SPECIALTN MUNZING Micro Technologies GmbH

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

1.1 Product identifier
   - Trade name: CERETAN® A 71
   - CAS Number: 112-84-5
   - EC number: 204-009-2
   - Registration number: 01-2119519225-45

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 Elsteraue, Germany
     E-Mail: ceretan@munzing.com
     Tel.: +49 3441 829 10-22

   - Further information obtainable from:
     Product Safety Department
     E-mail (MSDS): msds@munzing.com

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

2.3 Other hazards
   - Risk of dust explosion
   - Results of PBT and vPvB assessment Not applicable.
   - PBT: None.
   - vPvB: None.

SECTION 3: Composition/information on ingredients

- CAS No. Description
  - 112-84-5 Erucamide wax
- Identification number(s)
- EC number: 204-009-2

SECTION 4: First aid measures

4.1 Description of first aid measures
   - General information: No special measures required.
   - After inhalation: Supply fresh air; consult doctor in case of complaints.
   - After skin contact: Immediately wash with water and soap and rinse thoroughly.

(Contd. on page 2)
Dust can combine with air to form an explosive mixture.

Information about fire - and explosion protection:

- 5.1 Extinguishing media
  - Suitable extinguishing agents:
    CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
    Use fire extinguishing methods suitable to surrounding conditions.
  - For safety reasons unsuitable extinguishing agents: Water with full jet
  - 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:
    Carbon monoxide (CO)
    Nitrogen oxides (NOx)
  - 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
  - Avoid formation of dust.
  - Use respiratory protective device against the effects of fumes/dust/aerosol.
  - Wear protective clothing.
  - Particular danger of slipping on leaked/spilled product.
  - Wear protective equipment. Keep unprotected persons away.
- 6.2 Environmental precautions: Do not allow to enter sewers/ surface or ground water.
- 6.3 Methods and material for containment and cleaning up:
  - Ensure adequate ventilation.
  - Do not flush with water or aqueous cleansing agents
- 6.4 Reference to other sections
  - No dangerous substances are released.
  - 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.
- Information about fire - and explosion protection:
  - Protect against electrostatic charges.
  - Dust can combine with air to form an explosive mixture.
Recommended thickness of the material:

Store in cool, dry conditions in well sealed receptacles.

· 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:
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
  · Additional information: The lists valid during the making were used as basis.

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:
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
  · Additional information: The lists valid during the making were used as basis.

· 8.2 Exposure controls
  · Personal protective equipment:
    · General protective and hygienic measures:
      The usual precautionary measures are to be adhered to when handling chemicals.
      Do not inhale dust / smoke / mist.
      Avoid contact with the eyes and skin.
    · Respiratory protection:
      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.
      Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
    · 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.
    · Penetration time of glove material
      The determined penetration times according to EN 16523-1:2015 are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.
      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

(Contd. of page 4)
**Trade name: CERETAN® A 71**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Colour:</strong></td>
<td>Light yellow</td>
</tr>
<tr>
<td><strong>Odour:</strong></td>
<td>Specific type</td>
</tr>
<tr>
<td><strong>Odour threshold:</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>pH-value:</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Change in condition</strong></td>
<td>Undetermined.</td>
</tr>
<tr>
<td><strong>Melting point/freezing point:</strong></td>
<td>Undetermined.</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range:</strong></td>
<td>≈ 84 °C (DGF M-III 3)</td>
</tr>
<tr>
<td><strong>Drip point:</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Flash point:</strong></td>
<td>≈ 270 °C (DIN EN ISO 2719)</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas):</strong></td>
<td>Product is not flammable.</td>
</tr>
<tr>
<td><strong>Decomposition temperature:</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Auto-ignition temperature:</strong></td>
<td>Product is not selfigniting.</td>
</tr>
<tr>
<td><strong>Explosion properties:</strong></td>
<td>Product is not explosive. However, formation of explosive dust/vapour mixtures are possible.</td>
</tr>
<tr>
<td><strong>Explosion limits:</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Lower:</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Upper:</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Oxidising properties:</strong></td>
<td>None.</td>
</tr>
<tr>
<td><strong>Vapour pressure:</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Density at 23 °C:</strong></td>
<td>&lt; 1.0 g/cm³ (DIN EN ISO 1183)</td>
</tr>
<tr>
<td><strong>Relative density:</strong></td>
<td>&lt; 1 g/cm³</td>
</tr>
<tr>
<td><strong>Vapour density:</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Evaporation rate:</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Solubility in / Miscibility with water:</strong></td>
<td>Insoluble.</td>
</tr>
<tr>
<td><strong>Partition coefficient: n-octanol/water:</strong></td>
<td>Not determined.</td>
</tr>
<tr>
<td><strong>Viscosity:</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Dynamic:</strong></td>
<td>Not applicable.</td>
</tr>
<tr>
<td><strong>Solids content:</strong></td>
<td>100.0 %</td>
</tr>
<tr>
<td><strong>9.2 Other information</strong></td>
<td>No further relevant information available.</td>
</tr>
</tbody>
</table>

**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** Risk of dust explosion.
- **10.4 Conditions to avoid** No further relevant information available.
- **10.5 Incompatible materials:** No further relevant information available.
- **10.6 Hazardous decomposition products:** No dangerous decomposition products known.
SECTION 11: Toxicological information

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

11.2 LD/LC50 values relevant for classification:
- **CAS: 112-84-5 Erucamide wax**
  - Oral LD50 >2,000 mg/kg (rat)

11.3 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.
- **Persistence and degradability**: Easily eliminable from water.
- **Bioaccumulative potential**: No further relevant information available.
- **Mobility in soil**: No further relevant information available.
- **Ecotoxical 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) (Assessment by list): 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.

- **European waste catalogue**
  - 16 03 06 organic wastes other than those mentioned in 16 03 05
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

- **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 I (German AwSV, Assessment by list): 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
Trade name: CERETAN® A 71

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