

SAFETY DATA SHEET

1. Identification

Product identifier: AEROSIL® R 202

Other means of identification

Recommended use: Coating agent
Sealant
Reinforcing agent.
Cosmetics

Recommended restrictions: Not determined.

Manufacturer/Importer/Distributor Information

Company Name : Evonik Operations GmbH
Rellinghauser Str. 1-11
45128 Essen
Germany

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Emergency telephone number:

24-Hour Health : +49 7623 919191
Emergency

2. Hazard(s) identification

Classification according to GHS

Environmental Hazards

Chronic hazards to the aquatic environment Category 3

Label Elements

Hazard Symbol: No symbol

Signal Word: No signal word.

Hazard Statement: Harmful to aquatic life with long lasting effects.

Precautionary Statements

Prevention: Avoid release to the environment.

Disposal: Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards: No data available.

3. Composition/information on ingredients

Substances

| Chemical Identity | Common name and synonyms | CAS number | Content in percent (%) [*] |
|---|--------------------------|------------|-------------------------------------|
| Silicones and siloxanes, dimethyl-, reaction products with silica | | 67762-90-7 | |

^{*} All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

Composition information of impurities and stabilizers

| Chemical Identity | Common name and synonyms | CAS number | Content in percent (%) [*] |
|------------------------------|--------------------------|------------|-------------------------------------|
| octamethylcyclotetrasiloxane | No data available. | 556-67-2 | <10% |

^{*} All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

The exact concentration has been withheld as a trade secret.

4. First-aid measures

Description of necessary first-aid measures

| | |
|--|--|
| Inhalation: | In case product dust is released: Possible discomfort: cough, sneezing Move to fresh air. |
| Skin Contact: | Wash off with plenty of water and soap. |
| Eye contact: | Possible discomfort is due to foreign substance effect. Rinse thoroughly with plenty of water keeping eyelid open. In case of persistent discomfort: Consult an ophthalmologist. |
| Ingestion: | Clean mouth with water and drink afterwards plenty of water. After absorbing large amounts of substance / In case of discomfort: Supply with medical care. |
| Personal Protection for First-aid Responders: | No data available. |

Most important symptoms and effects, both acute and delayed

Symptoms: None known.

Hazards: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: No data available.

5. Fire-fighting measures

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Water spray, foam, CO₂, dry powder. Adapt fire-extinguishing measures to surroundings

Unsuitable extinguishing media: Do not use full-force water jet in order to avoid dispersal and spread of the fire.

Special hazards arising from the substance or mixture: May be released in case of fire: carbon monoxide, carbon dioxide, organic products of decomposition.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Water used to extinguish fire should not enter drainage systems, soil or stretches of water. Ensure there are sufficient retaining facilities for water used to extinguish fire. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for fire-fighters: In the event of fire, wear self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid dust formation.

Accidental release measures: No data available.

Methods and material for containment and cleaning up: Sweep up or vacuum up spillage and collect in suitable container for disposal.

Environmental Precautions: Do not allow entrance in sewage water, soil stretches of water, groundwater, drainage systems.

7. Handling and storage

Handling

Technical measures (e.g. Local and general ventilation): Ensure suitable suction/aeration at the work place and with operational machinery. Local ventilation if necessary. see also section 7.

Safe handling advice: If necessary: Local ventilation. Handle in accordance with good industrial hygiene and safety practice. If there is the possibility of skin/eye contact, the indicated hand/eye/body protection should be used. If workplace exposure limits are exceeded and/or larger amounts are released (leakage, spilling, dust) the indicated respiratory protection should be used.

Contact avoidance measures: No data available.

Storage

Safe storage conditions: Take precautionary measures against static discharges. When repairs of the production system are to be made (e.g. welding work), the section to be repaired must be essentially free of product. Protect from heat and exposure to direct sunlight. Keep containers tightly closed in a dry, cool and well-ventilated place.

Safe packaging materials: No data available.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Observe national threshold limit values.

