



STYRENE GEL STRONG ACID
CATION EXCHANGE RESIN

Material Safety Data Sheet



1. Identification of the substance and of the company/undertaking.

Identification of the substance: Dynamic Resin Chemical Name: Polystyrene sulphonic acid Use of the substance: Ion Exchange, Adsorbent, and/or Catalyst

Cation resin should be stored in its most stable ionic form for long-term storage: Strong Acid Cation (SAC) resin: Should be stored in the sodium form Weak Acid and Weak Base (WAC and WBA) resins: Should be stored in their regenerated forms, such as the hydrogen form for WAC resins and the free base form for WBA resins Here are some other tips for storing cation resin: Store the resin in its original, unopened packaging in a cool, dry area Store the resin in an indoor facility with climate control between 0–40° C (32–105° F) Avoid storing the resin at temperatures below 0° C (32° F) as it can freeze Store the resin in a biological inhibition solution, such as a concentrated NaCl solution, to minimize bacterial growth Cation resin is used in a variety of applications, including water softening, food and beverage processing, pharmaceutical manufacturing, and chemical processing.



2. Hazards Identification

Emergency overview

- Physical state: gold, amber, light brown, dark brown, black, green solid (bead)
- Odor: Not applicable
- Contact with eyes: May cause temporary eye irritation
- Contact with skin: May be slightly irritating to skin

Low hazard for unusual industrial or commercial handling by trained personnel

OSHA regulatory status

- This product is not hazardous according to OSHA 29CFR 1910.1200

Potential health effects

- Inhalation: Limited inhalation hazard at normal work temperatures
- Eye Contact: May cause temporary eye irritation
- Skin Contact: May be slightly irritating to skin
- Ingestion: Under normal conditions of intended use, this material does not pose a risk to health However, ingestion may cause irritation and malaise
- Chronic Health Effects: No other specific acute or chronic health impact noted

- Target Organ(s): Eye / Skin - Potential Physical / Chemical Effects: - Potential Physical / Chemical Effects:

This product is a combustible per NFPA Environmental effects

- The environmental hazard of the product is considered limited

3. Composition/information on ingredients

Ingredient	Concentration	CAS Number	R Phrases	Symbol --
Polystyrene sulphonic acid	42-47% 53-	69011-22-9	-----	----- -
Water	58%	7732- 18-5	-----	-----

4. First aid measures

Inhalation

- No specific first aid measures noted

Eye Contact

- Any material that contacts the eye should be washed out immediately with water. If easy to do, remove any contact lenses.

Get medical attention if any discomfort continues

Skin Contact

- Wash skin with soap and water

Ingestion

- Immediately rinse mouth and drink plenty of water (200-300 ml). Large quantities: Get medical attention if irritation persists

5. Fire-fighting measures

Flammable Properties

- NFPA Rating Fire = 1

Extinguishing media

- Extinguish with foam, carbon dioxide, dry powder or water fog

Unsuitable extinguishing media

- Not applicable

Special fire fighting procedures

- Self-contained breathing apparatus and full protective clothing must be worn in case of fire

Unusual fire and explosion hazards

- Not available
- Monomers, residual organics, carbon and sulfur oxides

Protective measures

- Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace



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✓ 6. Accidental release measures

Personal precautions

- Keep people away
- Spillage causes slippery surface

Environmental precautions

- Do not allow to enter public sewers and watercourses

Methods for cleaning up

- Sweep up as much as possible and transfer to plastic containers for recovery or disposal

✓ 7. Handling and storage

7.1 Handling

- Avoid contact with eyes and prolonged skin contact. See section 8 of the MSDS for personal protective equipment

7.2 Storage

- Store at temperatures above 0 °C - Store at temperatures below 40 °C
- Keep in original container - Keep container tightly closed to prevent the loss of water
- Store away from incompatible materials

✓ 8. Exposure controls/personal protection

8.1 Exposure limits

- No exposure limits noted for substances

8.2 Exposure controls

- Provide adequate ventilation

8.2.1 Occupational exposure controls

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Respirator type: High-efficiency particulate respirator.

