SAFETY DATA SHEET

POLY AMINES

CAS No.: Proprietary blend (principal reference component: epichlorohydrin-dimethylamine copolymer, CAS 42751-79-1)

This Safety Data Sheet is issued by Suraj Chemicals as the distributor/supplier of record, based on manufacturer and published GHS / regulatory reference data for this substance. Users should also consult the specific manufacturer's SDS where available.

1. IDENTIFICATION

GHS Product identifier

POLY AMINES
Polyamine coagulant (epichlorohydrin-dimethylamine copolymer type), aqueous solution
CAS: Proprietary blend (principal reference component: epichlorohydrin-dimethylamine copolymer, CAS 42751-79-1)

Other means of identification

Not relevant

Recommended use of the chemical and restrictions on use

Relevant uses: Low-to-medium molecular weight cationic coagulant/primary coagulant for municipal and industrial water & wastewater treatment, coagulant aid ahead of polyelectrolyte flocculants, sludge dewatering aid, and de-inking/paper-mill process aid. For industrial user only.

Uses advised against: All uses not specified in this section or in section 7.3. Not for use in direct contact with food/potable water unless the specific grade supplied is certified for that purpose.

Supplier's details

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2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS:

Skin Irrit. 2	Skin irritation, Category 2, H315
Eye Dam. 1 / Eye Irrit. 2	Serious eye damage/eye irritation, H318/H319 (grade-dependent, see Certificate of Analysis)

GHS label elements, including precautionary statements

GHS: Warning

Hazard statements

Skin Irrit. 2: H315 – Causes skin irritation.
Eye Irrit. 2 / Eye Dam. 1: H319/H318 – Causes serious eye irritation / Causes serious eye damage (grade-dependent).

Precautionary statements

P264: Wash hands thoroughly after handling.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352: IF ON SKIN: Wash with plenty of water.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310: Immediately call a POISON CENTER/doctor if eye damage is suspected.
P332+P313: If skin irritation occurs: Get medical advice/attention.

Other hazards which do not result in classification

May contain trace unreacted epichlorohydrin monomer (CAS 106-89-8), a substance classified as Carc. 1B, Muta. 1B, Acute Tox. 3 (oral/dermal/inhalation), Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, STOT RE 2. Residual monomer content is proprietary to the manufacturer and is controlled to low ppm levels typical of the polyamine coagulant industry; it does not alter the product's own overall classification stated above but is disclosed here for transparency. This substance/mixture does not meet the PBT/vPvB criteria based on available data.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substances

Non-applicable – this product is an aqueous polymer formulation (see 3.2).

Mixtures

Identification	Chemical Name / Classification	Concentration
CAS: 42751-79-1 (reference)	Epichlorohydrin-dimethylamine copolymer (polyamine) – Skin Irrit. 2, Eye Irrit. 2	Available on request (proprietary formulation)
106-89-8 (trace)	Epichlorohydrin (residual monomer) – Carc. 1B, Muta. 1B, Acute Tox. 3, Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1, STOT RE 2	Trace (typically < 0.1%, controlled by manufacturer)
7732-18-5	Water – Not classified	Balance

Exact polymer composition, molecular weight, charge density and formulation additives are proprietary to the manufacturer. To obtain more information on the hazards of the components, consult sections 11, 12 and 16.

4. FIRST AID MEASURES

Description of necessary first-aid measures

By skin contact
Remove contaminated clothing. Wash skin immediately with plenty of soap and water for at least 15 minutes. If irritation persists, seek medical attention.

By eye contact
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses if present and easy to do. Seek immediate medical attention.

By inhalation
Remove to fresh air. If breathing is difficult, give oxygen; if not breathing, give artificial respiration and get medical attention.

By ingestion
Do not induce vomiting. Rinse mouth with water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Most important symptoms/effects, acute and delayed
Causes skin irritation and eye irritation/damage. Symptoms detailed further in section 11.

Indication of immediate medical attention and special treatment needed, if necessary
Treat symptomatically. Show this SDS to the treating physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Suitable: Water spray, dry chemical, carbon dioxide or appropriate foam – product is an aqueous solution and is not itself flammable.
Unsuitable: None known.

Specific hazards arising from the chemical
Non-flammable aqueous liquid. Thermal decomposition may release carbon oxides, nitrogen oxides, hydrogen chloride and amine fumes.