Biological Limit Values

No biological exposure limits noted for the ingredient(s).

Appropriate Engineering Controls

Ensure suitable suction/aeration at the work place and with operational machinery. Local ventilation if necessary. see also section 7.

Individual protection measures, such as personal protective equipment

General information: No data available.

Eye/face protection: Safety glasses with side shields. If dust occurs: basket-shaped glasses.

Skin Protection

Hand Protection: Additional Information: Wear protective gloves made of the following materials: material, rubber, leather. Additional Information: The data about break through time/strength of material is not valid for undissolved solids/dust.

Other: No special protective equipment required.

Respiratory Protection: No special protective equipment required. If dust occurs: Dust mask with P2 particle filter.

Hygiene measures:

When using, do not eat, drink or smoke. Wash face and/or hands before break and end of work. To ensure ideal skin protection: use super fatted soaps and skin cream for skin care. Wash contaminated clothing before reuse.

9. Physical and chemical properties
Information on basic physical and chemical properties
Appearance

| | |
|------------------------|------------------------------|
| Physical state: | solid |
| Form: | Powder |
| Color: | White |
| Odor: | Odorless |
| Odor Threshold: | Not applicable |
| Melting Point: | Not applicable Decomposition |
| Boiling Point: | Not applicable Decomposition |
| Flammability: | No data available. |

Upper/lower limit on flammability or explosive limits

| | |
|-----------------------------------|--|
| Explosive limit - upper: | No data available. |
| Explosive limit - lower: | No data available. |
| Flash Point: | Not applicable (solid) |
| Autoignition Temperature: | No data available. |
| Decomposition Temperature: | > 572 °F/> 300 °C |
| pH: | 4 - 6 (40 g/l, 20 °C) 1: 1 in suspension |

Viscosity

| | |
|-----------------------------|------------------------|
| Dynamic viscosity: | Not applicable (solid) |
| Kinematic viscosity: | Not applicable (solid) |
| Flow Time: | No data available. |

Solubility(ies)

| | |
|---|---|
| Solubility in Water: | > 1 mg/l |
| Solubility (other): | No data available. |
| Partition coefficient (n-octanol/water): | Not applicable |
| Vapor pressure: | Not applicable |
| Relative density: | No data available. |
| Density: | Approximate 2 g/cm ³ (68 °F/20 °C) |
| Bulk density: | No data available. |
| Vapor density (air=1): | Not applicable |

Other information

| | |
|--------------------------------------|---|
| Explosive properties: | Not to be expected in view of the structure |
| Minimum ignition temperature: | Approximate 860 °F/460 °C (VDI 2263) |
| Peroxides: | Not applicable |
| Dust explosion properties: | Not dust explosive |
| Evaporation Rate: | Not applicable |
| Minimum ignition energy: | > 10 kJ (VDI 2263) |

10. Stability and reactivity

| | |
|--|--|
| Reactivity: | No dangerous reaction known under conditions of normal use. |
| Chemical Stability: | Stable under recommended storage conditions. |
| Possibility of hazardous reactions: | No hazardous reactions are known if properly handled and stored. |
| Conditions to avoid: | Hydrophobic properties disappear at temperatures > 300°C |
| Incompatible Materials: | None known. |
| Hazardous Decomposition Products: | No decomposition if stored and applied as directed. Stable under normal conditions. Product will not undergo hazardous polymerization. |

11. Toxicological information

General information: Silicosis or other product specific illnesses of the respiratory tract were not observed in association with the product.

