathing respirator. Solid white granules formed from a combination of Calcium Hydroxide, Sodium Hydroxide and Zeolite with a trace of Ethyl Violet indicator. Supplied factory packed into a polypropylene container that provides a barrier to direct contact by the customer with the active ingredients.**Synonyms:** None**CAS No:** Not applicable to mixtures.**Molecular Weight:** Not applicable to mixtures.**Chemical Formula:** Not applicable to mixtures**Product Codes:** B6-02-5003-05-0 (Solid Core Scrubber<sup>®</sup> with Orbsorb<sup>®</sup> Technology)  
B6-02-5003-69-0 (Solid Core Scrubber<sup>®</sup> Reduced Mass with Orbsorb<sup>®</sup> Technology)**For Information Call:** tel: (610) 524-8800, fax: (610) 524-8807**2. Composition/Information on Ingredients**

<b>Ingredient</b>	<b>CAS No</b>	<b>Content (% weight)</b>	<b>Risk Phrase</b>	<b>Hazard Symbol</b>
Calcium Hydroxide	1305-62-0	75 – 80%	R41	Xi
Sodium Hydroxide	1310-73-2	Under 2%	R35	C
Zeolite	1318-02-1	4 – 5%	Avoid dust inhalation	Xi
Ethyl Violet	2390-59-2	Under 0.1%	R22/41	Xn
Water		13.5 – 17.5%		

Solid Core Scrubber<sup>®</sup> with Orbsorb<sup>®</sup> Technology and Solid Core<sup>®</sup> Reduced Mass Scrubber with Orbsorb<sup>®</sup> Technology contain no ozone depleting chemicals and volatile organic chemicals. During manufacture of Solid Core Scrubber with Orbsorb<sup>®</sup> Technology and Solid Core<sup>®</sup> Reduced Mass Scrubber with Orbsorb<sup>®</sup> Technology no ozone depleting chemicals and no volatile organic chemicals are used.

### 3. Hazards Identification

Health Rating: Slight

Flammability Rating: None

Reactivity rating: Slight

Lab Protective Equipment: Dust mask recommended for filling or emptying the polypropylene container, General Purpose Rubber Gloves, Goggles, Wash after skin contact with active ingredients.

#### Nature of Hazard of Finished Mixture,

“Xi” Irritant

#### Risk Phrases for Finished Mixture,

R41 Risk of serious damage to eyes.

R 36/37/38 Irritating to eye, respiratory system and skin.

#### Safety Phrases:

S2 Keep out of reach of children.

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 37/39 Wear suitable gloves and eye/face protection.

S45 In case of accident or if you feel unwell seek medical advice immediately and show MSDS if possible.

#### Dangerous Component determining label and risk phrases

Sodium Hydroxide (under 2% weight)

### 4. First Aid Measures for Contact with Active Ingredients

**Eyes:** Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).

**Skin:** Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Remove contaminated clothing in a manner which limits further exposure. Remove contaminated clothing and shoes. Thoroughly clean clothes and shoes before re-use.

**Ingestion:** Do NOT induce vomiting. If victim is conscious and alert, give copious quantities of water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

**Inhalation:** Get medical aid immediately. Remove from exposure and move to fresh air immediately.

### 5. Fire Fighting Measures

**Fire:** Product is not considered to be a fire hazard. Packaging may be combustible.

**Explosion:** Not considered to be an explosion hazard.

**Extinguishing Media:** Use extinguishing media that is appropriate for the environment. Do not get water inside containers and take care of resulting alkaline water.

**Flash Point:** Not applicable, material is considered to be non-combustible.

**NOTE: CO<sub>2</sub> is not suitable as extinguishing media: Exothermic reaction may occur.**

### 6. Accidental Release Measures

**Health Precautions:** Do not inhale released dust. Use dust mask type 3M 8710E. Use proper personal protective equipment as indicated in Section 8.

**Environmental Considerations:** Do not discharge into sewer system.

**Spills/Leaks:** Vacuum or sweep up material and place into suitable disposal container. Avoid generating dusty conditions. Do not get water inside containers.

## 7. Handling and Storage for Active Ingredients

### Handling:

Wash hands thoroughly after handling.  
Use with adequate ventilation and dust extractor if necessary. Minimize dust generation and accumulation.  
Do not get in eyes, on skin, or on clothing. Do not ingest or inhale.  
Do not allow contact with water. Keep from contact with moist air and steam.

### Storage:

Store in a tightly closed container.  
Store in a cool, dry, well-ventilated area away from incompatible substances.  
Keep away from strong acids.  
Store protected from moisture.  
Store at temperatures ranging from -20°C to +50°C.  
Do not allow to desiccate (dry out).  
Facilities storing or utilizing this material should be equipped with an eyewash facility.

## 8. Exposure Controls

Follow instructions for use when handling the active ingredients of the Solid Core Scrubber® with Orbsorb® Technology or Solid Core® Reduced Mass Scrubber with Orbsorb® Technology.

Exposure limits of components where relevant.

