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Technical Data Sheet (TDS)

1. Product Overview

- Product Name: Sodium Polyaspartate (PASP)
- English Name: Sodium Polyaspartate
- CAS Number: 26062-79-3
- Formula: $(C_4H_5NO_3Na)_n$ (n = 100-300)
- Molecular Weight: Variable (10,000-30,000 g/mol)
- Product Characteristics: Environmentally friendly, phosphorus-free polymer water treatment agent. Features excellent scale inhibition, dispersion, and chelation properties. Effectively inhibits calcium carbonate, calcium sulfate, and phosphate scale. Stable over wide pH (5.0-11.0) and temperature (≤150℃) ranges. Fully biodegradable (BOD_5/COD >0.7), non-toxic, and compatible with most water treatment chemicals.

2. Technical Specifications (Industrial Standard)

Item	Specification
Appearance	Colorless to pale yellow transparent liquid
Solid Content	30.0-40.0%
pH Value (1% Aqueous Solution, 25℃)	7.0-9.0
Scale Inhibition Efficiency ($CaCO_3$, 25℃, 24h)	≥ 90%
Scale Inhibition Efficiency ($CaSO_4$, 25℃, 24h)	≥ 85%
Heavy Metals (Pb)	≤ 0.0005%
Arsenic (As)	≤ 0.0001%
Iron (Fe)	≤ 0.001%
Free Aspartic Acid Monomer	≤ 1.0%
Phosphorus Content (as PO_4^{3-})	≤ 0.05%
Density (25℃)	1.08-1.15 g/cm³
Viscosity (25℃)	50-200 mPa·s
Temperature Stability	Stable at ≤150℃ (scale inhibition efficiency ≥85%)

3. Product Advantages

1. **Phosphorus-Free & Eco-Friendly**: No phosphorus, avoids eutrophication; fully biodegradable, meets global environmental standards.
2. **Efficient Scale Inhibition**: Inhibition rate ≥90% for common scales, preventing pipeline blockage and equipment fouling.
3. **Wide Adaptability**: Effective in high-hardness, high-alkalinity water; stable under extreme temperature/pH conditions.
4. **Strong Compatibility**: Works with bactericides, corrosion inhibitors, and other water treatment additives.

5. **Multi-Scenario Application**: Low dosage (2-20 mg/L); suitable for water treatment, detergents, and agriculture.

4. Application Fields

- **Industrial Water Treatment**: Circulating cooling water, boiler water, desalination plants, oilfield injection water.
- **Detergent & Cleaning**: Detergent additive (scale inhibitor, dispersant); metal surface cleaning agent.
- **Agriculture**: Fertilizer synergist, improves nutrient absorption and soil structure.
- **Other Fields**: Wastewater reuse systems, reverse osmosis (RO) pretreatment, textile printing.

5. Usage Methods

- **Dosage**:
  - Water Treatment: 2-20 mg/L (adjust based on water quality).
  - Detergent Additive: 0.5-5.0% (based on total formulation).
  - Agriculture: 50-200 ppm (dilute 1:500 with water for spraying).
- **Dilution**: Dilute with water at 1:10-1:100 (product: water) before use; stir evenly.
- **Addition Method**: Continuously add via metering pump (water treatment) or mix into formulations (detergent/fertilizer).
- **Optimal Conditions**: pH 5.0-11.0, temperature ≤150℃.

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 warehouse (5-35℃); keep tightly closed; avoid direct sunlight and high temperature.
- **Shelf Life**: 18 months (unopened, specified conditions); 6 months after opening.
- **Transportation**: Non-dangerous goods; transport by ordinary vehicles; avoid collision, leakage, and extreme temperatures.

7. Safety & Protection

- Low toxicity, mild irritation may occur in sensitive individuals.
- Wear safety glasses and nitrile gloves during large-scale handling.
- In case of skin/eye contact, rinse with plenty of water; seek medical attention if irritation persists.
- Do not ingest; if swallowed, rinse mouth with water and consult a doctor if discomfort occurs.

8. Quality Assurance

- Manufactured in accordance with ISO 9001 and ISO 14001 management systems.
- 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.