Information on toxicological effects

Information on likely routes of exposure

| | |
|----------------------|---|
| Inhalation: | Information on effects are given below. |
| Skin Contact: | Information on effects are given below. |
| Eye contact: | Information on effects are given below. |
| Ingestion: | Information on effects are given below. |

Acute toxicity (list all possible routes of exposure)

Oral

| | |
|---|---|
| Product: | LD 50 (Rat, Female, Male): > 5.000 mg/kg (OECD 401) (analogy) |
| Components: | |
| Silicones and siloxanes, dimethyl-, reaction products with silica | LD 50 (Rat): > 5.000 mg/kg (analogy) |
| octamethylcyclotetrasiloxane | LD 50 (Rat): > 5.000 mg/kg |

Dermal

| | |
|---|---|
| Product: | LD 50 (Rabbit): > 5.000 mg/kg (analogy) |
| Components: | |
| Silicones and siloxanes, dimethyl-, reaction products with silica | LD 50 (Rabbit): > 5.000 mg/kg (analogy) |

octamethylcyclotetrasiloxane LD 50 (Rat): > 5.000 mg/kg

Inhalation

Product: LC 50 (Rat, Female, Male, 4 h): > 5,01 mg/l Dust and mist, (analogy)

Components:
 Silicones and siloxanes, dimethyl-, reaction products with silica
 octamethylcyclotetrasiloxane LC 50 (Rat, Female, Male, 4 h): > 5,01 mg/l Dust and mist, (analogy) Not applicable, Vapour

LC 50 (Rat, Female, Male, 4 h): 36 mg/l Vapour Dust and mist, No data available.

Repeated dose toxicity

Product: NOAEL (Rat(Male), Oral, 28 day, 7 days a week): >= 1.000 mg/kg No negative effects. (analogy)

Components:
 Silicones and siloxanes, dimethyl-, reaction products with silica
 octamethylcyclotetrasiloxane NOAEL (Rat(Male), Oral, 28 day, 7 days a week): >= 1.000 mg/kg No negative effects. (analogy)

NOAEC (Rat(Female, Male), Inhalation(Vapour) , 5 days/weeks, 6 hours/day): 1,8 mg/l Subchronic toxicity

LOAEC (Rat(Female, Male), Inhalation(Vapour) , 5 days/weeks, 6 hours/day): 8,5 mg/l chronic

NOAEC (Rat(Female, Male), Inhalation(Vapour) , 5 days/weeks, 6 hours/day): 0,36 mg/l Subacute toxicity

Skin Corrosion/Irritation

Product: OECD 404 (Rabbit): Not irritating; (analogy)

Components:
 Silicones and siloxanes, dimethyl-, reaction products with silica
 octamethylcyclotetrasiloxane OECD 404 (Rabbit): Not irritating

OECD 404 (Rabbit): Not irritating

Serious Eye Damage/Eye Irritation

Product: analogous OECD method (Rabbit): Not irritating; (analogy)

Components:
 Silicones and siloxanes, dimethyl-, reaction products with silica
 octamethylcyclotetrasiloxane analogous OECD method (Rabbit): Not irritating

OECD 405 (Rabbit): Not irritating

Respiratory or Skin Sensitization

Not a skin sensitizer. Not a skin sensitizer.

Product: Local Lymph Node Assay (LLNA), OECD 429 (Mouse): Not a skin sensitizer. (analogy)

Maximization Test, OECD 406 (Guinea Pig): Not a skin sensitizer. (analogy)

Components:

Silicones and siloxanes, dimethyl-, reaction products with silica octamethylcyclotetrasiloxane

Local Lymph Node Assay (LLNA), OECD 429 (Mouse): Not a skin sensitizer. (analogy)
 Maximization Test, OECD 406 (Guinea Pig): Not a skin sensitizer. (analogy)
 Magnussona i Kligmana., OECD 406 (Rabbit): Not a skin sensitizer.
 Sensitization test (Human): Not a skin sensitizer.
 Maximization Test, OECD 406 (Guinea Pig): Not a skin sensitizer.

Carcinogenicity

Product:

No evidence that cancer may be caused.

Components:

Silicones and siloxanes, dimethyl-, reaction products with silica octamethylcyclotetrasiloxane

No evidence that cancer may be caused.

No data available.

