Material Safety Data Sheet

Polyelectrolyte Cationic (RXSOL-40-4046-025)

1. Product and Company Identifaction

Product Name	RXSOL-40-4046-025
Product Type	Polyelectrolyte (Cationic)

Company Details:

RX MARINE INTERNATIONAL
105, A wing , BSEL , TECH PARK.
VASHI ,NEW BOMBAY 400703 INDIA

Phone	+91 22 65113333 / 5555 / 9999
Fax	+91 22 2781 1318 :::AOH :0091 9821214367
Email	mail@rxmarine.com

2. Composition / informationon ingredients

Multifloc 5084 is a proprietary product. Consequently this MSDS has been written to comply with Section 6.3, Clause 6.3.7 of the 'National Code Of Practice For The Preparation Of Material Safety Data Sheets' – NOHSC:2011 (2003), with respect to the disclosure of commercially confidential information.

All the ingredients of this product are listed in the Australian Inventory of Chemical Substances (AICS).

Name	CAS Number	Proportion
Aluminium hydroxychloride	1327-41-9	30 to 60 %
Flocculant determined not to be hazardous		10 %
Water	7732-18-5	To 100 %

3. Hazards Identification

Classified as a Hazardous Substance according to the criteria of Office of the Australian Safety and Compensation Council (previously NOHSC, the National Occupational Health and Safety Council).

Risk phrases: R36/38; Irritating to eyes and skin

Additional risk: spilt product may render surface very slippery.

Safety phrases: S37: Wear suitable gloves, S39: Wear eye/face protection, S24/25: Avoid contact with skin and eyes.

4. First Aid Measures

Eyes (contact): Flush with water for 15 minutes. Seek medical attention.

Skin (contact): Remove contaminated clothing — flush affected areas with soap and water.

Inhalation (breathing): This product has negligible vapour pressure and can only be inhaled as a mist or aerosol. Remove from source of mist, allow patient to stabilise while breathing in fresh air. If symptoms develop, seek medical attention.

Ingestion (swallowing): There is no immediate danger. Give water to drink. Consult a physician and let the physician know that the patient has swallowed a concentrated, mildly acidic aluminium salt solution that is not a scheduled poison, containing an organic polyeletrolyte that is also not a scheduled poison. Do not induce vomiting unless directed to do so by the physician.

5. Fire-fighting Measures

Flash point (ºC): Material is non-flammable and non-combustible.

Auto ignition point (ºC): Not applicable.

Explosion Limits In Air (% by volume)

Lower: Not applicable.
Upper: Not applicable.

Extinguishing media: Compatible with water, foam, CO2 and dry chemical. Fires can be attacked with extinguishers to suit flammable and combustible materials within the surrounding area.

Special Procedures: None.

Unusual hazards: None known.

Conditions to avoid: None known.

Materials to avoid: May emit some chlorine gas when in contact with very strong oxidising agents; some heat liberated when in contact with strong acids.

Decomposition products: Severe overheating may produce hydrogen chloride gas and aluminium oxide once water has been driven off.

Hazardous polymerisation: Will not occur.

6. Accidental Release Measures

Refer to Section 8 for personal protective equipment.

Steps to be taken in case material is released or spilled: If spilled, the affected area may become slippery. Prevent drain or sewer contamination with absorbent such as sand or sawdust etc. Collect for disposal, hose final trace residues to drain. Spillage into waterways will result in some lowering of the pH and the formation of aluminium hydroxide. Although aluminium hydroxide has a very low toxicity, aquatic life may be adversely affected during the brief period of hydrolysis leading to its formation. This period may last up to 30 minutes.

7. Handling and Storage

Storage in metal drums is not recommended, although stainless steel may be used on a temporary basis if stored at room temperature.

8. Exposure controls and personal protection

EFFECTS OF EXPOSURE

Eyes (Contact): Irritation and redness.

Skin (Contact & absorption): May cause skin irritation with prolonged contact.

Inhalation (breathing): No vapour, product is not volatile. Mist or aerosol could cause irritation to mucous tissue.

