



## SAFETY DATA SHEET

### FOD - STICKLERS OPTIC GRADE DUST and PARTICLE REMOVER

According to Appendix D, OSHA Hazard Communication Standard 29 CFR §1910.1200

#### 1. Identification

##### Product identifier

**Product name** FOD - STICKLERS OPTIC GRADE DUST and PARTICLE REMOVER

**Product number** MCC-FOD10A

##### Recommended use of the chemical and restrictions on use

**Application** Cleaning agent.

**Uses advised against** No specific uses advised against are identified.

##### Details of the supplier of the safety data sheet

**Supplier** MICROCARE LLC

**Manufacturer** MICROCARE LLC

##### Emergency telephone number

**Emergency telephone** CHEMTREC 1-800-424-9300 (within the U.S.)  
+1 703-741-5970 (from anywhere in the world)

#### 2. Hazard(s) identification

##### Classification of the substance or mixture

**Physical hazards** Press. Gas, Compressed - H280

**Health hazards** Not Classified

**Environmental hazards** Not Classified

**Human health** Prolonged or repeated contact with skin may cause irritation, redness and dermatitis. Mild dermatitis, allergic skin rash.

**Physicochemical** Aerosol containers can explode when heated, due to excessive pressure build-up. Vapors are heavier than air and may travel along the floor and accumulate in the bottom of containers. Gas or vapor displaces oxygen available for breathing (asphyxiant). Not considered to be a significant hazard due to the small quantities used.

##### Label elements

##### Hazard symbols



**Signal word** Warning

**Hazard statements** H280 Contains gas under pressure; may explode if heated.

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**Precautionary statements**

P210 Keep away from heat, sparks, open flames and hot surfaces. No smoking.  
 P211 Do not spray on an open flame or other ignition source.  
 P251 Pressurized container: Do not pierce or burn, even after use  
 P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50°C /122°F.  
 P501 Dispose of contents/ container in accordance with local regulations.

**Supplemental label information**

Safety data sheet available on request. For use in industrial installations only.

### Other hazards

This product does not contain any substances classified as PBT or vPvB.

### 3. Composition/information on ingredients

#### Mixtures

|                                   |                |
|-----------------------------------|----------------|
| <b>HFC-134a Tetrafluoroethane</b> | <b>60-100%</b> |
| CAS number: 811-97-2              |                |
| <b>Classification</b>             |                |
| Press. Gas, Liquefied - H280      |                |
| Simple Asphyxiant - USH03         |                |

The full text for all hazard statements is displayed in Section 16.

**Composition comments**

TSCA: The ingredients of this product are on the TSCA Inventory. The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of CFR 1900.1200

### Composition

### 4. First-aid measures

#### Description of first aid measures

**General information**

If in doubt, get medical attention promptly. Show this Safety Data Sheet to the medical personnel.

**Inhalation**

Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Loosen tight clothing such as collar, tie or belt. Get medical attention if symptoms are severe or persist.

**Ingestion**

Rinse mouth thoroughly with water. Get medical advice/attention if you feel unwell. Do not induce vomiting unless under the direction of medical personnel.

**Skin Contact**

Rinse with water.

**Eye contact**

Remove any contact lenses and open eyelids wide apart. Rinse with water. Get medical attention if any discomfort continues.

**Protection of first aiders**

First aid personnel should wear appropriate protective equipment during any rescue.

#### Most important symptoms and effects, both acute and delayed

**General information**

The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

**Inhalation**

Spray/mists may cause respiratory tract irritation.

**Ingestion**

Due to the physical nature of this product, it is unlikely that ingestion will occur.

**Skin contact**

Repeated exposure may cause skin dryness or cracking.

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**Eye contact** May be slightly irritating to eyes. May cause discomfort.

### Indication of immediate medical attention and special treatment needed

**Notes for the doctor** Treat symptomatically.

### 5. Fire-fighting measures

#### Extinguishing media

**Suitable extinguishing media** The product is not flammable. Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

**Unsuitable extinguishing media** Do not use water jet as an extinguisher, as this will spread the fire.

#### Special hazards arising from the substance or mixture

**Specific hazards** Containers can burst violently or explode when heated, due to excessive pressure build-up. Bursting aerosol containers may be propelled from a fire at high speed. If aerosol cans are ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant.

