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Technical Data Sheet (TDS)

1. Product Overview

- Product Name: Polyacrylic Acid (PAA)
- English Name: Polyacrylic Acid
- CAS Number: 9003-01-4
- Formula: $(C_3H_4O_2)_n$ (n = 1000-5000)
- Molecular Weight: Variable (20,000-100,000 g/mol)
- Product Characteristics: Water-soluble anionic polymer with excellent scale inhibition, dispersion, and thickening properties. Stable over a wide pH range (2.0-11.0) and high temperature (≤120℃). Non-toxic, biodegradable, and compatible with most water treatment chemicals.

2. Technical Specifications (Industrial Standard)

Item	Specification
Appearance	Colorless to pale yellow transparent liquid
Solid Content	30.0-35.0%
pH Value (1% Aqueous Solution, 25℃)	2.0-4.0
Viscosity (25℃, 2% Solution)	500-5000 mPa·s
Free Acrylic Acid Monomer	≤ 0.5%
Heavy Metals (Pb)	≤ 0.0005%
Arsenic (As)	≤ 0.0001%
Iron (Fe)	≤ 0.001%
Density (25℃)	1.08-1.15 g/cm³
Temperature Stability	Stable at ≤120℃ (scale inhibition efficiency ≥90%)

3. Product Advantages

1. Efficient Scale Inhibition: Inhibits formation of calcium carbonate, calcium sulfate, and other scales (inhibition rate ≥95%).
2. Strong Dispersion: Prevents particle aggregation in water systems, maintaining system flow efficiency.
3. Wide Compatibility: Works with bactericides, corrosion inhibitors, and other water treatment additives.
4. Environmental Friendly: Biodegradable, low residual, compliant with global environmental standards.
5. Versatile Functions: Acts as scale inhibitor, dispersant, and thickener for multi-scenario applications.

4. Application Fields

- Water Treatment: Industrial circulating water, cooling water systems, boiler water, reverse osmosis (RO) pretreatment.
- Coating & Adhesives: Thickener, dispersant for water-based coatings, latex paints, and pressure-sensitive adhesives.
- Personal Care: Thickener, stabilizer for shampoos, lotions, and cosmetics.
- Other Fields: Dispersant for textile printing, papermaking, and detergent formulations.

5. Usage Methods

- Dosage: 2-50 mg/L (water treatment); 0.1-5.0% (coating/adhesives/personal care, based on total formulation).
- Dilution: Dilute with water at 1:10-1:100 (product: water) before use; stir evenly.
- Addition Method: Add continuously via metering pump (water treatment) or mix into formulation during production (coating/cosmetics).
- Optimal Conditions: pH 2.0-11.0, temperature ≤120℃; avoid mixing with strong bases.

6. Packaging & Storage

- Packaging Specifications: 25 kg HDPE drums, 200 kg HDPE drums, 1000 kg IBC totes (custom packaging available).
- Storage Conditions: Store in cool, dry, well-ventilated warehouse (≤30℃); keep container tightly closed; avoid direct sunlight and high temperature; store separately from strong bases/oxidizing agents.
- Shelf Life: 12 months (unopened, specified conditions).
- Transportation: UN 3265 (Class 8 Corrosive Substance); transport in acid-resistant vehicles; avoid collision, leakage, and exposure to sunlight/rain.

7. Safety & Protection

- Corrosive; avoid direct contact with skin, eyes, and clothing.
- Operators must wear chemical safety goggles, face shield, nitrile rubber gloves, and acid-resistant clothing.
- In case of contact, rinse immediately with plenty of water for ≥15 minutes; seek medical attention if necessary.
- Do not ingest; if swallowed, rinse mouth with water and consult a doctor.

8. Quality Assurance

- Manufactured in accordance with ISO 9001 quality management system.
- Each batch is tested with a Certificate of Analysis (COA) to meet industrial standards.
- Provide technical support: dosage adjustment, formulation optimization, and application problem-solving.