Ingestion (swallowing): Nausea & vomiting; could have systemic effects

SPECIAL PROTECTION INFORMATION

Respiratory protection: None required in normal operations. Wear appropriate breathing apparatus if application generates mist.

Ventilation: Local exhaust recommended.

Protective gloves: PVC or rubber.

Eye protection: Chemical goggles or safety glasses.

Other protective equipment: Not required, aprons and rubber boots can be used in wet conditions but mainly as protection from the water.

Safety profile: A mild human skin irritant.

9. Physical and chemical properties

Appearance & odour:	Clear to slightly hazy aqueous solution
Molecular weight:	Not available
Boiling point (ºC):	Roughly 100ºC
Melting point (ºC):	Not available
Specific Gravity (H2O = 1):	1.08 - 1.12 at 25ºC

pH (7 = neutral):	3.5 to 4.0 at 25ºC
Vapour pressure (kPa):	Not available or applicable
Relative vapour density (air = 1):	Not available or applicable
Volatile by weight (%):	Roughly 80% (prolonged drying leads to product change)
Solubility in water:	Completely miscible
Evaporation rate:	Not relevant (n-butyl acetate = 100)

10. Stability and reactivity

Stability: Stable

Reactivity: This product is unlikely to react or decompose under normal conditions of storage.

Incompatibilities: None known

Conditions to avoid: Material may decompose at high temperatures to evolve hydrogen chloride vapour, but only after water has evaporated and product has dried and reached calcination temperatures.

Decomposition products: Severe overheating to the point of driving off water may produce hydrogen chloride gas, oxides of nitrogen and oxides of carbon.

Hazardous polymerisation: Will not occur.

11. Toxicological information

Toxicology data (ex "Sax's, Dangerous Properties of Industrial Materials" Ed. 8):

With reference to aqueous solutions of aluminium salts in general, but not necessarily aluminium hydroxychlorides:

skn-hmn 7500 ?g/3D-I MLD
dnd-mam:lym 40 mmol/L
ivn-mus TDLo:483 g/kg
orl-rat LD50:3311 mg/kg
ipr-rat LD50:728 mg/kg
orl-mus LD50:1990 mg/kg
ipr-mus LD50:940 mg/kg

With specific reference to aluminium hydroxychloride solution: skn-hmn 150 mg/3D-I (mild)

The Registry of Toxic Effects of Chemical Substances (RTECS) lists the following additional effects associated specifically with 83% basic with aluminium hydroxychloride:

Effects	Route	Organism	Dose	Duration
Lungs, thorax or respiration: other changes Lungs, thorax or respiration: changes in lung weight	Inhalation	Rat	TCLo: 25 mg/m3	6H/2Y-I
Lungs, thorax or respiration: fibrosis, focal (pneomoconiosis) Lungs, thorax or respiration: changes in lung weight Nutritional & gross metabolic: weight loss or decreased weight gain	Inhalation	Rat	TCLo: 25 mg/m3	6H/26W-I
Lungs, thorax or respiration: other changes Lungs, thorax or respiration: changes in lung weight	Inhalation	Guinea pig	TCLo: 25 mg/m3	6H/2Y-I

Lungs, thorax or respiration: fibrosis, focal (pneomoconiosis) Lungs, thorax or respiration: changes in lung weight	Inhalation	Guinea pig	TCLo: 25 mg/m3	6H/26W-I

Note: TCLo = Lowest published toxic concentration.

Acute toxicity profile for organic ingredient (which is present at less than 10% w/w), as pure ingredient:

Oral	Rat	LD50	> 5000 mg/kg
Dermal	Rabbit	LD50	> 10000 mg/kg
Inhalation	Rat	LC50 (4 hours)	> 20 mg/L

Local effects on skin and eye of organic ingredient (which is present at less than 10% w/w), as pure ingredient:

Acute irritation	Dermal	Not irritating
Acute irritation	Eye	Not irritating

Further toxicity information on product:

Toxicity profile: This material is not a persistent poison, and neither this material, nor aluminium salts in general, nor the specific polyelectrolyte used as an ingredient in this product are listed in the Standard for the Uniform Scheduling of Drums and Poisons (Vol. 20). Aluminium hydroxychlorides would be expected to hydrolyse on contact with water to form aluminium hydroxide, which has a very low toxicity and would eventually becoming a part of the eco-system. Some reduction in pH may occur on hydrolysis.

