

# MATERIAL SAFETY DATA SHEET

## **radiello**<sup>®</sup>: adsorbing cartridge code 132

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## 1. Product and company identification

<b>1.1 Product identification</b>	radiello <sup>®</sup> : adsorbing cartridge code 132
<b>1.1.1 Use</b>	Sampling substrate for environmental assays of nitrous oxide and halogenated anesthetics
<b>1.1.2 Trade name</b>	Adsorbing cartridge code 132
<b>1.2 Company identification</b>	
<b>1.2.1 Name of supplier</b>	Fondazione Salvatore Maugeri
<b>Address</b>	Centro di Ricerche Ambientali/Padova Via Svizzera 16, 35127 Padova E-mail: fsmpd@fsm.it
<b>Telephone number</b>	Tel. 0498 064 511 - Fax 0498 064 555
<b>1.3 Emergency contact number</b>	
National Toxicology Center	Tel. 0382 24444

## 2. Composition. Information on ingredients

The sampling device is a stainless steel net cylinder loaded with a mixture of molecular sieve and activated charcoal (35-50 mesh). Nitrous oxide and halogenated anesthetics permeate the silicon membrane and are trapped, the former by the molecular sieve, the latter by the activated charcoal.

<i>Ingredients</i>	<i>%</i>	<i>Symbol</i>	<i>R phrases</i>
MOLECULAR SIEVE (ALUMINIUM, CALCIUM and SODIUM SILICATES) (CAS 1344-01-0 CE215-685-3)	<50%	not required	not required
ACTIVATED CHARCOAL (CAS 7440-44-0 CE231-153-3)	<10%	not required	not required

## 3. Health hazard identification

The product is not classified as dangerous to either man or the environment according to directive 1999/45 and Law N. 65 of 14/03/03 (Hazardous Products).

## 4. First aid measures

### 4.1 General indications

In the case of doubt or in the presence of symptoms consult a doctor, taking a copy of this material safety data sheet.  
Do not administer any substances by mouth to an unconscious person.

### 4.2 First aid procedures in the case of:

#### 4.2.1 Inhalation

Inhalation of the product is not foreseen in normal conditions of its use. However, should inhalation occur, it is not expected that there would be effects deriving from inhalation of airborne substances that could be released from the product. In the case of respiratory symptoms (cough, dyspnea) move the person to fresh air, place in a semi-seated position, and provide artificial respiration if the person is not breathing.

#### 4.2.2 Contact with the skin

Wash the skin with soap and flush with running water for several minutes. Consult a doctor if there are symptoms of irritation (reddening, pain).

#### 4.2.3 Contact with the eyes

The product is not expected to come in contact with the eyes during normal conditions of its use. However, should this occur, flush the eyes, kept open, with large amounts of running water for at least 15 minutes. Consult a doctor if symptoms of irritation (reddening, pain) develop.

#### 4.2.4 Ingestion

It is not expected that the product can be ingested during normal conditions of use. However, should this occur, do not administer anything to drink. Only rinse the mouth and consult a doctor.

## 5. Fire fighting measures

In the case of a fire in a closed environment (e.g. in a warehouse in which the product is stored) follow the rules below:

### 5.1 General indications

Move all people away and upwind of the fire. Do not enter closed rooms without adequate protection.

### 5.2 Extinguishing media

Water spray, carbon dioxide, foams, chemical powders.

### 5.3 Extinguishing media that must not be used

Not known.

### 5.4 Exposure risks in the case of fire

Irritant or toxic fumes may develop in the case of fire.

**5.5 Fire fighting equipment** Use personal protective devices suitable for fighting the fire.

## **6. Accidental release measures**

**6.1 Personal precautions** It is advisable to protect the skin when handling the product. Avoid contact with the skin and eyes.

**6.2 Environmental precautions** Given the amount of the product and the way it is packaged it is not possible to cause accidental damage to the environment. Do not dispose of the product (or part of it) in the environment.

### **6.3 Cleaning-up methods**

**6.3.1 Decontamination** In the case of spills, minimize dust formation. Sweep up the product completely, put it in a bag and send it for correct disposal. Wash away the last traces with abundant water.

**6.3.2 Elimination** Eliminate the contaminated aqueous solution in conformity with existing regulations.

## **7. Handling and storage**

### **7.1 Handling**

**7.1.1 Technical measures** Specific technical requirements are not required for handling the product.

**7.1.2 Precautionary measures** Avoid contact with the eyes, skin and clothes. Avoid inhaling the dusts. Avoid prolonged and repeated exposures.

### **7.2 Storage**

**7.2.1 Technical measures** Take the necessary measures to avoid accidental spills of the product in the case of breakage of the containers.

**7.2.2 Storage conditions** Store in original containers or other appropriately labeled, suitable containers. Store in a cool, dry environment away from sources of heat. Keep the containers hermetically sealed.

