This safety data sheet complies with the requirements of:

Issue Date: 2009-01-16
Revision Date: 2018-12-12
Revision Number: 7

Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier
Product name: DEE FO® PI-45
Material No.: 9718
Historic Material No.: U1PI45

1.2. Relevant identified uses of the substance or mixture and uses advised against
Relevant identified uses: Anti-foaming agent (defoamer)
Uses advised against: Consumer use

1.3. Details of the supplier of the safety data sheet
Manufacturer: Munzing - Ultra Additives LLC.
1455 Broad Street
Bloomfield NJ 07003
United States
Email: info@munzing.us
Phone: 1-973-279-1306

Supplier: Münzing Chemie GmbH
Münzingstrasse 2
74232 Abstatt
Germany
Email: info@munzing.com
Phone: +49 (0) 7131/987-0

Emergency Telephone
Emergency telephone: 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 [CLP]
This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS]

2.2. Label Elements
This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS]
EUH210 - Safety data sheet available on request
2.3. Other hazards
No information available.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures
Chemical nature of the product: Aqueous dispersion

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>EC No.</th>
<th>CAS No.</th>
<th>Weight-%</th>
<th>Classification according to Regulation (EC) No. 1272/2008 [CLP]</th>
<th>REACH No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dodecamethylcyclohexasiloxane</td>
<td>208-762-8</td>
<td>540-97-6</td>
<td>&lt;0.30</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Decamethylcyclopentasiloxane</td>
<td>208-764-9</td>
<td>541-02-6</td>
<td>&lt;0.30</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Octamethylcyclotetrasiloxane</td>
<td>209-136-7</td>
<td>556-67-2</td>
<td>&lt;0.30</td>
<td>Repr. 2 (H361f) Aquatic Chronic 4 (H413) Flamm. Liq. 3 (H226)</td>
<td>-</td>
</tr>
</tbody>
</table>

Full text of H- and EUH-phrases: see section 16

Polymer, starting materials listed in EINECS. This product contains one or more candidate substance(s) of very high concern (Regulation (EC) No. 1907/2006 (REACH), Article 59)

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists: Get medical advice/attention.

Skin Contact
Wash with soap and water. If symptoms persist, call a physician.

Inhalation
Move victim to fresh air.

Ingestion
Clean mouth with water.

Self-Protection of the First Aider
Use personal protection equipment.

4.2. Most important symptoms and effects, both acute and delayed

Most important symptoms and effects
No information available.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician
No information available.

Section 5: FIRE FIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Water spray. Carbon dioxide (CO2). Dry chemical. Alcohol
resistant foam. Water mist may be used to cool closed containers.

**Unsuitable Extinguishing Media**
No information available.

**5.2. Special hazards arising from the substance or mixture**

**Hazardous combustion products**
Thermal decomposition can lead to release of irritating and toxic gases and vapors.

**5.3. Advice for firefighters**
Advice for fire-fighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

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### Section 6: ACCIDENTAL RELEASE MEASURES

**6.1. Personal precautions, protective equipment and emergency procedures**

**Personal precautions**
Use personal protection equipment. Avoid contact with skin, eyes or clothing.

**Protective precautions**
Use personal protection equipment.

**6.2. Environmental precautions**

**Environmental Precautions**
Avoid release to the environment.

**6.3. Methods and material for containment and cleaning up**

**Methods for Containment**
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

**Methods for Clean-Up**
Take up mechanically, placing in appropriate containers for disposal.

**6.4. Reference to other sections**
Reference to other sections
See Sections 5 & 7 for additional information.

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### Section 7: HANDLING AND STORAGE

**7.1. Precautions for safe handling**

**Handling**
Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing.

**General Hygiene Considerations**
Handle in accordance with good industrial hygiene and safety practice. Take off contaminated clothing and wash before reuse. Slippery, can cause falls if walked on.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Conditions**
Keep containers tightly closed in a dry, cool and well-ventilated place.

**7.3. Specific end use(s)**

**Specific Uses**
No information available.

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### Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**8.1. Control parameters**
Exposure limits

This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Derived No Effect Level (DNEL)
No information available.

Predicted No Effect Concentration (PNEC)
No information available.

8.2. Exposure controls

Engineering Controls
Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/Face Protection
Ensure that eyewash stations and safety showers are close to the workstation location. Tight sealing safety goggles. Safety glasses with side-shields.

Skin protection
Wear suitable protective clothing and gloves. Wear protective nitrile rubber gloves. Wear protective butyl rubber gloves.

Respiratory protection
In case of insufficient ventilation, wear suitable respiratory equipment.

Environmental exposure controls
No information available.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks/ Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Liquid</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Translucent, Off-white</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>Slight</td>
<td></td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>8.0</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting point</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Boiling point</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>204 °C / 399 °F</td>
<td>Ceta Closed Cup</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>1.01</td>
<td>No information available</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>Slightly soluble</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No information available.</td>
<td>No information available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>&lt;5000 cps@25C</td>
<td>No information available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No information available</td>
<td></td>
</tr>
</tbody>
</table>

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity
Reactivity Stable under normal conditions.

