Safety Data Sheet (SDS) for Polycaprolactone Microspheres

1. Identification

Product Name: Polycaprolactone microspheres (PCL-MPs)
Chemical Name: Polycaprolactone
CAS Number: 29005-45-6
Intended Use: Biomedical applications, tissue engineering, drug delivery systems, research.
Manufacturer Information:
Name: Tissuerex
Address: Hermann-Löns-Straße, Baiersdorf, 91083, Deutschland
Email: tissurex@gmail.com

2. Hazard Identification

Classification: Non-hazardous material under normal conditions of use.
Signal Word: Not applicable.
Hazards:
- Not classified as dangerous for human health or the environment.

Precautionary Statements:
- Avoid inhalation of fine particles if material is processed into powder form.
- Handle in a well-ventilated area.

3. Composition/Information on Ingredients

Chemical Composition: Polycaprolactone
Chemical Formula: $(C_6H_{10}O_2)_n$
CAS Number: 29005-45-6

4. First-Aid Measures

Inhalation: If inhaled, remove the individual to fresh air. Seek medical attention if symptoms persist.
Skin Contact: Not expected to be harmful. Wash with soap and water. Seek medical attention if irritation develops.
Eye Contact: Rinse eyes thoroughly with water. If irritation persists, seek medical advice.
Ingestion: Not expected to be harmful. Rinse mouth and drink water. Seek medical advice if discomfort occurs.

5. Fire-Fighting Measures

Suitable Extinguishing Media: Water spray, foam, dry chemical, or CO_2.
Special Hazards: Combustion may produce carbon monoxide (CO) and carbon dioxide (CO_2).
Protective Equipment: Wear self-contained breathing apparatus and full protective clothing.

6. Accidental Release Measures

Personal Precautions: Avoid dust formation. Ensure adequate ventilation.
Cleanup Methods: Sweep or vacuum spilled material and place in suitable disposal container. Avoid creating dust.

7. Handling and Storage

Handling:
- Use in a well-ventilated area.
- Avoid inhalation of dust and contact with eyes or skin.

Storage:
- Store in a cool, dry place away from direct sunlight and moisture.
- Keep container tightly closed.

8. Exposure Controls/Personal Protection

Exposure Limits: Not applicable.
Engineering Controls: Use local exhaust ventilation if dust is generated.
Personal Protective Equipment (PPE):
- Eye Protection: Safety glasses.
- Skin Protection: Protective gloves.
- Respiratory Protection: Dust mask if processing generates airborne particles.

9. Physical and Chemical Properties

Appearance: Solid, white.
Odor: Odorless.
pH: Neutral.
Melting Point: ~60°C.
Boiling Point: Not applicable.
Solubility: Insoluble in water.

10. Stability and Reactivity

Chemical Stability: Stable under normal conditions.
Conditions to Avoid: Excessive heat, open flames, and moisture.
Incompatible Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

11. Toxicological Information

Acute Toxicity: Non-toxic under normal conditions.
Skin Irritation: Not expected to cause irritation.
Eye Irritation: Not expected to cause irritation.
Inhalation: Fine dust may cause respiratory discomfort.

12. Ecological Information

Environmental Impact: Biodegradable under natural conditions.
Aquatic Toxicity: Not expected to pose significant hazards.

13. Disposal Considerations

Dispose of waste material in accordance with local, regional, and national regulations.

14. Transport Information

UN Number: Not applicable.
Transport Hazard Class: Not classified as hazardous for transport.

15. Regulatory Information

Compliant with local and international regulations for non-hazardous materials.

16. Other Information

Revision Number: 1.0
Disclaimer: The information provided is based on current knowledge and is intended to describe the product for health, safety, and environmental purposes only.