

VYTAL A971 — ANIONIC FLOCCULANT (HIGH MOLECULAR WEIGHT POWDER)

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1.1 Product identifier:

**Product name:** Vytal A971 — Anionic Flocculant (High Molecular Weight Powder)  
**Synonyms:** Vytal A971, Vytal 971  
**CAS No.:** Mixture — anionic polyacrylamide copolymer (no single CAS)  
**Chemical formula:** Anionic polyacrylamide copolymer — variable

1.2 Relevant identified uses of the substance/mixture and uses advised against:

**Identified uses:** Coagulant/clarification aid for water and wastewater treatment (see product specification sheet for application-specific use). Industrial use only.  
**Uses advised against:** Not for food, pharmaceutical, or household/consumer use.

1.3 Supplier's details:

**SURAJ CHEMICALS**  
No 92, Govindappa Naicken Street, Shiva Complex, Chennai – 600001, Tamil Nadu, India  
Tel: +91 - 7092722822, +91 - 9840284032 / +91 - 44 - 25393652, 42130281  
Email: sales@surajchemicals.com | Website: www.surajchemicals.com  
GST No: 33ACEPV8190L1ZZ

1.4 Emergency phone number:

Emergency Contact No: +91 - 7092722822, +91 - 9840284032

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture:

**GHS:** Based on available data, this product does not meet the GHS classification criteria for physical, health, or environmental hazard classes.

2.2 GHS label elements, including precautionary statements:

No hazard pictograms or signal word are required. General precautionary statement: in case of contact with eyes, rinse immediately with plenty of water and seek medical advice; wear suitable protective clothing and avoid generating/breathing dust (powder grade).

2.3 Other hazards which do not result in classification:

Dust may be irritating to eyes, respiratory system and skin on prolonged/repeated contact (non-classifying effect; see section 11). Wetted material (powder or solution) is very slippery – slip hazard. Contains trace residual acrylamide monomer (see section 3.2), which is toxic and a suspected human carcinogen in its unreacted form; content is controlled to low ppm levels by the manufacturer.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substances:

**Chemical description:** Anionic polyacrylamide (partially hydrolysed acrylamide/sodium acrylate copolymer)

| Identification | Chemical Name / Classification                                  | Concentration                   |
|----------------|-----------------------------------------------------------------|---------------------------------|
| CAS: 9003-05-8 | Polyacrylamide (anionic, partially hydrolysed) – Not classified | ≥ 90% (powder grade, dry basis) |

3.2 Mixtures:

Liquid/emulsion grades additionally contain a carrier oil/surfactant system and water; exact formulation is proprietary. May contain trace residual unreacted acrylamide monomer (CAS 79-06-1), typically controlled to below 0.05% (500 ppm) of polymer solids per industry specification – free acrylamide is classified Acute Tox. 3, Muta. 1B, Carc. 1B, Repr. 2, STOT RE 1. Exact residual monomer content for this grade is available on request via the Certificate of Analysis.

To obtain more information on the hazards of the components, consult sections 11, 12 and 16.

SECTION 4: FIRST AID MEASURES

4.1 Description of necessary first-aid measures:

By skin contact:

Immediately wash skin with soap and copious amounts of water. If irritation persists, call a physician.

By eye contact:

Flush with copious amounts of water for at least 15 minutes, separating the eyelids with fingers to assure adequate flushing. If irritation persists, call a physician.

By inhalation:

Remove to fresh air. If necessary, get medical attention.

By ingestion:

If swallowed and the person is conscious, immediately wash out mouth with water. Call a physician.

4.2 Most important symptoms/effects, acute and delayed:

May be irritating to eyes, respiratory system and skin. Wetted material presents a slip hazard.

4.3 Indication of immediate medical attention and special treatment needed, if necessary:

Not relevant

SECTION 5: FIRE-FIGHTING MEASURES

5.1 Suitable extinguishing media:

**Suitable:** Water spray, dry chemical, carbon dioxide or appropriate foam.  
**Unsuitable:** None known.

5.2 Specific hazards arising from the chemical:

Combustible solid (powder grade) under prolonged fire exposure; fine dust dispersed in air may present a dust explosion hazard in confined/unventilated spaces. Emits toxic fumes (carbon monoxide, carbon dioxide, nitrogen oxides, ammonia) under fire conditions.

