SCIENTIFIC POLYMER PRODUCTS, INC.
MATERIAL SAFETY DATA SHEET

Effective Date: 10/09  Catalog Number: 1027
Revision Date: N/A  Page Number: 1

Scientific Polymer urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; 2) Furnish this same information to each of its customers for the product; 3) Request its customers to notify their employees, customers, and other users of the product of this information.

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Poly(acrylic acid)

CAS Number: 9003-01-4  Molecular Formula: (C₃H₄O₂)ₓ

Manufacturer Information:
Scientific Polymer Products  Non-Emergency Phone Number: 585/265-0413
6265 Dean Parkway  Emergency Phone Number (24 hrs): 1-800-255-3924 (CHEM TEL)
Ontario, NY 14519  Website: www.scientificpolymer.com

SECTION 2. COMPOSITION AND INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly(acrylic acid)</td>
<td>9003-01-4</td>
<td>99</td>
</tr>
<tr>
<td>Benzene</td>
<td>71-43-2</td>
<td>0.297</td>
</tr>
</tbody>
</table>

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

SECTION 3. HAZARDS IDENTIFICATION

Emergency Overview:
As supplied, this product is not expected to cause any adverse physical effects.

Acute Health Effects:
Powder/dust eye irritation is a physical, not a chemical effect. Solid particles on the eye (powder/dust) may cause pain and be accompanied by irritation. Dust inhalation may cause coughing, mucous production and shortness of breath.
Chronic Health Effects:
Contact dermatitis may occur in individuals under extreme conditions of prolonged and repeated contact, high exposure and temperature, and occlusion (held onto the skin) by clothing. No evidence of adverse lung effects from polyacrylate dust exposure was observed in studies of workers. Neither lower airway symptoms, chronic parenchymal disease, radiographic changes, nor clinically important effects on lung function were found to result from polyacrylate exposure. Only a small increase in upper respiratory symptoms appeared to be related to exposure. However, various lung effects such as inflammation, hyperplasia (abnormal increases in the number of cells composing a tissue or organ), scarring (fibrosis), changes in the air sac (alveolar) ducts of the lung, and tumors were noted in laboratory studies with rodents inhaling concentrations of a water absorbent sodium polyacrylate dust greater than 0.05 mg/m2 for the majority of their lives. Furthermore, some lung or lung cell effects were found in rodent laboratory studies of shorter duration. BENZENE: May cause liver, kidney and brain damage. Chronic overexposure may result in various blood changes including anemia with the abnormal bleeding, bone marrow aplasia and acute myelogenous leukemia. Chromosomal aberrations in humans have been reported.

Medical Conditions Aggravated by Exposure:
Pre-existing skin problems may be aggravated by prolonged or repeated contact. Pre-existing respiratory disease(s) may be aggravated by prolonged or repeated inhalation of airborne dust, individuals with pre-existing medical conditions including diseases of the heart, lung, kidney, liver, nervous system, or the blood, and those susceptible to dermatitis should avoid exposure to this material.

Carcinogenic Status:
BENZENE: IARC Group 1; OSHA – Regulated as a carcinogen; NTP – Known carcinogen; ACGIH – A1

Reproductive Effects: None expected

SECTION 4. FIRST AID MEASURES

INHALATION:
If any processing vapors, decomposition products or particulates are inhaled, remove individual(s) to fresh air. Provide protection before allowing reentry.

EYE CONTACT:
Immediately flush eyes with plenty of one percent (1%) physiological saline for five minutes while holding eyelids open; see a physician. If no saline is easily available, flush eyes with plenty of clean water for 15 minutes; see a physician. Water (moisture) swells this product into a gelatinous film and, when in contact with the eye, may be difficult to remove using only water.

SKIN CONTACT: Wash the affects area thoroughly with plenty of soap and water.