Special protective actions for fire-fighters
Wear self-contained breathing apparatus and full protective clothing in case of fire in the surrounding area. Cool fire-exposed containers with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures
Avoid contact with skin and eyes. Use personal protective equipment as described in section 8. Ensure adequate ventilation. Spilled material is slippery – caution against falls.

Environmental precautions
Prevent entry into drains, watercourses or soil. Contain spillage with an inert absorbent. Notify the relevant authority in case of significant environmental release.

Methods and materials for containment and cleaning up
Dike and contain spill. Absorb with inert material (sand, earth, vermiculite) and transfer to a suitable container for disposal. Flush residual traces with water; treat according to local regulations.

Reference to other sections
See sections 8 and 13.

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid contact with skin and eyes. Use with adequate ventilation. Wash thoroughly after handling. Keep container tightly closed when not in use. Do not mix with strong oxidizers or strong acids/alkalis unless as directed by application dosing procedure.

Conditions for safe storage, including any incompatibilities
Store in tightly closed original containers in a cool, dry, well-ventilated area, protected from freezing and direct sunlight. Keep away from strong oxidizing agents, strong acids and strong alkalis. Typical shelf life: 6–12 months from date of manufacture in unopened packaging.

Specific end use(s)
No special requirement beyond the uses specified in section 1.2. Dosing rates and application procedures are grade- and system-specific – consult Suraj Chemicals for guidance.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters
No specific occupational exposure limit is established for this formulation; where relevant, the occupational exposure limit for epichlorohydrin (trace impurity) under the Factories Act, 1948 (as amended) should be considered for bulk/confined handling: TWA 0.5 ppm / 1.9 mg/m³.

Appropriate engineering controls
Use local exhaust ventilation where mist/aerosol may be generated. Emergency eyewash and safety shower should be accessible near the work area.

B. Respiratory protection
Not normally required under normal handling; use a mist respirator if spraying/misting operations generate airborne droplets.

C. Specific protection for the hands
Chemical-resistant gloves (nitrile or neoprene).

D. Eye and face protection
Chemical safety goggles and face shield.

E. Bodily protection
Chemical-resistant apron/protective clothing recommended for bulk handling. No smoking, drinking or eating at the working site; wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Item	Result
Physical state at 20°C	Liquid (aqueous solution)
Appearance	Clear to pale yellow liquid
Odor	Mild amine odor
pH (as supplied)	4 – 7 (typical, grade-dependent)
Active solids content	Available on request (grade-dependent, typically 30 – 50%)
Relative density at 20°C	1.02 – 1.10 (typical)
Viscosity at 20°C	Low to moderate, free-flowing to lightly viscous liquid
Solubility in water	Fully miscible
Boiling point	> 100°C (aqueous solution)
Flash point	Non-applicable (aqueous solution)
Freezing point	Approx. 0°C to -5°C (protect from freezing)

Precise batch values are grade-dependent and available on request via the Certificate of Analysis.

Other information

Explosive properties	Not relevant
Oxidising properties	None
Corrosive to metals	Not normally corrosive to common construction materials used in dosing systems at as-supplied pH

10. STABILITY AND REACTIVITY

Reactivity — No specific reactivity hazard identified under normal conditions of use and storage.

Chemical stability — Stable under normal temperatures and pressures. May be affected by prolonged exposure to freezing temperatures or extreme heat – store as per section 7.2.

Possibility of hazardous reactions — Hazardous polymerization will not occur under normal storage conditions.

Conditions to avoid

Freezing	Strong Oxidizers	Strong Acids/Alkalis
Avoid	Avoid contact	Avoid uncontrolled mixing

Incompatible materials — Strong oxidizing agents; strong acids and strong alkalis (uncontrolled mixing may cause exothermic reaction).

Hazardous decomposition products — None under normal conditions; thermal decomposition may release carbon oxides, nitrogen oxides, hydrogen chloride and amine fumes.

11. TOXICOLOGICAL INFORMATION

Information on toxicological effects — Based on available data for epichlorohydrin-dimethylamine (epi-DMA) type polyamine coagulants, the product causes skin and eye irritation; classification criteria for sensitisation, germ cell mutagenicity and carcinogenicity of the polymerized product itself are not met based on available data. See section 2.3 regarding trace residual monomer.

Product-specific toxicological information (reference: epi-DMA polyamine class)

Test	Species/Route	Value
Acute oral toxicity	Rat	LD50 > 2,000 mg/kg
Acute dermal toxicity	Rabbit	LD50 > 2,000 mg/kg
Skin irritation	Rabbit	Irritant
Eye irritation	Rabbit	Irritant to severely irritant (grade-dependent)

Values are class-typical reference data for epi-DMA polyamine coagulants; batch-specific toxicology testing has not been performed on this proprietary formulation.