Threshold limit value: 2 mg/m3 based on Al (Ref.: ACGIH, soluble Aluminium salts). More toxicity information on the organic ingredient can be found in Section 12.

12. Ecological information

Environmental fate and distribution:

Not a persistent pollutant; can cause coagulation of solids in aqueous suspension, especially when highly diluted by the water in which the solids are suspended. Aluminium compounds are common in most soils and are the principle components of Bauxite and Gibbsite, which are common, naturally occurring minerals. When diluted by copious quantities of water (for example, to the point that the concentration is less than about 100 grams per cubic meter), this product will hydrolyse rapidly to form aluminium hydroxide, which can be expected to become a part of the natural soil profile if not recovered. The formation of aluminium hydroxide is part of the process of hydrolysis of the aluminium salt. During hydrolysis, which
may last up to an hour, the product is known to be fairly toxic to aquatic life, including fish. This toxicity diminishes following hydrolysis as the aluminium hydroxide disperses into the environment.

Similarly, any toxicity effects due to the organic component of this product will diminish significantly within 30 minutes as the product binds to suspended particles and dissolved organic carbon. As a result, any toxicity tests on water that contains no suspended solids or natural organic matter would tend to overestimate its true aquatic toxicity, as the suspended solids and natural organic matter would tend to greatly reduce its effective concentration. Nevertheless toxicity effects on fish are reported. The following toxicity information is available for the organic component of this product:

Test: acute toxicity, freshwater (OECD Test 203) Duration: 96 hour

Species: Rainbow trout

LC50: 1 to 10 mg/L

13. Disposal considerations

This product will remain as an effective coagulant almost indefinitely, although it may suffer some loss of flocculating performance over a period of a year or more (that is, it may become progressively less effective in bringing about rapid aggregation of newly formed floc). Its use in clarification of turbid waters is encouraged in preference to disposal where possible.

Waste disposal method: If disposal is necessary, refer to local waste disposal authority. This product can be neutralised with alkali to form a mixture of aluminium hydroxide and the chloride salt of the alkali. This is best done after diluting the product at least ten times with water. The resulting mixture is non-hazardous providing the resulting pH is between roughly 5 and 9.

14. Transport information

This product does not carry a Dangerous Goods classification.

UN No.: None	HAZCHEM: None	DG CLASS: None
Poison Schedule: None	Packaging Group: None	EPG: None

15. Regulatory information

All of the constituents of this product are to be found in the public AICS database.

Risk phrases: R36/38; Irritating to eyes and skin

Additional risk: spilt product may render surface very slippery.

Safety phrases: S37: Wear suitable gloves, S39: Wear eye/face protection, S24/25: Avoid contact with skin and eyes.

16. Other information

References cited:

American Conference of Governmental Industrial Hygienists (ACGIH), Documentation of the Threshold Limit Values and Biological Exposure Indices, 6th Edition, ACGIH, Cincinatti, Ohio, 1991.

Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment
[NOHSC:1003(1995)]

Registry of Toxic Effects of Chemical Substances (RTECS)

Sax's, Dangerous Properties of Industrial Materials, Edition 8, Ed. RJ Lewis Sr., van Nostrand Reinhold.

Changes since previous issue:

Adoption of 16-point format

The product is now listed as hazardous owing to its property of being a mild irritant.

Further ecological and toxicity information is cited

This MSDS summarises our best knowledge of health and safety hazard information of the product and how to safely handle and use the product in the workplace. Each user should read this MSDS and consider the information in the context of how the product will be handled and used in the workplace including in conjunction with other products.
Please contact the company if any further information is required.

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