INGESTION: No ingestion effects known. Treat symptomatically.
SECTION 5. FIRE FIGHTING MEASURES

Flash Point/Method: N/A  Autoignition Temperature: N/A
Flammable Limits:  UFL: N/A  LFL: N/A

Fire and Explosive Properties:
Typical results expected for this family of products:
Minimum explosive concentration: 0.13 oz/ft³ (130 g/m³)
Minimum ignition energy: 1.60 joules (dispersed dust cloud)
Deflagration Index, Kst (estimate): 130 bar m/sec
Volume resistivity: 3.24 x 10+16 ohm-cm
Maximum rate of pressure rise: 5,500 psi @ 0.5 oz/ft³ (380 bars @ 500 g/m³)
Maximum explosion pressure: 70 psi @ 0.5 oz/ft³ (4.8 bars @ 500 g/m³)
Ignition temperature of dust cloud: 968°F
National Electrical Code (NFPA 70): Group G dust

This product has a high volume resistivity and a propensity to build up static electricity which may be discharged as a spark. A spark can be an ignition source for solvent vapor/air mixtures. If you add this product to a solvent, ensure appropriate safe handling practices such as provision for inerting flammable vapors and measures such as those cited above. As with all organic dusts, fine particles suspended in air in critical proportions and in the presence of an ignition source may ignite and/or explode. Dust may be sensitive to ignition by electrostatic discharge, electrical arcs, sparks, welding torches, cigarettes, open flame, or other significant heat sources. As a precaution, implement standard safety measures for handling finely divided organic powders.

Extinguishing Media:
Use water spray, dry chemical or foam. Carbon dioxide may be ineffective on larger fires due to lack of cooling capacity which may result in reignition.

Fire Fighting Procedures:
Avoid hose streams or any method which will create dust clouds. Wear self-contained breathing apparatus (SCBA) equipped with a full facepiece and operated in a pressure-demand mode (or other positive pressure mode) and approved protective clothing. Personnel without suitable respiratory protection must leave the area to prevent significant exposure to hazardous gases from combustion, burning or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting procedures.

Unusual Fire & Explosion Hazards: None known

SECTION 6. ACCIDENTAL RELEASE MEASURES

Using care to avoid dust generation, vacuum or sweep into a closed container for disposal. DO NOT sweep or flush spilled product into public sewer, streams or other water systems. If inhalation of dust cannot be avoided, wear a particulate respirator approved by NIOSH/MSHA. CAUTION: Contact with water creates a slippery film. If this occurs, the film can be cleaned-up with detergent solution.
SECTION 7. HANDLING AND STORAGE

Handling:
Do not get in eyes. Do not ingest, taste, or swallow. Use under well-ventilated conditions. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities. Avoid repeated or prolonged skin contact. Avoid routine inhalation of dust of any kind. Exercise care when emptying containers, sweeping, mixing or doing other tasks which can create dust.

Although the risk of a dust explosion is low, as a precaution, implement the following safety measures: Eliminate ignition sources (e.g., sparks, static buildup, excessive heat, etc). Bond, ground and properly vent conveyors, dust control devices and other transfer equipment. Prohibit flow of polymer, powder or dust through non-conductive ducts, vacuum hoses or pipes, etc.; only use grounded, electrically conductive transfer lines when pneumatically conveying product. Prevent accumulation of dust (e.g., well-ventilated conditions, promptly vacuuming spills, cleaning overhead horizontal surfaces, etc.).

Storage: Store in a dry area. Keep containers closed when not in use.

SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE LIMITS:
We recommend an 8-hour TWA exposure limit of 0.05 mg/m3 for the polymer in this product.

BENZENE:
ACGIH-TWA: 0.50 ppm(s); ACGIH-STEL: 2.50 ppm(s); OSHA-TWA: 1.00 ppm; OSHA-STEL: 5.00 ppm

Personal Protective Equipment:
RESPIRATOR: If respirable dust exposures exceed 0.05 mg/m3 (8-hour TWA), wear a NIOSH approved respirator equipped with high efficiency particulate (HEPA) filters. Use respirator in accordance with manufacturer’s use limitations and OSHA standard 1910.134 (29 CFR). EYE/FACE: Wear goggles for keeping dust out of eyes. SKIN: Wear protective gloves.

