

ZEELCHEM™ 3000 — Copolymer of MA/AA

Maleic Acid – Acrylic Acid Copolymer (MA/AA)

Technical Data Sheet · Revision 00 · Date of issue 19-10-2026

ISO 9001:2015 · ISO 22000:2018 · ISO 14001:2015 CERTIFIED MANUFACTURER · MADE IN INDIA

Product name	ZEELCHEM™ 3000 Copolymer of MA/AA
Chemical name	Maleic Acid – Acrylic Acid Copolymer (MA/AA)
Synonyms / abbreviation	MA/AA
CAS No.	26677-99-6
Molecular formula	$(C_4H_4O_4 \cdot C_3H_4O_2)_n$
Molecular weight	Approx. 3,000
Category	Water Treatment Polymer
HS code (indicative)	3906.90
Physical form	Light-yellow transparent liquid

PRODUCT DESCRIPTION

ZEELCHEM™ 3000 is a copolymer of maleic acid and acrylic acid (MA/AA). It combines the high-temperature carbonate inhibition of maleic units with the dispersing power of acrylic units, giving one product that both inhibits scale and keeps particles dispersed in hard, high-pH water.

The copolymer tolerates high calcium hardness and high alkalinity and performs well at the elevated temperatures found on heat-exchanger skin surfaces. It is used alone or with organophosphonates in alkaline cooling water, boiler internal treatment and oilfield programmes.

In detergents, MA/AA is a well-established co-builder: it sequesters hardness ions, inhibits encrustation on fabrics and machine parts, and prevents redeposition of soil, especially in phosphate-free powder and liquid formulations.

KEY FEATURES & BENEFITS

- Dual action: $CaCO_3$ scale inhibition and particle dispersion
- High calcium tolerance at high pH
- Good thermal stability for heat-exchanger surfaces
- Proven detergent co-builder and anti-redeposition agent
- Phosphorus-free
- Compatible with phosphonates, zinc and azole inhibitors

TYPICAL SPECIFICATIONS

Parameter	Specification	Test method
Appearance	Light-yellow transparent liquid	Visual (25 °C, clear glass)
Solid content	≥ 48.0 %	Gravimetric, oven 120 °C

Parameter	Specification	Test method
Free monomer (as acrylic acid)	≤ 0.50 %	Bromination titration / HPLC
pH (1 % aqueous solution)	2.0 – 3.0	pH meter, 1 % aq., 25 °C
Density at 20 °C	≥ 1.18 g/cm ³	Density bottle / hydrometer, 20 °C
Average molecular weight	Approx. 3,000	GPC (gel permeation chromatography)

Values are typical specifications. Each consignment is supplied with a batch Certificate of Analysis (COA). Custom specifications are available on request.

APPLICATIONS

- Alkaline cooling water programmes
- Boiler internal treatment
- Oilfield scale control
- Phosphate-free laundry detergents
- Dishwashing and bottle washing
- Textile scouring and dyeing
- Industrial cleaners

DOSAGE & METHOD OF USE

1 – 15 mg/L in cooling water as a scale inhibitor and dispersant. In detergents, 1 – 5 % of the formulation (as supplied) is common. Adjust to water analysis and performance targets.

Dose with a metering pump into a point of good mixing. The product may be diluted with good-quality (soft or demineralised) water; dilute solutions should be prepared fresh. Compatible with other ZEELCHEM™ polymers and phosphonates; check compatibility before blending with strong oxidisers or cationic products.

PACKAGING

60.0 kg net HDPE carboy. Each carboy is labelled with product name, batch number, net weight and GHS hazard information.

STORAGE & SHELF LIFE

Store in closed HDPE containers in a cool, shaded, ventilated area between 5 °C and 40 °C. Avoid freezing and direct sunlight; mix gently before use if slight stratification is seen. Shelf life: 12 months in unopened packing.

SAFETY & HANDLING

	Signal word: WARNING
	H315: Causes skin irritation.
	H319: Causes serious eye irritation.

Mildly acidic polymer solution. Use goggles and gloves; avoid contact with eyes and prolonged skin contact. Rinse spills with water. Refer to the ZEELCHEM™ SDS (GHS format) before handling. Full information is given in the ZEELCHEM™ Safety Data Sheet (SDS/MSDS).

QUALITY & REGULATORY

- Manufactured under an ISO 9001:2015 quality management system; ISO 22000:2018 and ISO 14001:2015 certified.
- Batch traceability with retained samples; COA with every consignment.

- SDS prepared to GHS (UN Rev. 10), ISO 11014, Indian MSIHC Rules 1989 (Schedule 9), EU REACH Annex II and US OSHA HCS formats.
- Transport: Not regulated as dangerous goods (ADR / IMDG / IATA).

The information in this data sheet is based on our present knowledge and experience and is given in good faith. It does not constitute a warranty of specific properties or suitability for a particular application. Users should carry out their own tests. ZEEL PRODUCT accepts no liability for use outside our recommendations.