Germ Cell Mutagenicity

no evidence of mutagenic effects

In vitro

Product:

gene mutation test (OECD 471): negative; (analogy);
 gene mutation test (OECD 490): negative; (analogy);
 Chromosomal aberration (OECD 473): negative; (analogy);

Components:

Silicones and siloxanes, dimethyl-, reaction products with silica octamethylcyclotetrasiloxane

gene mutation test (OECD 471): negative (analogy)
 gene mutation test (OECD 490): negative (analogy)
 Chromosomal aberration (OECD 473): negative (analogy)
 Ames test (OECD 471): negative
 Chromosomal aberration (OECD 473): negative
 gene mutation test (OECD 476): negative

In vivo

Product:

Chromosomal aberration (OECD 475) Oral (Rat, Male): negative; (analogy)

Components:

Silicones and siloxanes, dimethyl-, reaction products with silica octamethylcyclotetrasiloxane

Chromosomal aberration (OECD 475) Oral (Rat, Male): negative (analogy)
 Micronucleus test (OECD 474) Inhalation - vapor (Rat): negative
 Chromosomal aberration (OECD 478) Oral (Rat): negative
 Chromosomal aberration (OECD 475) Inhalation - vapor (Rat, Female, Male): negative

Reproductive toxicity

Product:

no evidence of reproductiontoxic properties

Components:

Silicones and siloxanes, dimethyl-, reaction products with silica octamethylcyclotetrasiloxane

no evidence of reproductiontoxic properties

Suspected of damaging fertility or the unborn child. Suspected of damaging fertility.

Specific Target Organ Toxicity - Single Exposure

Product:

no evidence for hazardous properties

Components:

Silicones and siloxanes, dimethyl-, reaction products with silica

no evidence for hazardous properties

octamethylcyclotetrasiloxane No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: no evidence for hazardous properties

Components:
 Silicones and siloxanes, dimethyl-, reaction products with silica no evidence for hazardous properties
 octamethylcyclotetrasiloxane No data available.

Aspiration Hazard

Product: Not applicable

Components:
 Silicones and siloxanes, dimethyl-, reaction products with silica Not applicable
 octamethylcyclotetrasiloxane Not classified

Information on health hazards

Other hazards

Product: Based on available data, the classification criteria are not met.;

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: LC 50 ((Brachydanio rerio), 96 h): > 10.000 mg/l The reported toxic effects relate to the nominal concentration. (analogy)

Components:

Silicones and siloxanes, dimethyl-, reaction products with silica LC 50 ((Brachydanio rerio), 96 h): > 10.000 mg/l The reported toxic effects relate to the nominal concentration. (analogy)

octamethylcyclotetrasiloxane LC 50 (Oncorhynchus mykiss, 96 h): > 22 µg/l
 NOEC (Oncorhynchus mykiss, 96 h): 22 µg/l

Aquatic Invertebrates

Product: EC 50 (Daphnia magna, 24 h): > 1.000 mg/l The reported toxic effects relate to the nominal concentration. (analogy)

Components:

Silicones and siloxanes, dimethyl-, reaction products with silica EC 50 (Daphnia magna, 24 h): > 1.000 mg/l The reported toxic effects relate to the nominal concentration. (analogy)

octamethylcyclotetrasiloxane NOEC (Daphnia magna, 48 h): 15 µg/l
 EC 50 (Daphnia magna, 48 h): > 15 µg/l

Toxicity to Aquatic Plants

Product: EC 50 (Desmodesmus subspicatus (green algae), 72 h): > 173 mg/l (OECD 201) (analogy)

Components:
 Silicones and siloxanes, dimethyl-, reaction products with silica EC 50 (Desmodesmus subspicatus (green algae), 72 h): > 173 mg/l (OECD 201) (analogy)

octamethylcyclotetrasiloxane EC 50 (Algae (Pseudokirchneriella subcapitata), 96 h): > 22 µg/l (US-EPA-method)

EC 50 (Algae (Pseudokirchneriella subcapitata), 96 h): > 22 µg/l (US-EPA-method)

Toxicity to microorganisms

Product: EC 50 (local activated sludge, 3 h): > 2.500 mg/l (OECD 209) (analogy)

Components:
 Silicones and siloxanes, dimethyl-, reaction products with silica EC 50 (local activated sludge, 3 h): > 2.500 mg/l (OECD 209) (analogy)

octamethylcyclotetrasiloxane No data available.