10.2. Chemical stability
Chemical Stability Stable under normal conditions.

10.3. Possibility of hazardous reactions
Possibility of Hazardous Reactions None under normal processing.
Hazardous Polymerization Hazardous polymerization does not occur.

10.4. Conditions to avoid
Conditions to Avoid Keep at temperatures above 0°C.

10.5. Incompatible materials
Incompatible Materials Strong oxidizing agents.

Hazardous decomposition products
Hazardous decomposition products Thermal decomposition can lead to release of irritating and toxic gases and vapors. Carbon oxides. Formaldehyde. Silicon dioxide.

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects
Acute Toxicity
Product Information

<table>
<thead>
<tr>
<th>Eyes</th>
<th>Contact with eyes may cause irritation. Avoid contact with eyes.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td>Substance may cause slight skin irritation. Avoid contact with skin.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Health injuries are not known or expected under normal use.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>Health injuries are not known or expected under normal use.</td>
</tr>
</tbody>
</table>

Unknown acute toxicity Not applicable.

| ATEmix (oral) | 12,533.00 mg/kg |
| ATEmix (dermal) | 21,829.00 mg/kg |
| ATEmix (inhalation-dust/mist) | 656.00 mg/L |

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organosiloxane polymer</td>
<td>&gt; 24 g/kg (Rat)</td>
<td>&gt; 17 g/kg (Rat)</td>
<td>&gt; 2 g/kg (Rabbit)</td>
</tr>
<tr>
<td>Polyalkylene glycol</td>
<td>= 5700 mg/kg (Rat) = 16 g/kg (Rat)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>= 320 mg/m³ (Rat) 4 h</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Skin Corrosion/Irritation No information available.
Eye damage/irritation No information available.
Sensitization No information available.
Mutagenic effects No information available.
Reproductive Effects Possible risk of impaired fertility. Possible risk of harm to the unborn child.
STOT - single exposure  
No information available.

STOT - repeated exposure  
No information available.

Aspiration Hazard  
No information available.

Carcinogenic effects  
No information available.

Section 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecotoxicity  
Information given is based on data on the components and the ecotoxicology of similar products.

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Algae</th>
<th>Fish</th>
<th>Daphnia magna</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatty alcohol alkoxyate</td>
<td>EC50 (72h) &gt;0.1 - &lt;1 mg/l Scenedesmus subspicatus</td>
<td>LC50 (96 h) &gt; 1 - &lt; 10 mg/l, Leuciscus idus</td>
<td>EC50 (48 h) 1 mg/l, NOEC (21 d) &gt;0.1 - &lt;1 mg/l</td>
</tr>
<tr>
<td>Polyalkylene glycol</td>
<td>EC50, 48 hr: &gt;100 mg/L</td>
<td>LC50: &gt;100 mg/l (Golden orfe), 96 hr</td>
<td>EC50 (48 h): &gt; 100 mg/l</td>
</tr>
</tbody>
</table>

Unknown Aquatic Toxicity  
Not applicable.

Persistence and degradability  
Not readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulation/Accumulation  
No information available.

12.4. Mobility in soil

Mobility in Environmental Media  
No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment  
Not applicable.

12.6. Other adverse effects

Other adverse effects  
No information available.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste from residues/unused products  
Contain and dispose of waste according to local regulations.

Contaminated packaging  
Empty remaining contents.

Waste codes / waste designations according to EWC / AVV  
Not applicable.

Section 14: TRANSPORT INFORMATION
Section 15: REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

US TSCA
Australia (AICS)
Canada (DSL)
China (IECSC)
Europe (EINECS/ELINCS/NLP)
Japan (ENCS)
South Korea (KECL)
Philippines (PICCS)
New Zealand
Taiwan (TCSI)

Legend
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AICS - Australian Inventory of Chemical Substances

Germany

WGK Classification (AwSV) Water endangering class = 1 (self estimation)

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorizations and/or restrictions on use:
This product does not contain substances subject to authorization (Regulation (EC) No. 1907/2006 (REACH), Annex XIV). This product does not contain substances subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII).

Persistent Organic Pollutants
Not applicable

Ozone-depleting substances (ODS) regulation (EC) 1005/2009
Not applicable

15.2. Chemical safety assessment

No information available

Section 16: OTHER INFORMATION

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3
H226 - Flammable liquid and vapor
H361f - Suspected of damaging fertility
H413 - May cause long lasting harmful effects to aquatic life

Legend
SVHC: Substances of Very High Concern for Authorization:

TWA - TWA (time-weighted average)
STEL - STEL (Short Term Exposure Limit)
Ceiling - Maximum limit value
* - Skin designation

Classification procedure Minimum classification

Issue Date: 2009-01-16
Revision Date: 2018-12-12
Reason for revision SDS sections updated, 2, 3, 11.

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet