1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product name: PLE₅₀
Supplier: Alamanda Polymers, Inc.
Address: 1031 Putman Drive, Suite A
         Huntsville, AL 35816 (USA)

Emergency phone: 1-877-257-6597       Fax: 1-256-489-4529

2. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>CAS#</th>
<th>Chemical name</th>
<th>Percent</th>
<th>EINECS/ELINCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>26247-79-0</td>
<td>Poly(L-glutamic acid sodium salt)</td>
<td>90-100</td>
<td>Unlisted</td>
</tr>
</tbody>
</table>

No ingredients are hazardous according to OSHA criteria.
No components need to be disclosed according to applicable regulations.

3. HAZARD IDENTIFICATION

Classification of the substance or mixture: Not a hazardous substance or mixture
GHS Label elements, including precautionary statements: Not a hazardous substance or mixture
Hazards not otherwise classified (HNOC) or not covered by GHS: None

EMERGENCY OVERVIEW

Potential Health Effects
Eye: May cause pain and conjunctival irritation
Skin: May cause pain and swelling on prolonged contact
Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea
Inhalation: May cause irritation to mucous membranes and upper respiratory tract system
Chronic effects: Prolonged exposure may cause eye irritation. Exposure may affect cell growth rate and morphology.
Carcinogenicity: NPT
IARC: Not listed
OSHA: Not regulated

4. FIRST AID MEASURES

Eyes: In case of eye contact, flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. If irritation develops, seek medical attention.
Skin: In case of skin contact, wash skin with plenty of soap and water. Seek medical attention if irritation develops or persists.
Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.
Inhalation: If inhalation occurs, remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention if cough or other symptoms appear.
Notes to physician: Treat symptomatically and supportively.

5. FIRE-FIGHTING MEASURES

General information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.
Extinguishing media: In case of fire, use water, dry chemical, chemical foam, or alcohol-resistant foam.
Special hazards: Nature of decomposition not known
Flash point: Not determined
Autoignition temperature: Not available
Explosion limits, lower/upper: Not available
NFPA rating: (estimated) Health: 0; Flammability: 1; Instability: 0

6. ACCIDENTAL RELEASE MEASURES

General information: Avoid dust formation, breathing vapors, mist, or gas.
Large spills: Sweep up with a broom or shovel up, and then place in a chemical waste container. Clean spill area with soap and water.
Small spills: Sweep up with a broom, or collect by a vacuum cleaner. Clean spill area with soap and water.
7. HANDLING AND STORAGE

Handling: Provide for appropriate ventilation in places where dust is formed, and wash thoroughly after handling. Avoid contact with eyes, skin, and clothing. Keep product container tightly closed.
Storage: Store under argon, protect from light, and keep below -15°C.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components: Contains no substances with occupational exposure limit values
Engineering controls: General industrial hygiene

PERSONAL PROTECTION

Respiratory protection: Respiratory protection is not required. If protection from nuisance levels of dust is required, use type N95 (US) or P1 (EN 143) dust masks. If desired, use NIOSH (US)/CEN (EU) approved respirator.
Skin protection: Handle with gloves that are inspected prior to use. Use proper glove removal techniques to avoid contact with skin. Dispose of gloves in accordance with applicable laws and good laboratory practices.
Eye protection: Use glasses/goggles for eye protection tested and approved under appropriate government standards.
Additional clothing and/or equipment: Safety shower and eye bath

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and physical state: White or faint-yellow solid or powder
Odor (threshold): Slight
Specific gravity (H₂O=1): Not determined
Vapor pressure (mm Hg): Not determined
Vapor density (air=1): Not determined
Percent volatile by volume: Not determined
Evaporation rate (butyl acetate=1): Not determined
Boiling point: Not determined
Freezing point / melting point: Not determined
pH: Not determined
Solubility in water: Not determined
Relative density: Not determined
Partition coefficient (n-octanol/water): Not determined
Auto-ignition temperature: Not determined
Decomposition temperature: Not determined
Viscosity: Not determined
Explosive properties: Not determined
Oxidizing properties: Not determined
10. STABILITY AND REACTIVITY

Reactivity: Not determined
Stability: Stable under recommended storage conditions
Conditions to avoid: Strong oxidizing agents, open flames, high temperature, moisture, and light
Incompatibility: Strong oxidizing agents and strong acids
Hazardous decomposition products: Not determined
Hazardous polymerization: Will not occur

11. TOXICOLOGICAL INFORMATION

Acute toxicity: Not determined
Oral effects: Not determined
Dermal effects: Not determined
Inhalation/respiratory effects: Not determined
Ocular effects: Not determined
Germ cell mutagenicity: Not determined
Carcinogenicity: (See below)
IARC -- No components of this product present at levels greater than or equal to 0.1% are identified as probable, possible, or confirmed human carcinogen by IARC.
ACGIH -- No components of this product present at levels greater than or equal to 0.1% are identified as a carcinogen or potential carcinogen by ACGIH.
NTP -- No components of this product present at levels greater than or equal to 0.1% are identified as a known or anticipated carcinogen by NTP.
OSHA -- No components of this product present at levels greater than or equal to 0.1% are identified as a carcinogen or potential carcinogen by OSHA.
Reproductive effects: Not determined
Specific target organ effects (single exposure): Not determined
Specific target organ effects (repeated exposure): Not determined
Aspiration Hazard: Not determined

12. ECOLOGICAL INFORMATION

No data are available on the toxicity, persistence and degradability, bioaccumulation potential, mobility in soil, or assessment of PBT/vPvB of this material.

13. DISPOSAL CONSIDERATIONS

Waste disposal method: Waste must be disposed of in accordance with federal, state, and local environmental control regulations. Offer surplus and non-recyclable solutions to a licensed disposal company.
14. TRANSPORT INFORMATION

DOT (US): Not a dangerous good
IMDG: Not a dangerous good
IATA: Not a dangerous good

15. REGULATORY INFORMATION

SARA 302 Components: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312 Hazards: No SARA Hazards
Massachusetts Right to Know Components: No Components are subject to the Massachusetts Right to Know Act.
Pennsylvania & New Jersey Right to Know Components: Poly(L-glutamic acid sodium salt), CAS#26247-79-0
California Prop. 65 Components: This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

HMIS Rating
Health hazard: 0
Chronic health hazard: Not determined
Flammability: 0
Physical hazard: 0

NFPA Rating
Health hazard: 0
Fire hazard: 0
Reactivity hazard: 0

Disclaimer: Alamanda Polymers, Inc. makes no warranty of any kind regarding the information furnished herein. Users should independently determine the suitability and completeness of information from all sources. While this data is presented in good faith and believed to be accurate, it should be considered only as a supplement to other information gathered by the User. It is the User's responsibility to assure the proper use and disposal of these materials as well as the safety and health of all personnel who may work with or otherwise come in contact with these materials.

NON-HAZARDOUS MATERIAL; APPROVED FOR AIR TRANSPORT

Copyright 2015 Alamanda Polymers, Inc.