

MATERIAL SAFETY DATA SHEET

radiello[®]: adsorbing cartridge code 145

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1. Product and company identification

1.1 Product identification	radiello [®] : adsorbing cartridge code 145
1.1.1 Use	Sampling substrate for environmental assays of volatile organic compounds
1.1.2 Trade name	Adsorbing cartridge code 145
1.2 Company identification	
1.2.1 Name of supplier	Fondazione Salvatore Maugeri
Address	Centro di Ricerche Ambientali/Padova Via Svizzera 16, 35127 Padova E-mail: fsm pd@fsm.it
Telephone number	Tel. 0498 064 511 - Fax 0498 064 555
1.3 Emergency contact number	
National Toxicology Center	Tel. 0382 24444

2. Composition. Information on ingredients

The sampling device is a 4.8 mm diameter stainless steel net cylinder, with a 3x8 µm mesh, packed with 350 ± 10 mg graphitized charcoal (Carbograph 4) (35-50 mesh). Volatile organic compounds are trapped by adsorption, recovered by thermal desorption and analyzed by capillary gas chromatography, with a flame ionization detector or mass spectrometry.

<i>Ingredients</i>	<i>Symbol</i>	<i>R phrases</i>	<i>%</i>
CARBOGRAPH 4 (CAS 7440-44-0 CE231-153-3)	not required	not required	350 ± 10 mg

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** 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** Flush the skin with running water for several minutes. Consult a doctor if there are symptoms of irritation (reddening, pain).
- 4.2.3 Contact with the eyes** 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** 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, as specified in point 5.5.
- 5.2 Extinguishing media** Powder spray for incandescent materials, carbon dioxide, foams.
- 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. Refer to point 11.2 for symptoms.
- 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 and send it for correct disposal. Wash away the last traces with abundant water and dry.
- 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** Wash the hands thoroughly after use.
- 7.1.2 Precautionary measures** Avoid contact with the eyes, skin and clothes. Avoid prolonged and repeated exposures. Do not smoke.

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.

8. Exposure control. Personal protection

- 8.1 General hygiene measures** 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.
- 8.2 Limits of occupational exposure** Limits of occupational exposure have not been established for the components of the product.

8.3 Personal protection measures

8.3.1 Respiratory protection	In the case of spills, use a filter mask to retain any dust that may be present.
8.3.2 Eye protection	Wear chemical goggles.
8.3.3 Hand protection	Wear appropriate protective gloves
8.3.4 Skin protection	Wear work clothes or suitable protective clothing.

9. Physical and chemical properties

9.1 Physical state	Metal net cylinder containing solid granules.
9.2 Color	Black solid.
9.3 Odor	Not perceptible.
9.4 pH	4-7
9.5 Boiling point	Not applicable.
9.6 Melting point	Not applicable.
9.7 Auto-ignition	Not inflammable.
9.8 Explosive properties	Not applicable.
9.9 Combustion properties	Not applicable.
9.10 Vapor pressure	Not applicable.
9.11 Relative density	ca.1.5-1.8 g/100mL.
9.12 Solubility in water	Not soluble.
9.13 Solubility in organic solvents	Not applicable.
9.14 Partition coefficient	Not applicable.
9.15 Miscibility	Not applicable.
9.16 Evaporation rate	Not applicable.
9.17 Conductivity	Not applicable.
9.18 Viscosity	Not applicable.

10. Stability and reactivity

10.1 Conditions to avoid	Stable product, avoid high temperatures.
10.2 Materials to avoid	Strong oxidants.
10.3 Hazardous decomposition products	The product is stable and there is no information concerning possible decomposition products. If inhaled, the product can

irritate the mucosa and respiratory tract. If ingested, it can be harmful.

11. Toxicological information

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|--------------------------------|--|
| 11.1 Acute toxicity | There are no toxicity data available. |
| 11.2 Effects harmful to health | It is not expected that the product can be dangerous. Contact with the product can cause irritation of the skin and eyes. Inhalation can cause irritation. |

12. Ecological information

- | | |
|------------------------------------|--|
| 12.1 Mobility | Data not available. |
| 12.2 Persistence and degradability | Data not available. |
| 12.3 Bioaccumulation potential | Data not available. |
| 12.4 Aquatic toxicity | Data not available. |
| 12.5 Remarks | Do not dispose of the product (or part of it) in the environment.
The product is insoluble in water so if correct handling procedures are used, no ecological problems can be expected. |

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	According to European directives.
15.2 Hazard symbols	None.
15.3 Risk phrases	None.
15.4 Safety phrases	S22 “do not inhale” S24/25 “avoid contact with the eyes and skin”

16. Other information

<i>Ingredients</i>	<i>R phrases</i>	<i>Symbol</i>
CARBOGRAPH	not required S 22; 24/ 25	not required

S22 “do not inhale”
S24/25 “avoid contact with the eyes and skin”

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