SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

- Trade name: CERETAN® MF 5108
- CAS Number: 9002-84-0

1.2 Relevant identified uses of the substance or mixture and uses advised against

No further relevant information available.

1.3 Details of the supplier of the safety data sheet

- Manufacturer/Supplier: MÜNZING Micro Technologies GmbH
- Dr.-Bergius-Straße 16-24
- 06729 Elsterbave, Germany
- E-Mail: ceretan@munzing.com
- Tel.: +49 3441 829 10-22

1.4 Emergency telephone number: For Chemical Emergencies: CHEMTREC: +1 703 741 5970

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

The substance is not classified, according to the CLP regulation.

2.2 Label elements

- Labelling according to Regulation (EC) No 1272/2008 Void
- Hazard pictograms Void
- Signal word Void
- Hazard statements Void
- Additional information:
  Safety data sheet available on request.

2.3 Other hazards

- Thermal decomposition may lead to release of toxic and corrosive gases.
- Results of PBT and vPvB assessment Not applicable.
- PBT: None.
- vPvB: None.

SECTION 3: Composition/information on ingredients

- CAS No. Description
  9002-84-0 Polytetrafluoroethylene
- Identification number(s) 9002-84-0
- Description: Polytetrafluoroethylene, micronized
- Dangerous components: Void

SECTION 4: First aid measures

4.1 Description of first aid measures

- General information: Immediately remove any clothing soiled by the product.
- After inhalation: Supply fresh air and to be sure call for a doctor.
- After skin contact: Immediately wash with water and soap and rinse thoroughly.
- After eye contact: Rinse opened eye for several minutes under running water. Then consult a doctor.

(Contd. on page 2)
Further information about storage conditions:

- After swallowing: Do not induce vomiting; call for medical help immediately.
- 4.2 Most important symptoms and effects, both acute and delayed No further relevant information available.
- 4.3 Indication of any immediate medical attention and special treatment needed
  No further relevant information available.

SECTION 5: Firefighting measures

- 5.1 Extinguishing media
- Suitable extinguishing agents: CO2, powder or water spray. Fight larger fire with alcohol resistant foam.
- 5.2 Special hazards arising from the substance or mixture
  Formation of toxic gases is possible during heating or in case of fire.
  In case of fire, the following can be released:
  - Hydrogen fluoride (HF)
  - Fluorophosgene (COF₂)
  - Carbon monoxide (CO)
- 5.3 Advice for firefighters
  - Protective equipment: Do not inhale explosion gases or combustion gases.
  - Additional information
    Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

SECTION 6: Accidental release measures

- 6.1 Personal precautions, protective equipment and emergency procedures
  Wear protective clothing.
  Avoid formation of dust.
  Use respiratory protective device against the effects of fumes/dust/aerosol.
- 6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- 6.3 Methods and material for containment and cleaning up: Pick up mechanically.
- 6.4 Reference to other sections
  See Section 7 for information on safe handling.
  See Section 8 for information on personal protection equipment.
  See Section 13 for disposal information.

SECTION 7: Handling and storage

- 7.1 Precautions for safe handling
  Keep away from heat and direct sunlight.
  Prevent formation of dust.
  Ensure good ventilation/exhaustion at the workplace.
  This product may contain slight amounts of hydrofluoric acid, which may be released during usage or handling.
  Information about fire - and explosion protection:
    - Protect from heat.
    - Protect against electrostatic charges.
    - Keep ignition sources away - Do not smoke.
- 7.2 Conditions for safe storage, including any incompatibilities
  - Storage:
    - Requirements to be met by storerooms and receptacles: Store in a cool location.
    - Information about storage in one common storage facility: Not required.
    - Further information about storage conditions: Store in cool, dry conditions in well sealed receptacles.

(Contd. of page 1)

(Contd. of page 3)
SECTION 8: Exposure controls/personal protection

- Additional information about design of technical facilities: No further data; see item 7.

- 8.1 Control parameters
  - Ingredients with limit values that require monitoring at the workplace: Not required.
  - Additional information: The lists valid during the making were used as basis.

- 8.2 Exposure controls
  - Personal protective equipment:
    - General protective and hygienic measures:
      - Avoid contact with the eyes and skin.
      - The usual precautionary measures are to be adhered to when handling chemicals.
      - Do not inhale dust / smoke / mist.
    - Respiratory protection:
      - Use suitable respiratory protective device only when aerosol or mist is formed.
      - In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
    - Protection of hands:
      - Only use chemical-protective gloves with CE-labelling of category III.
      - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
    - Material of gloves
      - Nitrile rubber, NBR
      - Recommended thickness of the material: ≥ 0.4 mm
      - The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.
    - Penetration time of glove material
      - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
    - Eye protection: Safety glasses
    - Body protection: Protective work clothing

SECTION 9: Physical and chemical properties

- 9.1 Information on basic physical and chemical properties
  - General Information
  - Appearance:
    - Form: Powder
    - Colour: White
    - Odour: Odourless
    - Odour threshold: Not determined.
  - pH-value: Not applicable.