5.3 Special protective actions for fire-fighters:

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Avoid raising dust when fighting fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

Exercise appropriate precautions to minimize direct contact with skin and eyes. Avoid generating dust. Wetted floors are extremely slippery – barricade area.

**6.2 Environmental precautions:**  
Avoid discharge to water bodies where practicable; contain spillage. Powder forms slippery gel-like surfaces when wetted.

**6.3 Methods and materials for containment and cleaning up:**  
Sweep up dry material with a spade and transfer to a dry, clean, lidded container for disposal/reuse. Avoid raising dust. For liquid/wetted spills, use absorbent material, then wash the area with water (rinse water will be slippery until diluted).

**6.4 Reference to other sections:**  
See sections 8 and 13.

**SECTION 7: HANDLING AND STORAGE**

**7.1 Precautions for safe handling:**  
Wear appropriate clothing and gloves. Avoid breathing dust. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Mechanical exhaust ventilation is recommended for powder handling. Keep away from ignition sources, heat and flame. Incompatible with strong oxidizing agents and food. No smoking at the working site.

**7.2 Conditions for safe storage, including any incompatibilities:**  
Store in a cool, dry, well-ventilated area away from ignition sources, heat, flame and direct sunlight, in a tightly closed container. Protect powder grade from moisture (caking). Incompatible with strong oxidizing agents and food.

**7.3 Specific end use(s):**  
No special requirement beyond the uses specified in section 1.2. Prepare stock solutions per manufacturer's dosing guidance (typically 0.1–0.5% w/v for powder grade) to avoid lump formation.

**SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION**

**8.1 Control parameters:**  
No specific occupational exposure limit is established for this formulation; general nuisance dust limits apply for the powder grade under the Factories Act, 1948 (as amended).

**8.2 Appropriate engineering controls:**  
Use local exhaust/dust extraction where available for powder handling. Safety shower and eye bath should be accessible.

**B. Respiratory protection:**  
Government-approved dust respirator if necessary (dusty conditions, powder grade).

**C. Specific protection for the hands:**  
Chemical-resistant protective gloves.

**D. Eye and face protection:**  
Chemical safety goggles.

**E. Bodily protection:**  
Appropriate protective clothing. No smoking, drinking or eating at the working site; wash thoroughly after handling.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**9.1 Information on basic physical and chemical properties (Powder grade):**

| Item                     | Result                                                                     |
|--------------------------|----------------------------------------------------------------------------|
| Physical state           | Solid, granular/powder (white to off-white, water-soluble organic polymer) |
| Solid content            | ≥ 90%                                                                      |
| Bulk density             | 0.7 – 0.85 g/cm³                                                           |
| pH (1% aqueous solution) | 6 – 8.5                                                                    |
| Soluble matter           | > 99%                                                                      |
| Insoluble matter         | < 1%                                                                       |
| Moisture content         | < 10%                                                                      |
| Ionicity                 | Anionic (degree of hydrolysis grade-dependent)                             |

*Liquid/emulsion grade: physical properties are grade-dependent and available on request from Suraj Chemicals.*

**9.2 Other information (heavy metal content, powder grade, typical):**

| Item                        | Result                                                |
|-----------------------------|-------------------------------------------------------|
| Cadmium                     | ≤ 1 mg/kg                                             |
| Lead                        | ≤ 5 mg/kg                                             |
| Mercury                     | ≤ 0.5 mg/kg                                           |
| Residual acrylamide monomer | Typically ≤ 0.05% of polymer solids (see section 3.2) |

**SECTION 10: STABILITY AND REACTIVITY**

**10.1 Reactivity:**  
No specific reactivity hazard identified under normal conditions.

**10.2 Chemical stability:**  
Stable under normal temperatures and pressures. Powder is hygroscopic – keep dry to avoid caking/degradation.

