1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Catalog Number: 199518
Product name: XANTHINE OXIDASE
Synonyms: E.C. 1.2.3.2

Supplier: MP Biomedicals, LLC
Parc d'Innovation
BP 50067
67402 ILLKIRCH CEDEX
France

Emergency telephone number: "n° ORFILA" (01-45-42-59-59)

2. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS Number</th>
<th>Weight %</th>
<th>EC No.</th>
<th>Classification</th>
<th>Notes</th>
<th>Annex No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>XANTHINE OXIDASE</td>
<td>9002-17-9</td>
<td>&gt; 25%</td>
<td>232-657-6</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>NON-HAZARDOUS BUFFER SALTS</td>
<td>N/A</td>
<td>5 - 10%</td>
<td>--</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

3. HAZARDS IDENTIFICATION

Indication of Danger:
No declaration according to 67/548/EWG

4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Inhalation: Move to fresh air. Call a physician immediately.

Skin contact: Rinse immediately with plenty of water and seek medical advice.

Ingestion: Do not induce vomiting without medical advice.

Eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use dry chemical, CO2, water spray or "alcohol" foam

Specific hazards: Burning produces irritant fumes.

Special protective equipment for firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

Flash point: Not determined
Autoignition temperature: Not determined

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Use personal protective equipment.
Environmental precautions: Prevent product from entering drains.
Methods for cleaning up: Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Storage: -20°C

Handling: Use only in area provided with appropriate exhaust ventilation.
Safe handling advice: Wear personal protective equipment.
Incompatible products: Oxidising and spontaneously flammable products

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation.
Respiratory protection: Breathing apparatus needed only when aerosol, vapor or dust is formed.
Skin and body protection: Usual safety precautions while handling the product will provide adequate protection against this potential effect.
Eye protection: Safety glasses with side-shields
Hand protection: Gloves

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Powder
Formula: Not applicable
Melting point/range: No data available at this time.
Boiling point/range: No Data available at this time.
Density: No data available
Vapor pressure: No data available
Evaporation rate: No data available
Vapor density: No data available
Solubility (in water): Completely miscible
Flash point: Not determined
Autoignition temperature: Not determined

10. STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions.
11. TOXICOLOGICAL INFORMATION

**Product Information**

**Acute toxicity**

<table>
<thead>
<tr>
<th>Components</th>
<th>RTECS Number:</th>
<th>Selected LD50s and LC50s</th>
</tr>
</thead>
<tbody>
<tr>
<td>XANTHINE OXIDASE</td>
<td>RQ8455000</td>
<td>Not Determined</td>
</tr>
<tr>
<td>NON-HAZARDOUS BUFFER SALTS</td>
<td>Not Available</td>
<td>Not Determined</td>
</tr>
</tbody>
</table>

**Chronic toxicity:** Chronic exposure may cause nausea and vomiting, higher exposure causes unconsciousness.

**Local effects:** Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

**Specific effects:** May include moderate to severe erythema (redness) and moderate edema (raised skin), nausea, vomiting, headache.

**Primary irritation:** No data is available on the product itself.

**Carcinogenic effects:** No data is available on the product itself.

**Mutagenic effects:** No data is available on the product itself.

**Reproductive toxicity:** No data is available on the product itself.

12. ECOLOGICAL INFORMATION

**Mobility:** No data available

**Bioaccumulation:** No data available

**Ecotoxicity effects:** No data available

**Aquatic toxicity:** May cause long-term adverse effects in the aquatic environment.

<table>
<thead>
<tr>
<th>Components</th>
<th>U.S. DOT - Appendix B - Marine Pollutant</th>
<th>U.S. DOT - Appendix B - Severe Marine Pollutants</th>
<th>United Kingdom - The Red List:</th>
</tr>
</thead>
<tbody>
<tr>
<td>XANTHINE OXIDASE</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>NON-HAZARDOUS BUFFER SALTS</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>Germany VCI (WGK)</th>
<th>World Health Organization (WHO) - Drinking Water</th>
<th>Ecotoxicity - Fish Species Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>XANTHINE OXIDASE</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>NON-HAZARDOUS BUFFER SALTS</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>Ecotoxicity - Freshwater Algae Data</th>
<th>Ecotoxicity - Microtox Data</th>
<th>Ecotoxicity - Water Flea Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>XANTHINE OXIDASE</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>NON-HAZARDOUS BUFFER SALTS</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>EPA - ATSDR Priority List</th>
<th>EPA - HPV Challenge Program Chemical List</th>
<th>California - Priority Toxic Pollutants</th>
</tr>
</thead>
<tbody>
<tr>
<td>XANTHINE OXIDASE</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>NON-HAZARDOUS BUFFER SALTS</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>
13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.

Contaminated packaging:

Do not re-use empty containers

14. TRANSPORT INFORMATION

UN/Id No: Not a dangerous good.

ADR/RID

Proper shipping name: Not Regulated

IMDG/IMO

Proper shipping name: Not Regulated

ICAO/IATA

Proper shipping name: Not Regulated

15. REGULATORY INFORMATION

Indication of Danger:

No declaration according to 67/548/EWG

<table>
<thead>
<tr>
<th>Components</th>
<th>EU EINECS List</th>
<th>Germany TA-Luft List</th>
<th>Germany VCI (WGK)</th>
<th>Switzerland Giftliste</th>
</tr>
</thead>
<tbody>
<tr>
<td>XANTHINE OXIDASE</td>
<td>232-657-6</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
<tr>
<td>NON-HAZARDOUS BUFFER SALTS</td>
<td>Not Present</td>
<td>Not Listed</td>
<td>Not Listed</td>
<td>Not Listed</td>
</tr>
</tbody>
</table>

Classification according to VbF: -

16. OTHER INFORMATION

Prepared by: Health & Safety
Disclaimer: The information and recommendations contained herein are based upon tests believed to be reliable. However, MP Biomedicals does not guarantee the accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage maybe required. MP Biomedicals assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

End of Safety Data Sheet