- Change in condition
  - Melting point/freezing point: > 300 °C
  - Initial boiling point and boiling range: Not applicable

- Flash point: Not applicable.

(Contd. of page 2)

- 7.3 Specific end use(s) No further relevant information available.

(Contd. on page 4)
inhalation of vapours in high concentrations may lead to headache, giddiness and nausea.

- **Solids content:** Not applicable.

- **Density:** Not determined.
  - Bulk density at 20 °C: ≈0.5 g/cm³
  - Relative density
  - Vapour density: Not determined.
  - Evaporation rate: Not applicable.

- **Solubility in / Miscibility with water:** Insoluble.

- **Partition coefficient: n-octanol/water:** Not determined.

- **Viscosity:**
  - Dynamic: Not applicable.

- **Solids content:** ≈ 100%

**SECTION 10: Stability and reactivity**

- **10.1 Reactivity:** No further relevant information available.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**
  No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions:** No dangerous reactions known.
- **10.4 Conditions to avoid:** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:**
  - Hydrogen fluoride
  - Fluorophosgene
  - Carbonyl fluoride
  - Hexafluoropropylene
  - Perfluorisobutylene
  - Tetrafluoroethylene

**Additional information:**
When heated, gaseous decomposition products may be generated from PTFE, which can cause "fluoropolymer fever" on inhalation. Inhalation/eye contact: in high concentrations irritating to the mucous membranes, narcotic effect and influence on power of reaction and loss of coordination possible. Prolonged inhalation of vapours in high concentrations may lead to headache, giddiness and nausea.
SECTION 11: Toxicological information

11.1 Information on toxicological effects
- Acute toxicity Based on available data, the classification criteria are not met.

- LD/LC50 values relevant for classification:

<table>
<thead>
<tr>
<th></th>
<th>LD50</th>
<th>LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>&gt;5,000 mg/kg (rat)</td>
<td></td>
</tr>
<tr>
<td>Inhalative</td>
<td>3.5 mg/l 30 min, pyrolysis products, 625 °C</td>
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<tr>
<td></td>
<td>2.7 mg/l 5 min, pyrolysis products, 800 °C</td>
<td></td>
</tr>
</tbody>
</table>

CAS: 9002-84-0 Polytetrafluoroethylene

<table>
<thead>
<tr>
<th>Oral</th>
<th>LD50</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&gt;5,000 mg/kg (rat)</td>
</tr>
</tbody>
</table>

- Primary irritant effect:
  - Skin corrosion/irritation Based on available data, the classification criteria are not met.
  - Serious eye damage/irritation Based on available data, the classification criteria are not met.
  - Respiratory or skin sensitisation Based on available data, the classification criteria are not met.
  - CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction)
  - Germ cell mutagenicity Based on available data, the classification criteria are not met.
  - Carcinogenicity Based on available data, the classification criteria are not met.
  - Reproductive toxicity Based on available data, the classification criteria are not met.
  - STOT-single exposure Based on available data, the classification criteria are not met.
  - STOT-repeated exposure Based on available data, the classification criteria are not met.
  - Aspiration hazard Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1 Toxicity
- Aquatic toxicity: No further relevant information available.
- 12.2 Persistence and degradability: No further relevant information available.
- 12.3 Bioaccumulative potential: No further relevant information available.
- 12.4 Mobility in soil: No further relevant information available.

- Ecotoxicological effects:
  - Behaviour in sewage processing plants:
  
Inhibition of degradation activity in activated sludge is not to be anticipated during correct introduction of low concentrations. Do not release untreated into natural waters.

- Additional ecological information:

- General notes:
  - Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
  - Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

12.5 Results of PBT and vPvB assessment

According to Annex XIV of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria.

- Self classification.

12.6 Other adverse effects: No further relevant information available.
SECTION 13: Disposal considerations

- 13.1 Waste treatment methods
  - Recommendation
    Must not be disposed together with household garbage. Do not allow product to reach sewage system.

- Uncleaned packaging:
  - Recommendation: Disposal must be made according to official regulations.
  - Recommended cleansing agents: Water, if necessary together with cleansing agents.

SECTION 14: Transport information

- 14.1 UN-Number
  - ADR/RID/ADN, ADN, IMDG, IATA Void

- 14.2 UN proper shipping name
  - ADR/RID/ADN, ADN, IMDG, IATA Void

- 14.3 Transport hazard class(es)
  - ADR/RID/ADN, ADN, IMDG, IATA Void
  - Class

- 14.4 Packing group
  - ADR/RID/ADN, IMDG, IATA Void

- 14.5 Environmental hazards:
  - Marine pollutant: No

- 14.6 Special precautions for user
  - Not applicable.

- 14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
  - Not applicable.

- Transport/Additional information:
  - Not a dangerous good to the above specifications.

- UN "Model Regulation": Void

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
  - Directive 2012/18/EU
  - Named dangerous substances - ANNEX I Substance is not listed.
  - National regulations:
    - Water hazard class: Water hazard class 1 (German AwSV, Self-assessment): slightly hazardous for water.

- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Department issuing SDS:
  Product Safety Department
  E-Mail: msds@munzing.com
Abbreviations and acronyms:
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative