

ZEELCHEM™ 111 — ATMP 50

ATMP 50 % — Amino Trimethylene Phosphonic Acid

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™ 111 ATMP 50
Chemical name	ATMP 50 % — Amino Trimethylene Phosphonic Acid
Synonyms / abbreviation	ATMP
CAS No.	6419-19-8
Molecular formula	$N(CH_2PO_3H_2)_3$
Molecular weight	299.05
Category	Water Treatment Phosphonate
HS code (indicative)	2931.49
Physical form	Colourless to light-yellow transparent liquid

PRODUCT DESCRIPTION

ZEELCHEM™ 111 is ATMP (amino trimethylene phosphonic acid, also called NTMP) supplied as a 50 % solution. It has excellent chelating ability, very good threshold inhibition of calcium carbonate scale and lattice-distortion activity, and markedly better hydrolytic stability than inorganic polyphosphates.

ATMP is one of the most cost-effective phosphonates for controlling carbonate scale in cooling water and low-pressure boilers. At higher doses it also provides corrosion inhibition, particularly in combination with zinc salts, and it is widely blended with HEDP and polymers in multifunctional treatment programmes.

Its strong sequestering power for iron, copper and alkaline-earth metals also makes ATMP useful in textile and dyeing auxiliaries, detergent formulations, metal surface treatment and as a component of RO antiscalants.

KEY FEATURES & BENEFITS

- Excellent threshold inhibition of $CaCO_3$ scale
- Strong chelation of Ca, Mg, Fe and Cu ions
- Good hydrolytic stability vs. polyphosphates
- Corrosion inhibition with zinc salts
- Cost-effective for high-volume programmes
- Compatible with polymers and azoles

TYPICAL SPECIFICATIONS

Parameter	Specification	Test method
Appearance	Colourless to light-yellow transparent liquid	Visual (25 °C, clear glass)
Active acid (as ATMP)	≥ 50.0 %	Ion chromatography / titration

Parameter	Specification	Test method
Phosphorous acid (as PO_3^{3-})	$\leq 3.5 \%$	Ion chromatography / iodometric
Phosphoric acid (as PO_4^{3-})	$\leq 0.8 \%$	Spectrophotometric (molybdate)
Chloride (as Cl^-)	$\leq 2.0 \%$	Argentometric titration
pH (1 % aqueous solution)	≤ 2.0	pH meter, 1 % aq., 25 °C
Density at 20 °C	$\geq 1.30 \text{ g/cm}^3$	Density bottle / hydrometer, 20 °C
Iron (as Fe^{3+})	$\leq 20 \text{ mg/L}$	Spectrophotometric (1,10-phenanthroline)

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

APPLICATIONS

- Recirculating cooling water
- Low-pressure boilers
- Oilfield water injection and pipelines
- Textile and dyeing auxiliaries
- Detergents and cleaners
- Metal surface treatment
- RO antiscalant formulations

DOSAGE & METHOD OF USE

1 – 20 mg/L as a scale inhibitor; 20 – 60 mg/L as a corrosion inhibitor in combination with zinc or other inhibitors. Dosage should be confirmed from water analysis.

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

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

STORAGE & SHELF LIFE

Store in original closed HDPE / stainless-steel containers in a cool, dry, well-ventilated and shaded area away from strong alkalis and oxidisers. Avoid freezing and prolonged direct sunlight. Shelf life: 12 months in unopened packing.

SAFETY & HANDLING



Signal word: **DANGER**

H290: May be corrosive to metals.

H314: Causes severe skin burns and eye damage.

Acidic product. Wear chemical goggles, nitrile/PVC gloves and protective clothing. In case of eye or skin contact, rinse with plenty of water for at least 15 minutes and seek medical advice. Refer to the ZEELCHEM™ SDS (GHS / CLP 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: UN 3265, CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S., Class 8, PG III (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.