Eye Protection: Risk of contact: Wear approved safety goggles - Hand Protection: Risk of contact: Wear

protective gloves. Suitable gloves can be recommended by the supplier

Skin Protection: Risk of contact: Use skin protection. It is a good industrial hygiene practice to minimize skin contact

8.2.2 Hygiene Measures

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants

8.2.3 Environmental exposure controls

- Environmental manager must be informed of all major spillages

9. Physical and chemical properties

- Appearance: Gold, amber, light brown, dark brown, black, green beads
- Odor: Odorless
- Odor Threshold: Not available
- Physical State: Solid (bead)
- pH: neutral aqueous slurry
- Melting Point: Not available
- Freezing Point: Not available
- Boiling Point: Not available
- Flash Point: Not available
- Evaporation Rate: Not available - Flammability (solid, gas): Not available
- Flammability Limit - Upper/Flammability Limit
- Lower (%): Not available
- Vapor Pressure: Not available
- Vapor Density (Air=1): Not available - Specific Gravity: 1.15 - 1.20
- Solubility in Water: Insoluble - Solubility (Other): Not available
- Partition Coefficient (n-Octanol/water): Not available - Auto Ignition Temperature: Not available - Decomposition Temperature: Not available

10. Stability and reactivity

10.1 Conditions to avoid

- Considered stable under normal conditions
- Avoid heat

10.2 Materials to avoid

- Incompatible with strong oxidising substances. Contact with strong oxidisers, especially nitric acid, may produce low molecular weight organics that may form explosive mixtures

10.3 Hazardous decomposition products

- At Elevated Temperatures: Benzene compounds, Carbon Oxides, Styrene, Sulfur Oxides

10.4 Possibility of Hazardous Reactions: Not available

11. Toxicological information

Acute toxicity

- No evidence of acute toxicity

Carcinogenicity

- No evidence of carcinogenic effects

Teratogenicity

- No evidence of reproductive effects

Mutagenicity

- No evidence of mutagenic effects

12. Ecological information

12.1 Ecotoxicity

- No data available

12.2 Mobility

- The product is insoluble in water and will sediment in water systems

12.3 Persistence and degradability

- The product is not readily biodegradable

12.4 Bioaccumulative potential

- Potential to bioaccumulate is low

12.5 Other adverse effects

- No data available

13. Disposal considerations

General Information

- Dispose of waste and residues in accordance with local authority requirements

Disposal Methods

- No specific disposal method required

Container

- Since emptied containers retain product residue, follow label warnings even after container is emptied

14. Transport information

- DOT Not regulated
- TDG Not regulated
- IATA Not regulated
- IMDG Not regulated

15. Regulatory information

Canadian Controlled Products Regulations

- This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33, and the MSDS contains all required information

WHMIS Classification

- This is not a WHMIS controlled product

Mexican Dangerous Statement

- This product is not dangerous according to Mexican regulations

Applicable International laws and regulations

- This substance meets the OECD polymer definition and is therefore exempt from REACH registration

Inventory Status

- This product or all components are listed or exempt from listing on the following inventory: TSCA, DSL



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US Regulations

- CERCLA Hazardous Substance List (40 CFR 302.4): Not regulated

SARA Title III

- Section 302 Extremely Hazardous Substances (40 CFR 355, Appendix A): Not regulated
- Section 311/312 (40 CFR 370):

Acute (Immediate) Chronic (Delayed) Fire Reactive Pressure Generating

- Section 313 Toxic Release Inventory (40 CFR 372): Not regulated

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

- Not regulated

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

- Not regulated

Drug Enforcement Act

- Not regulated

TSCA

- TSCA Section 4(a) Final Test Rules & Testing Consent Orders: Not regulated
- TSCA Section 5(a)(2) Final Significant New Use Rules (SNURs) (40CFR 721, Subpt. E): Not regulated
- TSCA Section 5(e) PMN-Substance Consent Orders: Not regulated
- TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D): Not regulated

State Regulations

- California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): Not regulated
- Massachusetts Right-To-Know List: Not regulated
- Michigan Critical Materials List (Michigan Natural Resources and Environmental Protection Act (Act. 451 of 1994)): Not regulated
- Minnesota Hazardous Substances List: Not regulated - New Jersey Right-To-Know List: Not regulated
- Pennsylvania Right-To-Know List: Not regulated - Rhode Island Right-To-Know List: Not regulated



16. Other information

HAZARD RATINGS Health Hazard Fire Hazard Instability Special Hazard
NFPA 1 1 0 0

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

NFPA Label colored diamond code: Blue - Health; Red - Flammability; Yellow - Instability; White - Special Hazards Health Hazard Flammability Physical Hazard Personal Protection

HMIS 1 1 0 --

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

HMIS Label colored bar code: Blue - Health; Red - Flammability; Orange - Physical Hazards; White - Special -Relevant R phrases: R36 Irritating to eyes

Note:

The information provided in this material safety data sheet is based on current knowledge about the product and current legal requirements and standards. It relates specifically to health, safety and environmental requirements and standards, may not identify all hazards associated with the product or its uses or misuses, does not signify any warranty with regard to the properties of the product, and only applies when the product is used for the purposes indicated in section 1. This product is not sold as suitable for other purposes and such other usage may cause risks not mentioned in this safety data sheet.