**Hazardous combustion products** Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors.

#### Advice for firefighters

**Protective actions during firefighting** Avoid breathing fire gases or vapors. Evacuate area. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Cool containers exposed to flames with water until well after the fire is out. If a leak or spill has not ignited, use water spray to disperse vapors and protect men stopping the leak. Control run-off water by containing and keeping it out of sewers and watercourses. If risk of water pollution occurs, notify appropriate authorities.

**Special protective equipment for firefighters** Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Standard Firefighter's clothing including helmets, protective boots and gloves will provide a basic level of protection for chemical incidents.

### 6. Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

**Personal precautions** Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not touch or walk into spilled material. Evacuate area. Risk of explosion.

#### Environmental precautions

**Environmental precautions** Avoid discharge into drains or watercourses or onto the ground.

#### Methods and material for containment and cleaning up

**Methods for cleaning up** Wear protective clothing as described in Section 8 of this safety data sheet. Clear up spills immediately and dispose of waste safely. Eliminate all ignition sources if safe to do so. No smoking, sparks, flames or other sources of ignition near spillage. Under normal conditions of handling and storage, spillages from aerosol containers are unlikely. If aerosol cans are ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. Small Spillages: Wipe up with an absorbent cloth and dispose of waste safely. Large Spillages: If the product is soluble in water, dilute the spillage with water and mop it up. Alternatively, or if it is not water-soluble, absorb the spillage with an inert, dry material and place it in a suitable waste disposal container. Flush contaminated area with plenty of water. Wash thoroughly after dealing with a spillage. For waste disposal, see Section 13.

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**Reference to other sections** For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

### 7. Handling and storage

#### Precautions for safe handling

**Usage precautions** Read and follow manufacturer's recommendations. Wear protective clothing as described in Section 8 of this safety data sheet. Keep away from food, drink and animal feeding stuffs. Avoid exposing aerosol containers to high temperatures or direct sunlight. Do not spray on an open flame or other ignition source. Pressurized container: Do not pierce or burn, even after use. Spray will evaporate and cool rapidly and may cause frostbite or cold burns if in contact with skin. Avoid contact with eyes. Avoid inhalation of vapors and spray/mists.

**Advice on general occupational hygiene** Wash promptly if skin becomes contaminated. Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse.

#### Conditions for safe storage, including any incompatibilities

**Storage precautions** Store away from incompatible materials (see Section 10). Keep only in the original container. Keep container tightly closed, in a cool, well ventilated place. Keep containers upright. Protect containers from damage. Protect from sunlight. Do not store near heat sources or expose to high temperatures. Do not expose to temperatures exceeding 50°C/122°F.

**Storage class** Chemical storage.

#### Specific end uses(s)

**Specific end use(s)** The identified uses for this product are detailed in Section 1.

**Reference to other sections.** Store away from incompatible materials (see Section 10).

### 8. Exposure controls/Personal protection

#### Control parameters

#### Occupational exposure limits

#### HFC-134a Tetrafluoroethane

Long-term exposure limit (8-hour TWA): OES 4240 mg/m<sup>3</sup>

#### Exposure controls

#### Protective equipment



**Appropriate engineering controls** Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients.

**Eye/face protection** Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses.

**Hand protection** No specific hand protection recommended.

**Other skin and body protection** Wear appropriate clothing to prevent repeated or prolonged skin contact.

**Hygiene measures** Wash after use and before eating, smoking and using the toilet. Do not eat, drink or smoke when using this product.

