

TECHNICAL DATA SHEET (TDS)

TDS NO: 2049

POTASSIUM POLYACRYLATE— SUPERABSORBENT POLYMER (SAP)

CAS NO: 25608-12-2

PRODUCT DESCRIPTION

Potassium Polyacrylate is the potassium salt polymer of acrylic acid. It can absorb several hundred times its weight in water, forming a stable gel. This makes it a highly efficient superabsorbent polymer (SAP) commonly used in agriculture, horticulture, fire-fighting gels, cable sealing, and industrial absorbent systems. Compared to sodium polyacrylate, it offers better environmental compatibility and potassium enrichment for soil.



INTENDED USE

- Retaining and storing water in various systems
- Maintaining moisture in the root zone of plants
- Enhancing drought resistance in soil
- Providing viscosity and water-holding in fire-retardant gels
- Blocking water in cable cores and fiber optics

APPLICATION AREAS

- Agriculture and greenhouse cultivation
- Landscaping, turf and golf course maintenance
- Fire-fighting gel formulations
- Power and telecommunication cable sealing
- Industrial cleanup and absorption systems

ADVANTAGES

- Absorbs 400–600 times its own weight in water (in soil)
- Releases water gradually to plant roots
- More biodegradable and environmentally friendly than sodium-based SAP
- Improves soil moisture retention and crop yield
- Provides potassium to soil as a beneficial nutrient
- Simple application and long-lasting performance

DIRECTIONS FOR USE

- Agriculture: 20–100 kg/ha mixed with soil
- Fire-fighting: 0.1–1% in water-based gel systems
- Cable sealing: 5–10 g/m of cable
- Industrial absorbents: 1–10% depending on the system
- Mix thoroughly for even distribution and optimal effect

For more information regarding safety, handling, and transportation, please refer to the Material Safety Data Sheet (MSDS).

Authorized by: S. Nehir / Chemical Engineer
Quality Assurance Officer – 20/05/2024

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COMPOSITION

Potassium Polyacrylate ($C_3H_3KO_2$)_n – Cross-linked polymer structure

PACKING INFORMATION

25 kg kraft bag (powder/granule)

STORAGE CONDITIONS

Store in a cool, dry, and shaded area away from direct sunlight. Product is hygroscopic; once opened, it may absorb ambient moisture. Always reseal packaging tightly. For optimal shelf life, store on pallets in dry, well-ventilated areas.

PHYSICAL AND CHEMICAL PROPERTIES

Property	Value
Appearance	White powder / granule / liquid
Color	Colorless – White
Odor	Neutral
pH (0.5% solution)	6.0 – 8.5
Bulk Density (powder)	0.45 – 0.80 g/cm ³
Water Absorption (DI water)	300 – 600 times its weight
Solubility	Insoluble in water; forms hydrogel
Active Content	≥ 90% Potassium Polyacrylate (dry basis)

SAFETY INSTRUCTIONS

Avoid direct contact with skin and eyes. In case of contact, rinse immediately with plenty of water and seek medical attention if irritation persists. Inhalation of powder form may cause respiratory irritation; use appropriate masks and ensure proper ventilation. When handling the liquid form, wear gloves, goggles, and protective clothing. Spilled product can cause surfaces to become slippery; clean thoroughly and with caution. Product should be handled by trained personnel only and stored out of reach of children. Dispose of waste and empty containers in accordance with local environmental regulations. Refer to the Safety Data Sheet (SDS) for more detailed information.

GENERAL INFORMATION

This Technical Data Sheet is based on laboratory testing and production data. Users are responsible for evaluating the product's suitability for their specific application. Star Kimya assumes no liability for damages arising from misuse or improper storage.

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