This safety data sheet complies with the requirements of:
Classification according to Directive 67/548/EEC or 1999/45/EC

Issue Date: 2009-01-16  Revision Date: 2015-04-02  Revision Number: 6

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

1.1. Product identifier
Product name DEE FO® PI-12
Product code U1PI12

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

1.4. Emergency telephone number
Emergency telephone CHEMTREC (24 hrs - for spill, leak or transportation incidents):
US: 1-800-424-9300
non-US: 1-703-527-3887
EU: +49 761 19240 (VIZ Freiburg)

Europe 112

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]

Classification according to EU Directives 67/548/EEC or 1999/45/EC
Not a hazardous substance or mixture according to EC-directives 67/548/EEC or 1999/45/EC
Symbol
Not dangerous

Full text of R-phrases: see section 16

2.2. Label Elements

This mixture is classified as not hazardous according to regulation (EC) 1272/2008 [GHS]

2.3. Other hazards

No information available.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Chemical nature of the product Petroleum oil-based mixture.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Petroleum distillates, solvent dewaxed light paraffinic</td>
<td>265-159-2</td>
<td>64742-56-9</td>
<td>1 - 5</td>
<td>-</td>
<td>Carc. 1B  (H350) L</td>
<td>No data available</td>
</tr>
<tr>
<td>Petroleum distillates, solvent dewaxed heavy paraffinic</td>
<td>265-169-7</td>
<td>64742-65-0</td>
<td>10 - 30</td>
<td>Carc. 1B  (H350) L</td>
<td>No data available</td>
<td></td>
</tr>
</tbody>
</table>

Full text of R-phrases: see section 16

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

Note
The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3 % DMSO extract as measured by IP 346. This note applies only to certain complex oil derived substances in Annex I.

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

Eye Contact Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation Move victim to fresh air.

Ingestion Clean mouth with water. If swallowed, DO NOT induce vomiting.

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
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. Carbon dioxide (CO2). Dry chemical. Alcohol resistant foam.

Unsuitable Extinguishing Media
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Hazardous Combustion Products
Thermal decomposition can lead to release of irritating gases and vapours.

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.

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 and 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.

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Handling
Handle in accordance with good industrial hygiene and safety practice. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment.

General Hygiene Considerations
Handle in accordance with good industrial hygiene and safety practice. Take off contaminated clothing and wash before reuse. Do not get in eyes, on skin, or on clothing. Slippery, can cause falls if walked on.

7.2. Conditions for safe storage, including any incompatibilities

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

7.3. Specific end use(s)
Specific Uses

No information available.

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

Personal protective equipment

Eye/Face Protection
Safety glasses with side-shields. If splashes are likely to occur, wear:. Goggles.

Skin protection
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn. PVC. Neoprene. PVA.

Respiratory protection
If exposure limits are likely to be exceeded or if irritation or other symptoms are experienced, NIOSH/MSHA or EN 136 approved respiratory protection should be worn.

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>Light yellow</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>No information available</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting point/freezing 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>182 °C / 360 °F</td>
<td>No information available</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>No information available</td>
<td></td>
</tr>
<tr>
<td>Upper flammability limit</td>
<td>No information available</td>
<td></td>
</tr>
<tr>
<td>Lower flammability limit</td>
<td>No information available</td>
<td></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>0.95</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>Partially miscible</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;600 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>
9.2. Other information

VOC content (%) No information available

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 Heat, flames and sparks.

10.5. Incompatible materials
Incompatible Materials Strong oxidizing agents.

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

Section 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute Toxicity

Product Information

| Eyes | Contact with eyes may cause irritation. Avoid contact with eyes. |
| Skin | May cause skin irritation and/or dermatitis. Avoid contact with skin. |
| Inhalation | Inhalation of vapors in high concentration may cause irritation of respiratory system. |
| Ingestion | Health injuries are not known or expected under normal use. |

Unknown acute toxicity 41.52805553% of the mixture consists of ingredient(s) of unknown toxicity.

