

Technical Data Sheet (TDS)

1. Product Overview

- Product Name: Polymaleic Anhydride (PMA)
- English Name: Polymaleic Anhydride
- CAS Number: 26099-09-2
- Formula: $(C_4H_2O_2)_n$ (n = 100-300)
- Molecular Weight: Variable (5000-10000 g/mol)
- Product Characteristics: High-efficiency water-soluble polymer with excellent scale inhibition and dispersion properties. Hydrolyzes to polymaleic acid in water, effectively inhibiting calcium carbonate, calcium sulfate, and phosphate scale. Stable over wide pH (2.0-11.0) and temperature ($\leq 150^\circ C$) ranges. Non-toxic, biodegradable, and compatible with most water treatment chemicals.

2. Technical Specifications (Industrial Standard)

Item	Specification
Appearance	Light yellow to amber transparent liquid
Solid Content	40.0-50.0%
pH Value (1% Aqueous Solution, 25°C)	2.0-4.0
Molecular Weight (GPC)	5000-10000 g/mol
Scale Inhibition Efficiency (CaCO ₃ , 25°C, 24h)	≥ 90%
Scale Inhibition Efficiency (CaSO ₄ , 25°C, 24h)	≥ 85%
Heavy Metals (Pb)	≤ 0.0005%
Arsenic (As)	≤ 0.0001%
Iron (Fe)	≤ 0.001%
Free Maleic Anhydride Monomer	≤ 1.0%
Density (25°C)	1.15-1.25 g/cm ³
Viscosity (25°C)	100-500 mPa·s
Temperature Stability	Stable at $\leq 150^\circ C$ (scale inhibition efficiency $\geq 85\%$)

3. Product Advantages

1. Efficient Scale Inhibition: Inhibits scale formation with efficiency $\geq 90\%$, preventing pipeline blockage.
2. Strong Dispersion: Prevents particle aggregation, maintaining system flow and heat exchange efficiency.
3. Wide Adaptability: Effective in high-hardness, high-alkalinity, and high-temperature water systems.
4. Environmental Friendly: Biodegradable, low residual, compliant with global environmental standards.
5. Cost-Effective: Low dosage (2-20 mg/L); compatible with other additives to reduce overall costs.



NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
Email:marketing01@newayphc.com; Phone:+86-021-50350029 <https://www.newayphc.com>

4. Application Fields

- Industrial Circulating Water: Cooling systems, boiler water, central air conditioning circulating water.
- Oilfield & Chemical Industry: Oilfield injection water, chemical processing water, desalination plants.
- Detergent & Cleaning: Detergent additive (scale inhibitor, dispersant); metal surface cleaning.
- Other Fields: Reverse osmosis (RO) pretreatment, wastewater reuse systems, textile printing.

5. Usage Methods

- Dosage: 2-20 mg/L (water treatment); 0.5-5.0% (detergent/coating formulations).
- Dilution: Dilute with water at 1:10-1:50 (product: water) before use; stir evenly.
- Addition Method: Continuously add via metering pump (water treatment) or mix into formulations (detergent/coating).
- Optimal Conditions: pH 2.0-11.0, temperature $\leq 150^{\circ}\text{C}$; avoid mixing with strong bases.

6. Packaging & Storage

- Packaging Specifications: 25 kg HDPE drums, 200 kg HDPE drums, 1000 kg IBC totes (custom available).
- Storage Conditions: Cool, dry warehouse ($\leq 30^{\circ}\text{C}$); keep tightly closed; store separately from 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.

7. Safety & Protection

- Corrosive; avoid direct contact with skin, eyes, and clothing.
- Operators must wear chemical goggles, face shield, nitrile gloves, and acid-resistant clothing.
- In case of contact, rinse with plenty of water for ≥ 15 minutes; seek medical attention if needed.
- 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.