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Components:
 Silicones and siloxanes, dimethyl-, reaction products with silica No data available.

octamethylcyclotetrasiloxane NOEC (Oncorhynchus mykiss, 93 d): 4,4 µg/l (US-EPA-method)

Aquatic Invertebrates

Product: No data available.

Components:
 Silicones and siloxanes, dimethyl-, reaction products with silica No data available.

octamethylcyclotetrasiloxane NOEC (Daphnia magna, 21 d): 15 µg/l (EPA OTS 797.1330)
 Lowest Observed Effect Concentration (Daphnia magna, 21 d): 15 µg/l (EPA OTS 797.1330)
 EC 50 (Daphnia magna, 21 d): > 15 µg/l (EPA OTS 797.1330)

Toxicity to Aquatic Plants

Product: No data available.

Components:
 Silicones and siloxanes, dimethyl-, reaction products with silica No data available.

octamethylcyclotetrasiloxane NOEC (Algae (Pseudokirchneriella subcapitata), 96 h): < 22 µg/l (US-EPA-method)

Toxicity to microorganisms

Product: EC 50 (local activated sludge, 3 h): > 2.500 mg/l (OECD 209) (analogy)

Components:

Silicones and siloxanes, dimethyl-, reaction products with silica octamethylcyclotetrasiloxane EC 50 (local activated sludge, 3 h): > 2.500 mg/l (OECD 209) (analogy)
 No data available.

Persistence and Degradability

Biodegradation

Product: The methods designed to assess persistence and biodegradability are not applicable to this product, in analogy to inorganic substances.

Components:

Silicones and siloxanes, dimethyl-, reaction products with silica The methods designed to assess persistence and biodegradability are not applicable to this product, in analogy to inorganic substances.

octamethylcyclotetrasiloxane 3,7 % (28 d, OECD 310) The product is not biodegradable., aerobic

BOD/COD Ratio

Product: No data available.

Components:

Silicones and siloxanes, dimethyl-, reaction products with silica No data available.

octamethylcyclotetrasiloxane No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: Not to be expected.

Components:

Silicones and siloxanes, dimethyl-, reaction products with silica Not to be expected.

octamethylcyclotetrasiloxane No data available.

Partition Coefficient n-octanol / water (log Kow)

Product: Log Kow: Not applicable

Components:

Silicones and siloxanes, dimethyl-, reaction products with silica Log Kow: Not applicable

octamethylcyclotetrasiloxane Log Kow: 6,488 25,1 °C (OECD 123)

Mobility in soil:

Product No remarkable mobility in soil is to be expected.

Components:

Silicones and siloxanes, dimethyl-, reaction products with silica No remarkable mobility in soil is to be expected.

octamethylcyclotetrasiloxane No data available.

Product No data available.
Components:
Silicones and siloxanes, No data available.
dimethyl-, reaction products
with silica
octamethylcyclotetrasiloxane No data available.

Other adverse effects:

Other hazards

Product: Harmful to aquatic life with long lasting effects.

13. Disposal considerations

Disposal methods: Review all local, state and federal regulations concerning health and pollution for appropriate disposal procedures.

Contaminated Packaging: Offer rinsed packaging material to local recycling facilities. Other countries: observe the national regulations.

14. Transport information

International Regulations

UNRTDG

Not regulated as a dangerous good

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

15. Regulatory information

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Rotterdam convention

Not applicable

Kyoto protocol
Not applicable

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|--|
| 16. Other information, including date of preparation or last revision |
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Issue Date: 11.02.2019

Version #: 2.3

Further Information: No data available.

Revision Information: Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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