Section 1: Product and Company Identification

Product Name: ADDOVATE® ZL PWD 66D
Article Number: 1569922
Product Code: 220660
Chemical Family: Crosslinked Polystrene Sulfonic Acid
Chemical Name: Styrene divinylbenzene copolymer with sulphonic acid groups in H-form
CAS Number: 68037-26-3

Section 2: Composition/Information on Ingredients

HAZARDOUS INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient Name/ CAS Number</th>
<th>Exposure Limits</th>
<th>Concentration</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Styrene Copolymer with Divinylbenzene, Sulfonated 68037-26-3</td>
<td>OSHA (PEL): Not Established</td>
<td>OSHA (PEL): 0%</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Section 3: Hazards Identification

EMERGENCY OVERVIEW

WARNING! Non-regulated. Color: Light Tan  Form: Solid Powder  Odor: Odorless Inhalation may cause nausea or dizziness. Causes skin irritation. Causes eye burns. May cause blindness. May be harmful if swallowed. Ground containers and equipment before transferring to avoid static sparks. This material can form dust-air mixtures that may be an explosion hazard when exposed to ignition sources or high temperature! Toxic gases/fumes are given off during burning or thermal decomposition.
POTENTIAL HEALTH EFFECTS

Route(s) of Entry: Inhalation, Skin Contact, Eye Contact

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

General Effects of Exposure
Acute Effects of Exposure: It is expected that this product will be irritating to the respiratory tract resulting in coughing, dizziness, sore throat, and headache. Animal testing indicates that severe irritation and corrosion may occur if material is introduced into the eyes. Direct contact with eyes may cause tearing, burns, severe pain, and possibly permanent eye damage. This product may be irritating to the skin with symptoms of redness and itching. Ingestion of this product may irritate the mouth, throat and stomach causing nausea, diarrhea and vomiting. Gases and fumes evolved during thermal processing or decomposition of this material may cause irritation to the upper respiratory tract. Irritation of the respiratory tract may result in discomfort, and coughing.

Chronic Effects of Exposure: None reported for this product as a whole. Effects are expected to be similar to those listed for acute human health effects.

Carcinogenic Components:
NTP: None
IARC: None
OSHA: None

Medical Conditions Aggravated by Exposure: None reported for this product as a whole. May aggravate an existing dermatitis, eye condition, respiratory disorder or other allergic reactions due to mechanical irritation.

Section 4: First Aid Measures

First Aid for Eye: In case of contact, flush eyes with large quantities of water for at least 15 minutes. The eyelids should be held apart during irrigation to ensure thorough flushing of all eye tissue. Call a physician immediately.

First Aid for Skin: Wash clothing and clean shoes before reuse. Immediately remove contaminated clothing and shoes. In case of skin contact, wash affected areas with soap and water. Get medical attention if irritation develops or persists.

First Aid for Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.

First Aid for Ingestion: If material is ingested, do not induce vomiting unless directed to do so by medical personnel. Should vomiting occur, keep patients head
below hip level to prevent aspiration of fluid into the lungs. Call a physician immediately.

First Aid Other: If ingested, immediately rinse mouth out with plenty of water.

Note to Physician: Treat symptomatically.

### Section 5: Fire Fighting Measures

**Flammable Limits:**
- **Upper Explosion Limit (UEL %):** Not Established
- **Lower Explosion Limit (LEL %):** Not Established
- **Auto-ignition Temperature:** > 482 °F (> 250 °C) DIN 51794

**Extinguishing Media:**
- **Suitable:** All extinguishing media are suitable.

**Special Fire Fighting Procedures:**
A solid stream of water directed into the burning material could spread the fire. Evacuate non-emergency personnel to a safe area. Full emergency equipment with self-contained breathing apparatus and full protective clothing should be worn by firefighters. Use cold water spray to cool fire exposed containers. During a fire, irritating and toxic gases may be generated by thermal decomposition or combustion. Hydrogen sulfide (H2S) formation is possible after prolonged heating.

**Unusual Fire/Explosion Hazards:**
Dusts at sufficient concentrations can form explosive mixtures with air.

### Section 6: Accidental Release Measures

**Spill or Leak Procedures:**
Extinguish all ignition sources. Keep unnecessary personnel out of spill area. Emergency clean-up personnel should wear appropriate protection when entering the spill area for clean-up. Remove mechanically by method which minimizes generation of airborne dust, and place in appropriately marked containers for disposal. Do not allow spilled or released material to enter ground water, waste water or soil.

### Section 7: Handling and Storage

**Storage Temperature:**
- **Minimum:** 14 °F (-10 °C)
- **Maximum:** 104 °F (40 °C)

**Shelf Life:** 22 Months
Special Sensitivity: Moisture and incompatible materials.

Handling/Storage Precautions: Keep away from heat, sparks and flames. Store in a dry place away from excessive heat. Keep container tightly closed when not in use. All handling equipment should be properly grounded to prevent the build-up of electrostatic charges. Storage area should be equipped with sprinkler system. Handle in accordance with good industrial hygiene and safety practices. Do not get in eyes. Do not get on skin or clothing. Avoid breathing dust.