12. ECOLOGICAL INFORMATION

Toxicity — Not established for this specific formulation. Cationic polyamine coagulants are generally toxic to aquatic organisms (particularly fish and invertebrates) at higher concentrations due to their cationic/surface-active character; avoid uncontrolled discharge to water bodies.

Persistence and degradability — No data available for this formulation.

Bioaccumulative potential — Not expected to bioaccumulate significantly (water-soluble, cationic polymer).

Mobility in soil — Miscible with water; strongly adsorbs to negatively charged soil/sediment particles due to cationic character.

Results of PBT and vPvB assessment — Not established for this formulation.

Other adverse effects — No data available.

13. DISPOSAL CONSIDERATIONS

Disposal methods — Dispose of via a licensed waste disposal contractor in accordance with local, state and national environmental regulations. Do not discharge to drains/watercourses without treatment. Rinse empty containers with water before disposal or recycling; do not reuse for food/potable purposes.

14. TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR/RID)

14.1 UN number	None – non-hazardous for transport under standard classification criteria
14.2 UN proper shipping name	Non-applicable
14.3 Transport hazard class(es)	None
14.4 Packing group	Non-applicable
14.5 Environmental hazard	No
14.6 Special precautions for user	Physico-chemical properties: see section 9
14.7 Transport in bulk	Not relevant

Transport of dangerous goods by sea (IMDG/IMO)

14.1 UN number	None – non-hazardous for sea transport under standard classification criteria
14.2 UN proper shipping name	Non-applicable
14.3 Transport hazard class(es)	None
14.4 Packing group	Non-applicable
14.5 Marine pollutant	No
14.6 Special precautions for user	None
14.7 Transport in bulk	Not relevant

Transport of dangerous goods by air (IATA)

14.1 UN number	None – non-hazardous for air transport under standard classification criteria
14.2 UN proper shipping name	Non-applicable
14.3 Transport hazard class(es)	None
14.4 Packing group	Non-applicable
14.5 Environmental hazard	No
14.6 Special precautions for user	None
14.7 Transport in bulk	Not relevant

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question

Handle in accordance with general workplace chemical safety norms under the Factories Act, 1948 (as amended, 1987). Trace epichlorohydrin content should be considered against the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989, threshold quantities for bulk storage – consult Suraj Chemicals for the batch-specific Certificate of Analysis before large-scale storage planning.

Other legislation

The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)
Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989

16. OTHER INFORMATION

Legislation related to safety data sheets

This safety data sheet has been designed in accordance with Annex 4 – Guidance on the preparation of Safety Data Sheets of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS).

Texts of the legislative phrases mentioned in sections 2 and 3

H315: Causes skin irritation.
H318: Causes serious eye damage.
H319: Causes serious eye irritation.
H301/H310/H331: Toxic if swallowed/in contact with skin/if inhaled (informative – trace epichlorohydrin only).
H317: May cause an allergic skin reaction (informative – trace epichlorohydrin only).
H340/H350: May cause genetic defects/cancer (informative – trace epichlorohydrin only).
H373: May cause damage to organs through prolonged or repeated exposure (informative – trace epichlorohydrin only).

The trace-impurity phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to residual epichlorohydrin monomer potentially present per section 3.2.

Advice related to training

Minimal training is recommended to prevent industrial risks for staff using this product, to facilitate comprehension of this safety data sheet and the product label.

Principal bibliographical sources

General public reference data for epichlorohydrin-dimethylamine (epi-DMA) polyamine coagulant class chemistry.

Abbreviations and acronyms

LD50: Lethal Dose 50 | PPE: Personal Protective Equipment | TWA: Time Weighted Average | PBT: Persistent, Bioaccumulative and Toxic | vPvB: very Persistent, very Bioaccumulative

Disclaimer: The information contained in this safety data sheet is based on sources, technical knowledge and current legislation, without being able to guarantee its accuracy. This information cannot be considered a guarantee of the properties of the product; it is simply a description of the security requirements. The occupational methodology and conditions for users of this product are not within Suraj Chemicals' awareness or control, and it is ultimately the responsibility of the user to take the necessary measures to obtain the legal requirements concerning the manipulation, storage, use and disposal of chemical products. The information on this safety data sheet only refers to this product, which should not be used for needs other than those specified.

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