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|  |   |
|--|---|
| <b>Respiratory protection</b>          | Ensure all respiratory protective equipment is suitable for its intended use and is NIOSH approved. Check that the respirator fits tightly and the filter is changed regularly. Gas and combination filter cartridges should comply with OSHA 1910.134. Full face mask respirators with replaceable filter cartridges should comply with OSHA 1910.134. Half mask and quarter mask respirators with replaceable filter cartridges should comply with OSHA 1910.134. |
| <b>Environmental exposure controls</b> | Keep container tightly sealed when not in use.  |

### 9. Physical and chemical properties

#### Information on basic physical and chemical properties

|   |   |
|---|---|
| <b>Appearance</b>                                   | Liquid. Gas Aerosol.  |
| <b>Color</b>  | Colorless.  |
| <b>Odor</b>   | Slight. Ether.  |
| <b>Odor threshold</b>                               | No information available.   |
| <b>pH</b>   | Not applicable.   |
| <b>Initial boiling point and range</b>              | -26.1°C/-15.0°F @ 101.3 kPa   |
| <b>Flash point</b>                                  | The product is not flammable.   |
| <b>Evaporation rate</b>                             | >1 (CCL4=1.0)   |
| <b>Evaporation factor</b>                           | No information available.   |
| <b>Flammability (solid, gas)</b>                    | Not applicable.   |
| <b>Upper/lower flammability or explosive limits</b> | Lower flammable/explosive limit: n/a Upper flammable/explosive limit: n/a |
| <b>Other flammability</b>                           | The product is not flammable.   |
| <b>Vapor pressure</b>                               | 6654 hPa @ 25°C/77°F  |
| <b>Vapor density</b>                                | 3.6 @ 25 C / 77 F   |
| <b>Relative density</b>                             | 1.208 @ 25°C/77°F   |
| <b>Bulk density</b>                                 | 1.21 g/cm <sup>3</sup> @ 25 C (77 F)                                      |
| <b>Solubility(ies)</b>                              | Slightly soluble in water.  |
| <b>Partition coefficient</b>                        | No information available.   |
| <b>Auto-ignition temperature</b>                    | No information available.   |
| <b>Decomposition Temperature</b>                    | No information available.   |
| <b>Viscosity</b>                                    | No information available.   |
| <b>Comments</b>                                     | Aerosol.  |
| <b>Global Warming Potential (GWP)</b>               |   |
| <b>Surface tension</b>                              |   |
| <b>Refractive index</b>                             | Not determined.   |
| <b>Particle size</b>                                | Not applicable.   |
| <b>Molecular weight</b>                             | No information available.   |

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|  |                           |
|--|---------------------------|
| <b>Volatility</b>  | 100%                      |
| <b>Saturation concentration</b>                                | No information available. |
| <b>Critical temperature</b>                                    | No information available. |
| <b>Volatile organic compound</b>                               | Not applicable.           |
| <b>Heat of vaporization (at boiling point), cal/g (Btu/lb)</b> |                           |

### 10. Stability and reactivity

|   |   |
|---|---|
| <b>Reactivity</b>                         | See the other subsections of this section for further details.  |
| <b>Stability</b>                          | Stable at normal ambient temperatures and when used as recommended. Stable under the prescribed storage conditions.   |
| <b>Possibility of hazardous reactions</b> | No potentially hazardous reactions known.   |
| <b>Conditions to avoid</b>                | Avoid exposing aerosol containers to high temperatures or direct sunlight. Pressurised container: may burst if heated   |
| <b>Materials to avoid</b>                 | No specific material or group of materials is likely to react with the product to produce a hazardous situation.  |
| <b>Hazardous decomposition products</b>   | Does not decompose when used and stored as recommended. Thermal decomposition or combustion products may include the following substances: Harmful gases or vapors. |

### 11. Toxicological information

#### Information on toxicological effects

|   |  |
|---|--|
| <b>Other health effects</b>                 | There is no evidence that the product can cause cancer.          |
| <b><u>Acute toxicity - oral</u></b>         |  |
| <b>Notes (oral LD<sub>50</sub>)</b>         | Based on available data the classification criteria are not met. |
| <b><u>Acute toxicity - dermal</u></b>       |  |
| <b>Notes (dermal LD<sub>50</sub>)</b>       | Based on available data the classification criteria are not met. |
| <b><u>Acute toxicity - inhalation</u></b>   |  |
| <b>Notes (inhalation LC<sub>50</sub>)</b>   | Based on available data the classification criteria are not met. |
| <b><u>Skin corrosion/irritation</u></b>     |  |
| <b>Animal data</b>                          | Based on available data the classification criteria are not met. |
| <b><u>Serious eye damage/irritation</u></b> |  |
| <b>Serious eye damage/irritation</b>        | Based on available data the classification criteria are not met. |
| <b><u>Respiratory sensitization</u></b>     |  |
| <b>Respiratory sensitization</b>            | Based on available data the classification criteria are not met. |
| <b><u>Skin sensitization</u></b>            |  |
| <b>Skin sensitization</b>                   | Based on available data the classification criteria are not met. |
| <b><u>Germ cell mutagenicity</u></b>        |  |
| <b>Genotoxicity - in vitro</b>              | Based on available data the classification criteria are not met. |