The following values are calculated based on chapter 3.1 of the GHS document

<table>
<thead>
<tr>
<th>Component</th>
<th>Oral LD50</th>
<th>Dermal LD50</th>
<th>Inhalation LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatty acids</td>
<td>= 7600 mg/kg (Rat)</td>
<td>&gt; 2000 mg/kg (Rabbit)</td>
<td>&gt; 2.2 mg/L (Rat) 1 h</td>
</tr>
<tr>
<td>Modified Silica</td>
<td>&gt; 5000 mg/kg (Rat)</td>
<td>&gt; 2000 mg/kg (Rabbit)</td>
<td>&gt; 2.2 mg/L (Rat) 1 h</td>
</tr>
<tr>
<td>Polyalkylene glycol, alkyl ether</td>
<td>= 9100 mg/kg (Rat)</td>
<td>= 13340 mg/kg (Rabbit) = 21200</td>
<td></td>
</tr>
</tbody>
</table>
Skin Corrosion/Irritation  No information available.
Eye damage/irritation  Irritating to eyes.
Sensitization  No information available.
Mutagenic effects  No information available.
Reproductive Effects  No information available.
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  Discharge into the environment must be avoided.
Unknown Aquatic Toxicity  61.31982% of the mixture consists of components(s) of unknown hazards to the aquatic environment.

<table>
<thead>
<tr>
<th>Component</th>
<th>Algae</th>
<th>Fish</th>
<th>Daphnia magna</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatty acids</td>
<td>EL50: &gt; 1000 mg/l, 72 hr (Selenastrum capricornutum, OECD 201)</td>
<td>LL50: &gt; 10000 mg/l 96 hr (Danio rerio)</td>
<td>EL50: &gt; 1000 mg/l 48 hr (OECD 202)</td>
</tr>
<tr>
<td>Petroleum distillates, solvent dewaxed light paraffinic 64742-56-9</td>
<td>-</td>
<td>5000: 96 h Oncorhynchus mykiss mg/L LC50</td>
<td>1000: 48 h Daphnia magna mg/L EC50</td>
</tr>
<tr>
<td>Petroleum distillates, solvent dewaxed heavy paraffinic 64742-65-0</td>
<td>-</td>
<td>5000: 96 h Oncorhynchus mykiss mg/L LC50</td>
<td>1000: 48 h Daphnia magna mg/L EC50</td>
</tr>
<tr>
<td>Treated silica</td>
<td>-</td>
<td>LC50: &gt;10000 mg/l, 96h</td>
<td>EC50: &gt;10000 mg/l, 24h</td>
</tr>
<tr>
<td>Modified Silica</td>
<td>440: 72 h Pseudokirchneriella subcapitata mg/L EC50</td>
<td>5000: 96 h Brachydanio rerio mg/L LC50 static</td>
<td>7600: 48 h Ceriodaphnia dubia mg/L EC50</td>
</tr>
<tr>
<td>Polyalkylene glycol, alkyl ether</td>
<td>-</td>
<td>LC50: 20.6 mg/l (Pimphales promelas)</td>
<td>EC50: 450 mg/l (Daphnia magna)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LC50 (96h): &gt; 500 m/L (golden orfe)</td>
<td>EC50 (48 h): &gt;100 mg/l (Daphnia magna)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>LC50 (96h): 104 mg/L (Brachydanio rerio)</td>
<td>LC50: 9.8 mg/l (Daphnia magna)</td>
</tr>
</tbody>
</table>

12.2. Persistence and degradability

Persistence and degradability  No information available.

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 containers should be taken for local recycling, recovery or waste disposal. Do not burn, or use a cutting torch on, the empty drum.

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

Section 14: TRANSPORT INFORMATION

ADR/RID  Not regulated

IMDG/IMO  Not regulated

IATA  Not regulated

Section 15: REGULATORY INFORMATION

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

International Inventories

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

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

WGK Classification (VvVwS)  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 R-phrases referred to under sections 2 and 3
No information available

Full text of H-Statements referred to under section 3
H350 - May cause cancer if swallowed

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: 2015-04-02
Reason for revision Update to Format.

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