## 8. Exposure control. Personal protection

<b>8.1 General hygiene measures</b>	Respect existing safety regulations and use according to the recommendations of the supplier, as indicated in point 7.1. Ensure good ventilation. Wash hands after handling the product.
<b>8.2 Engineering controls</b>	Safety showers and eye baths. A mechanical drain is essential.
<b>8.3 Personal protection measures</b>	
<b>8.3.1 Respiratory protection</b>	Not necessary in the case of normal use of the product. If protection against dust levels is desired, use a filter mask with a type P1 (EN143) filter.
<b>8.3.2 Eye protection</b>	Wear protective glasses when the adsorbing substrate is subjected to laboratory analysis in order to prevent splashes of solution entering the eyes.
<b>8.3.3 Hand protection</b>	Wear appropriate protective gloves
<b>8.3.4 Skin protection</b>	Wear work clothes or suitable protective clothing.

## 9. Physical and chemical properties

<b>9.1 Physical state</b>	Metal net cylinder containing granular material.
<b>9.2 Color</b>	Gray.
<b>9.3 Odor</b>	Not perceptible.
<b>9.4 pH</b>	4-7
<b>9.5 Boiling point</b>	Not applicable.
<b>9.6 Combustion properties</b>	Not applicable.
<b>9.7 Vapor pressure</b>	Not applicable.
<b>9.8 Relative density</b>	ca.1.5-1.8 g/100mL.
<b>9.9 Solubility in water</b>	Not soluble.
<b>9.10 Solubility in organic solvents</b>	Not applicable.
<b>9.11 Partition coefficient</b>	Not applicable.
<b>9.12 Miscibility</b>	Not applicable.
<b>9.13 Evaporation rate</b>	Not applicable.
<b>9.14 Conductivity</b>	Not applicable.
<b>9.15 Viscosity</b>	Not applicable.

## 10. Stability and reactivity

- |  |   |
|--|---|
| <b>10.1 Conditions to avoid</b>              | Stable product, avoid sources of heat or ignition.              |
| <b>10.2 Materials to avoid</b>               | Strong oxidants.  |
| <b>10.3 Hazardous decomposition products</b> | The product is stable. Hazardous polymerization will not occur. |

## 11. Toxicological information

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|--|--|
| <b>11.1 Signs and symptoms of exposure</b> | Detailed studies have not been conducted on the chemical, physical and toxicological properties of the product.  |
| <b>11.2 Types of exposure</b>              |  |
| <b>11.2.1 Inhalation</b>                   | This is not a normal route of exposure given the structural characteristics of the product. The product can irritate the mucosa and the upper respiratory tract. It can be harmful if inhaled.     |
| <b>11.2.2 Skin contact</b>                 | If it comes in contact with the skin, the product can be irritant.   |
| <b>11.2.3 Eye contact</b>                  | This is not a normal route of exposure given the structural characteristics of the product. If the product comes into contact with the eyes it can cause reddening, burning, pain and lacrimation. |
| <b>11.2.4 Ingestion</b>                    | This is not a normal route of exposure given the structural characteristics of the product. If ingested the product can be harmful.  |

## 12. Ecological information

Not available.

### 13. Disposal considerations

For disposal purposes, the product (or part of it) is considered as special waste. After use, the material must be disposed of in conformity with the disposal of other laboratory products. Contact a Center authorized to dispose of this type of waste. Do not dispose of the product in the environment.

### 14. Transport information

- 14.1 General information** The product is not subject to any international regulations concerning its transport.
- 14.2 Road and rail transport (ADR/RID)** Not dangerous.
- 14.3 Sea transport (IMDG/IMO)** Not dangerous.
- 14.4 Air transport (ICAO/IATA)** Not dangerous.

### 15. Regulatory information

- 15.1 Labeling** Not required.
- 15.2 Hazard symbols** None.
- 15.3 Risk phrases** None.
- 15.4 Safety phrases** S22 “do not inhale dusts”  
S24/25 “avoid contact with the eyes and skin”

### 16. Other information

<i>Ingredients</i>	<i>Symbol</i>	<i>R phrases</i>
MOLECULAR SIEVE (CAS 1344-01-0 CE215-685-3)	not required	not required
ACTIVATED CHARCOAL (CAS 7440-44-0 CE231-153-3)	not required	not required S 22; 24/ 25

S22 “do not inhale dusts”

S24/25 “avoid contact with the eyes and skin”

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Advice to users

The information in this material safety data sheet is based on our current knowledge and on Italian and European Community regulations. The product must not be used for any purposes other than those specified in section 1, in the absence of written instructions on its handling. It is the user's responsibility to take all measures necessary to conform with local and national regulations.

The information in this data sheet complies with Directive CEE 1999/45 (assimilated in Italy by Law No. 65 of 14/03/03) and with Directive CEE 2001/58 (assimilated in Italy by Ministerial Decree 7/9/2002). The set of regulations mentioned is simply intended to help the user comply with his or her obligations during the use of this product