**10.3 Possibility of hazardous reactions:**  
Hazardous polymerization will not occur.

**10.4 Conditions to avoid:**

| Ignition Sources | Heat/Flame | Moisture (powder) | Strong Oxidizers |
|------------------|------------|-------------------|------------------|
| Avoid            | Avoid      | Avoid             | Avoid contact    |

**10.5 Incompatible materials:**  
Strong oxidizing agents; food.

**10.6 Hazardous decomposition products:**  
Carbon monoxide, carbon dioxide, nitrogen oxides, ammonia (on thermal decomposition/combustion).

**SECTION 11: TOXICOLOGICAL INFORMATION**

**11.1 Information on toxicological effects:**  
Irritation data: may be irritating to eyes, respiratory system and skin (mechanical/dust irritation).

**Product-specific toxicological information (reference: anionic polyacrylamide class):**

| Test | Species/Route | Value |
|------|---------------|-------|
|------|---------------|-------|

|                 |        |                                                |
|-----------------|--------|------------------------------------------------|
| Oral LD50       | Rat    | > 10,000 mg/kg                                 |
| Dermal LD50     | Rabbit | > 2,000 mg/kg                                  |
| Skin irritation | Rabbit | Non-irritant / mild mechanical irritant (dust) |
| Eye irritation  | Rabbit | Non-irritant / mild mechanical irritant (dust) |

Values as reported for polyacrylamide-based reference polymer material; low acute toxicity overall. The polymerized product itself is of low concern; the principal toxicological concern for this class is residual unreacted acrylamide monomer (see section 3.2).

SECTION 12: ECOLOGICAL INFORMATION

- 12.1 Toxicity:**  
Not established for this specific formulation. Polymerized anionic polyacrylamide flocculants are generally of low aquatic toxicity in their polymerized, high-molecular-weight form; however, residual unreacted acrylamide monomer is toxic to aquatic organisms and neurotoxic to higher organisms. Avoid direct/uncontrolled discharge to water bodies.
- 12.2 Persistence and degradability:**  
No data available for the polymer; expected to be poorly biodegradable due to high molecular weight.
- 12.3 Bioaccumulative potential:**  
Not expected to bioaccumulate (high molecular weight, water-soluble polymer).
- 12.4 Mobility in soil:**  
Soluble/dispersible in water.
- 12.5 Results of PBT and vPvB assessment:**  
Not established for the polymerized product.
- 12.6 Other adverse effects:**  
No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

- 13.1 Disposal methods:**  
Spent or discarded material is not normally classified as hazardous waste in its polymerized form. Dispose of via a licensed waste disposal contractor, or dissolve and dispose of in accordance with local, state and national environmental regulations.

SECTION 14: TRANSPORT INFORMATION

Transport of dangerous goods by land (ADR/RID):

|                                   |                                    |
|-----------------------------------|------------------------------------|
| 14.1 UN number                    | None – non-hazardous for transport |
| 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                       |

Transport of dangerous goods by sea (IMDG/IMO):

|                                   |                                        |
|-----------------------------------|----------------------------------------|
| 14.1 UN number                    | None – non-hazardous for sea transport |
| 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 |
| 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                           |

SECTION 15: REGULATORY INFORMATION

- 15.1 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). Not classified as hazardous chemical under the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989, in its polymerized form.
- Other legislation:**  
The Factories Act, 1948 (Act No. 63 of 1948), as amended by the Factories (Amendment) Act, 1987 (Act 20 of 1987)

SECTION 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:**  
Not applicable to the polymerized product itself – not classified as hazardous under GHS. Residual monomer hazard statements (informative only, refer to free acrylamide CAS 79-06-1): H301/H312/H332 (toxic), H317 (may cause allergic skin reaction), H340/H350 (may cause genetic defects/cancer), H361f (suspected of damaging fertility), H372 (nervous system damage through prolonged/repeated exposure).  
*The residual-monomer phrases indicated do not refer to the product itself; they are present merely for informative purposes and refer to a trace impurity 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 anionic polyacrylamide (CAS 9003-05-8) class chemistry.

Abbreviations and acronyms:

LD50: Lethal Dose 50 | PPE: Personal Protective Equipment

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.

END OF SAFETY DATA SHEET