Section 8: Exposure Controls / Personal Protection

Personal Protection Equipment

Eye Protection Requirements: Chemical safety goggles.

Skin Protection Requirements: Permeation resistant gloves (neoprene, nitrile, or PVC) and impervious clothing (long sleeve shirts) are recommended.

Ventilation Requirements: Use local exhaust ventilation if dusting or misting is a problem, to maintain air levels below the recommended exposure limit.

Respirator Requirements: Air purifying respirator equipped with a full-face organic vapor and dust/mist cartridge if vapors are near or exceeding the exposure limits listed in Section 2. An organic vapor cartridge should be used if ventilation is not sufficient to control fumes released during thermal processing. Observe OSHA regulations for respirator use (29 CFR 1910.134.)

Additional Protective Measures: Emergency showers and eye wash stations should be available. Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees on the safe use and handling of this product.

Section 9: Physical and Chemical Properties

Physical Form: Solid
Appearance: Powder
Color: Light Tan
Odor: Odorless
pH: Approximately 1
Boiling Point: Not Applicable
Melting/Freezing Point: Not Applicable
Viscosity: Not Applicable
Solubility in Water: Insoluble
Specific Gravity: Approximately 0.45
Bulk Density: 9.98 lb/gal
Vapor Pressure: Not Applicable

Section 10: Stability and Reactivity
Stability: Stable
Hazardous Polymerization: Will not occur
Substances to Avoid: Water, alkalies, metals and oxidizing materials
Conditions to Avoid: Avoid contact with water and high temperatures.
Decomposition Temperature: Not Established
Decomposition Products: By fire and/or thermal decomposition: oxides of sulfur, hydrogen sulfide, oxides of carbon, and other undetermined aliphatic fragments.

Section 11: Toxicological Information

Toxicity Data for ADDOVATE® ZL PWD 66D
Toxicity Note: No data available for this product.

Toxicity Data for Styrene Copolymer with Divinylbenzene, Sulfonated
Toxicity Note: No data available for this component.

Section 12: Ecological Information

Ecological Data for ADDOVATE® ZL PWD 66D
Ecological Note: No data available for this product.

Ecological Data for Styrene Copolymer with Divinylbenzene, Sulfonated
Ecological Note: No data available for this component.

Section 13: Disposal Considerations

Waste Disposal Method: Disposal must be in compliance with federal, state and local environmental control regulations. If incinerated, toxic and corrosive combustion gases must be properly handled.

Empty Container Precautions: Empty container retains product residue and can be hazardous. Label precautions also apply to this container when empty.

Section 14: Transportation Information

Technical shipping name: Crosslinked Polystrene Sulfonic Acid

Freight Class
Material Name: ADDOVATE® ZL PWD  66D  Article Number: 1569922

Bulk: Chemicals, N.O.I. (NMFC 60000)
Package: Chemicals, N.O.I. (NMFC 60000)

Product Label: Product Label Established

Domestic Surface Transportation (DOT)
Hazard Class or Division: Non-Regulated

Marine Transportation (IMO / IMDG)
Hazard Class Division: Non-Regulated
Number:

Air Transportation (ICAO / IATA)
Hazard Class Division: Non-Regulated
Number:

Section 15: Regulatory Information

United States Federal Regulations

OSHA Hazcom Standard Rating: Hazardous

TSCA Inventory List: On TSCA Inventory

CERCLA Hazardous Substance:
Component(s) Reportable Quantity
None

SARA Title III
SARA Section 302 Extremely Hazardous Substances:
Component(s)/ Concentration
CAS Number Min. Max.
None

SARA Section 311/312 Hazard Categories: Immediate Health Hazard, Delayed Health Hazard

SARA Section 313 Toxic Chemicals:
Component(s)/ Reporting Concentration
CAS Number Threshold Min. Max.
None

RCRA Status: If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.
State Right-to-Know Information

<table>
<thead>
<tr>
<th>Component(s)/ Concentration</th>
<th>CAS Number</th>
<th>State Code</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Styrene Copolymer with Divinylbenzene, Sulfonated</td>
<td>68037-26-3</td>
<td>PA-N, NJ-N</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

State Code Translation Table
PA-N = Pennsylvania Non-hazardous
NJ-N = New Jersey Other - includes predominant ingredients

Section 16: Other Information

HMIS Rating

<table>
<thead>
<tr>
<th>Health</th>
<th>* 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>1</td>
</tr>
<tr>
<td>Reactivity</td>
<td>0</td>
</tr>
</tbody>
</table>

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe
*=Chronic Health Hazard

RHEIN CHEMIE CORPORATION’s method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by RHEIN CHEMIE CORPORATION as a customer service.

Contact: HES Dept.
Phone: (440) 285-3547
MSDS Number: R36230
Version Date: 04/15/2008
MSDS Version: 1.16

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Indicates Relevant Change Made.