CAS No	Material	Occupational Exposure Limit
1305-62-0	Calcium Hydroxide	5 mg/m <sup>3</sup> 8-hour time weighted average
1310-73-2	Sodium Hydroxide	2 mg/m <sup>3</sup> Short Term Exposure Limit
1318-02-1	Zeolite	3 mg/m <sup>3</sup> 8-hour time weighted average

### Personal Protective Equipment

**Eyes:** Wear chemical safety goggles.

**Skin:** Wear appropriate gloves to prevent skin exposure.

**Clothing:** Wear appropriate protective clothing to prevent skin exposure.

**Respirators:** Not necessary as Solid Core Scrubber with Orbsorb Technology™ is provided encapsulated in factory-packed housing. If dust is generated, use dust mask type 3M 8710E.

## 9. Physical and Chemical Properties of Active Ingredients

**Physical State:** Solid spheres of 3 – 4 mm diameter factory-packed into polypropylene container.

**Appearance:** White

**Odor:** None.

**pH:** Basic in solution.

**Bulk Density:** 830 – 860 g/l.

**Solubility in Water:** Less than 1 g/l at room temperature.

**Decomposition Temperature where Relevant:**

Calcium Hydroxide decomposes to CaO at approximately 500°C.

Sodium Hydroxide decomposes to Na<sub>2</sub>O at very high temperatures.

**Molecular Formula:** Mixture of chemicals-see section 2.

## 10. Stability and Reactivity

### Chemical Stability:

Stable at room temperature. Substance readily absorbs carbon dioxide from air.

### Conditions to Avoid:

Avoid contact with acids – vigorous reactions are possible. Do not use with trichloroethylene and chloroform. Contact with high concentration of Carbon Dioxide will generate high temperatures.

### Materials to Avoid:

Hydrogen gas may be formed when active ingredients are in contact with some metals.

### Hazardous Decomposition Products:

Toxic fumes of sodium oxide, calcium oxide. Low level of Amines may be released from decomposition of Ethyl Violet.

## 11. Toxicological Information

No toxicity data is available for finished mixture. However

Toxicity of major component.

CAS No	Material	Acute Toxicity
1305-62-0	Calcium Hydroxide	LD50 <sup>rat</sup> of 7,300 mg/Kg

Toxicity of minor components.

CAS No	Material	Acute Toxicity
1310-73-2	Sodium Hydroxide	LD50 rabbit 500mg/kg (10% solution)
1318-02-1	Zeolite	LD50 <sup>rat</sup> of 10,000 mg/Kg

## 12. Ecological Information

Solid Core Scrubber<sup>®</sup> with Orbsorb<sup>®</sup> Technology and the Solid Core<sup>®</sup> Reduced Mass Scrubber with Orbsorb<sup>®</sup> Technology is not expected to significantly bio accumulate.

Converts to naturally occurring materials.

Do not discharge into lakes, rivers or sewer systems.

Factory-packed housing is constructed of polypropylene material.

When handled properly, Solid Core Scrubber<sup>®</sup> with Orbsorb<sup>®</sup> Technology and the Solid Core<sup>®</sup> Reduced Mass Scrubber with Orbsorb<sup>®</sup> Technology is not likely to prove detrimental to the environment.

## 13. Disposal Consideration

Unused and used Solid Core Scrubber<sup>®</sup> with Orbsorb<sup>®</sup> Technology and the Solid Core<sup>®</sup> Reduced Mass Scrubber with Orbsorb<sup>®</sup> Technology can be disposed of as commercial solid waste similar to household waste in accordance with local waste disposal regulations.

European Waste Catalog Category: Waste packaging, Absorbents, Wiping cloths, filter materials and protective clothing.

EAK No 150203: Absorbents

## 14. Transport Information

Solid Core Scrubber<sup>®</sup> with Orbsorb<sup>®</sup> Technology and the Solid Core<sup>®</sup> Reduced Mass Scrubber with Orbsorb<sup>®</sup> Technology is not a dangerous product and may be sent by post.

Transport Classification	Irritant
UN Number	None
Hazard Class	None
Packaging Group	III Low Danger

## 15. Regulatory Information

### Identification Symbol and Indication of Danger

Xi Irritant

### Risk Phrases

R41 Risk of serious damage to eyes.

R 36/37/38 Irritating to eye, respiratory system and skin.

### Dangerous Component Determining Label and Risk Phrases

Sodium Hydroxide (under 2% weight)

### Safety Phrases

S2 Keep out of reach of children.

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S45 In case of accident or if you feel unwell seek medical advice immediately and MSDS if possible.

## 16. Other Information

The identified use of this product is as an absorbent for Carbon Dioxide. It is suitable for use within closed-circuit breathing respirators.

This SDS is provided for the active Carbon Dioxide absorbent of the Solid Core Scrubber<sup>®</sup> with Orbsorb<sup>®</sup> Technology and the Solid Core<sup>®</sup> Reduced Mass Scrubber with Orbsorb<sup>®</sup> Technology. The Solid Core Scrubber<sup>®</sup> with Orbsorb<sup>®</sup> Technology and the Solid Core<sup>®</sup> Reduced Mass Scrubber with Orbsorb<sup>®</sup> Technology are provided to the end user as a factory-packed polypropylene container providing a barrier to the end user of direct contact.

The above information represents our current state of experience and is provided in good faith. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person. It is the responsibility of the customer to test whether the product is suitable for the purpose intended by the customer.

Date of issue: 6<sup>th</sup> September 2016

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