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### Carcinogenicity

**Carcinogenicity** Based on available data the classification criteria are not met.

**IARC carcinogenicity** None of the ingredients are listed or exempt.

### Reproductive toxicity

**Reproductive toxicity - fertility** Based on available data the classification criteria are not met.

**Reproductive toxicity - development** Based on available data the classification criteria are not met.

### Specific target organ toxicity - single exposure

**STOT - single exposure** Not classified as a specific target organ toxicant after a single exposure.

### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** Not classified as a specific target organ toxicant after repeated exposure.

### Aspiration hazard

**Aspiration hazard** Based on available data the classification criteria are not met.

### General information

The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

**Inhalation** Spray/mists may cause respiratory tract irritation.

**Ingestion** Due to the physical nature of this product, it is unlikely that ingestion will occur.

**Skin Contact** Repeated exposure may cause skin dryness or cracking.

**Eye contact** May be slightly irritating to eyes. May cause discomfort.

**Route of exposure** Ingestion Inhalation Skin and/or eye contact

**Target Organs** No specific target organs known.

### Toxicological information on ingredients.

#### HFC-134a Tetrafluoroethane

**Other health effects** There is no evidence that the product can cause cancer.

#### Acute toxicity - inhalation

**Acute toxicity inhalation (LC<sub>50</sub> gases ppmV)** 567,000.0

**Species** Rat

**ATE inhalation (gases ppm)** 567,000.0

**Inhalation** Vapors irritate the respiratory system. May cause coughing and difficulties in breathing.

**Ingestion** May cause stomach pain or vomiting. May cause nausea, headache, dizziness and intoxication.

**Skin Contact** May cause allergic contact eczema. Contact with liquid form may cause frostbite.

**Eye contact** May cause temporary eye irritation.

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### 12. Ecological information

**Ecotoxicity** Not regarded as dangerous for the environment. However, large or frequent spills may have hazardous effects on the environment.

**Toxicity** Based on available data the classification criteria are not met.

#### Ecological information on ingredients.

##### HFC-134a Tetrafluoroethane

##### Acute aquatic toxicity

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 450 mg/l, Fish

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: 980 mg/l, Daphnia magna

##### Persistence and degradability

**Persistence and degradability** The degradability of the product is not known.

##### Bioaccumulative potential

**Bio-Accumulative Potential** No data available on bioaccumulation.

**Partition coefficient** No information available.

#### Ecological information on ingredients.

##### HFC-134a Tetrafluoroethane

**Partition coefficient** Pow: 1.06

##### Mobility in soil

**Mobility** The product contains volatile organic compounds (VOCs) which will evaporate easily from all surfaces.

##### Other adverse effects

**Other adverse effects** None known.

### 13. Disposal considerations

#### Waste treatment methods

**General information** The generation of waste should be minimized or avoided wherever possible. Reuse or recycle products wherever possible. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered. Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers or liners may retain some product residues and hence be potentially hazardous.

**Disposal methods** Do not empty into drains. Empty containers must not be punctured or incinerated because of the risk of an explosion. Dispose of surplus products and those that cannot be recycled via a licensed waste disposal contractor. Waste, residues, empty containers, discarded work clothes and contaminated cleaning materials should be collected in designated containers, labeled with their contents.