Engineering Controls:
Always provide effective general and, when necessary, local exhaust ventilation to draw dust away from workers to prevent routine inhalation. Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in this MSDS.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Powder
Odor: Slightly acidic

Approximate Mw: 2,000
Refractive Index: nD 1.527
Specific Gravity: 1.41
Solubility in Water: Soluble
NOTE: This polymer is a solid material (powder) that is virtually always processed in a liquid mixture. The typical and maximum amounts of benzene in a liquid mixture which contains two percent (2%) of this product till be 0.001-0.006% (10-60 ppm) and 0.01% (100 ppm), respectively.

SECTION 10. STABILITY AND REACTIVITY

Stability: Stable
Hazardous Polymerization: Will not occur

Conditions to Avoid: None known

Incompatibilities:
Heat may be generated if polymer comes in contact with strong basic materials such as ammonia, sodium hydroxide, potassium hydroxide or strongly basic amines. Precautions beyond those described herein, such as chemical splash goggles or protective clothing, must be considered as the need exists.

Hazardous Decomposition Products:
Carbon monoxide, carbon dioxide, hydrocarbons and irritating vapors

SECTION 11. TOXICOLOGICAL INFORMATION

Oral LD50 (rat, adult): >2,500 mg/kg
Dermal LD50 (rabbit, adult): >3,000 mg/kg

96 Hour static acute toxicity: Bluegill, Sunfish, LC50: 580-2,000 mg/L

Chronic Oral Toxicity: No significant effects in rats or dogs fed with resin as 5% of diet for 6-1/2 months.

SECTION 12. ECOLOGICAL INFORMATION

Cross-linked polyacrylic acid polymers in this product are not biodegradable; do not inhibit waste treatment bacteria; and do not pass through typical wastewater treatment to the environment, but are instead removed with the biomass.

96 Hour static acute toxicity: Bluegill, Sunfish, LC50: 580-2,000 mg/L
96 Hour static acute toxicity: Daphnia Magna, LC50: 168-280 mg/L
SECTION 13. DISPOSAL CONSIDERATIONS

Waste Disposal:
DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. SP2 HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION DESCRIBED IN SECTION 2.

SECTION 14. TRANSPORT INFORMATION

DOT INFORMATION:
Proper Shipping Name: Not regulated
Hazard Class: N/A
Packing Group: N/A
UN#: N/A

IATA INFORMATION:
Proper Shipping Name: Not regulated
Hazard Class: N/A
Packing Group: N/A
UN#: N/A

SECTION 15. REGULATORY INFORMATION

This MSDS has been prepared in accordance with the hazard criteria of the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

U.S. Toxic Substances Control Act:
All components of this product are either listed on the U.S. Toxic Substances Control Act (TSCA) inventory of chemicals or are otherwise compliant with TSCA regulations.

U.S. CERCLA – SARA:
SARA Title III Section 312 Hazard Category (40 CFR 311/312): Chronic health hazard

SARA Section 313: This product contains the following toxic chemical(s) subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and 40 CFR 372:
Benzene CAS# 71-43-2

California Proposition 65: WARNING: The following ingredient(s) present in the product are known to the State of California to cause cancer, birth defects and reproductive harm:
Benzene CAS# 71-43-2
The chemical identity of some or all components present is confidential business information (trade secret) and is being withheld as permitted by 29 CFR 1910.1200 (i).

Canadian Domestic Substances List (DSL):
All components are on the Canadian Domestic Substances List (DSL) or are exempt from listing.

Canadian Ingredient Disclosure List:
The following component(s) are on the Canadian Ingredient Disclosure List (WHMIS): Benzene

Canadian WHMIS Class: D2A

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

SECTION: 16. OTHER INFORMATION

HMIS HAZARD RATING

HEALTH: 0
FLAMMABILITY: 1
REACTIVITY: 0
PERSONAL PROTECTION: X

FIRE:
Material that must be preheated before ignition can occur.

HEALTH:
Materials which on exposure under fire conditions would offer no hazard beyond that of ordinary combustible material.

REACTIVITY:
Materials which in themselves are normally stable, even under fire exposure conditions, and which are not reactive with water.

This material is intended for laboratory use only. It is not sold or intended for drug, household or other uses. The information represents the most accurate and complete data currently available to us. However, we make no warranty, express or implied, with respect to such information, and we assume no liability resulting from its use.