### 14. Transport information

**DOT transport notes** As supplied, this product is consigned under the Limited Quantities provisions.

#### UN Number



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UN No. (IMDG) 1950

UN No. (ICAO) 1950

### UN proper shipping name

Proper shipping name (TDG) LIMITED QUANTITY

Proper shipping name (IMDG) UN1950 AEROSOLS, NON-FLAMMABLE, 2.2, LIMITED QUANTITY

Proper shipping name (ICAO) UN1950 AEROSOLS, NON-FLAMMABLE, 2.2, LIMITED QUANTITY

Proper shipping name (DOT) LIMITED QUANTITY

### Transport hazard class(es)

IMDG Class 2.2

ICAO class/division 2.2

### Packing group

ICAO packing group Not Applicable

### Environmental hazards

Environmentally Hazardous Substance

No.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable. No information required.

## 15. Regulatory information

**Guidance** Workplace Exposure Limits EH40.  
Introduction to Local Exhaust Ventilation HS(G)37.

### US Federal Regulations

**SARA Section 302 Extremely Hazardous Substances Tier II Threshold Planning Quantities**

None of the ingredients are listed or exempt.

**CERCLA/Superfund, Hazardous Substances/Reportable Quantities (EPA)**

None of the ingredients are listed or exempt.

**SARA Extremely Hazardous Substances EPCRA Reportable Quantities**

None of the ingredients are listed or exempt.

**SARA 313 Emission Reporting**

None of the ingredients are listed or exempt.

**CAA Accidental Release Prevention**

None of the ingredients are listed or exempt.

**FDA - Essential Chemical**

None of the ingredients are listed or exempt.

**FDA - Precursor Chemical**

None of the ingredients are listed or exempt.

**SARA (311/312) Hazard Categories**

None of the ingredients are listed or exempt.

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### OSHA Highly Hazardous Chemicals

None of the ingredients are listed or exempt.

### US State Regulations

#### California Proposition 65 Carcinogens and Reproductive Toxins

None of the ingredients are listed or exempt.

#### California Air Toxics "Hot Spots" (A-I)

None of the ingredients are listed or exempt.

#### California Air Toxics "Hot Spots" (A-II)

None of the ingredients are listed or exempt.

#### California Directors List of Hazardous Substances

None of the ingredients are listed or exempt.

#### Massachusetts "Right To Know" List

None of the ingredients are listed or exempt.

#### Rhode Island "Right To Know" List

None of the ingredients are listed or exempt.

#### Minnesota "Right To Know" List

All the ingredients are listed or exempt.

#### *HFC-134a Tetrafluoroethane*

Present.

#### New Jersey "Right To Know" List

None of the ingredients are listed or exempt.

#### Pennsylvania "Right To Know" List

None of the ingredients are listed or exempt.

### Inventories

#### Canada - DSL/NDSL

DSL

#### US - TSCA

Present.

#### US - TSCA 12(b) Export Notification

Not listed.

### 16. Other information

## FOD - STICKLERS OPTIC GRADE DUST and PARTICLE REMOVER

|   |   |
|---|---|
| <b>Abbreviations and acronyms used in the safety data sheet</b> | <p>TDG: The transport of dangerous goods act</p> <p>IATA: International air transport association.</p> <p>ICAO: Technical instructions for the safe transport of dangerous goods by air.</p> <p>IMDG: International maritime dangerous goods.</p> <p>CAS: Chemical abstracts service.</p> <p>ATE: Acute toxicity estimate.</p> <p>LC<sub>50</sub>: Lethal concentration to 50 % of a test population.</p> <p>LD<sub>50</sub>: Lethal dose to 50% of a test population (median lethal dose).</p> <p>EC<sub>50</sub>: 50% of maximal effective concentration.</p> <p>PBT: Persistent, bioaccumulative and toxic substance.</p> <p>vPvB: Very persistent and very bioaccumulative.</p> |
| <b>Classification abbreviations and acronyms</b>                | Aerosol = Aerosol   |
| <b>Training advice</b>  | Only trained personnel should use this material.  |
| <b>Revision comments</b>  | NOTE: Lines within the margin indicate significant changes from the previous revision.  |
| <b>Revision date</b>  | 1/23/2019   |
| <b>Revision</b>   | 42  |
| <b>Supersedes date</b>  | 1/23/2019   |
| <b>SDS No.</b>  | AEROSOL - FOD   |
| <b>SDS status</b>   | Approved.   |
| <b>Hazard statements in full</b>                                | H280 Contains gas under pressure; may explode if heated.  |

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.