

ZEELCHEM™ 131 — DTPMP

DTPMP — Diethylene Triamine Penta (Methylene 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™ 131 DTPMP
Chemical name	DTPMP — Diethylene Triamine Penta (Methylene Phosphonic Acid)
Synonyms / abbreviation	DTPMP / DTPMPA
CAS No.	15827-60-8
Molecular formula	$C_9H_{28}N_3O_{15}P_5$
Molecular weight	573.20
Category	Water Treatment Phosphonate
HS code (indicative)	2931.49
Physical form	Amber to brown transparent liquid

PRODUCT DESCRIPTION

ZEELCHEM™ 131 is DTPMP (diethylene triamine penta(methylene phosphonic acid), DTPMPA) supplied as a 50 % solution. With five phosphonic groups and three nitrogen atoms per molecule, it is the strongest sulphate-scale inhibitor in the phosphonate family and remains effective at high pH and at temperatures above 210 °C.

DTPMP is the phosphonate of choice where calcium sulphate, barium sulphate and strontium sulphate scales are the main risk, as in oilfield produced-water reinjection, sea-water injection and high-sulphate cooling water. It also gives good carbonate inhibition in alkaline conditions where other phosphonates lose activity.

Its powerful chelation of transition metals makes DTPMP an effective hydrogen peroxide stabiliser in textile and pulp bleaching, and a sequestant in detergents and industrial cleaners.

KEY FEATURES & BENEFITS

- Best-in-class inhibition of $BaSO_4$, $SrSO_4$ and $CaSO_4$ scale
- Effective at high pH and high temperature (> 210 °C)
- Strong chelation of Fe, Mn, Cu and alkaline-earth metals
- Hydrogen peroxide stabiliser for bleaching
- Good carbonate inhibition in alkaline water
- Low corrosivity to metals at use dilutions

TYPICAL SPECIFICATIONS

Parameter	Specification	Test method
Appearance	Amber to brown transparent liquid	Visual (25 °C, clear glass)
Active acid (as DTPMP)	≥ 50.0 %	Ion chromatography / titration

Parameter	Specification	Test method
Phosphorous acid (as PO_3^{3-})	$\leq 3.0 \%$	Ion chromatography / iodometric
Chloride (as Cl^-)	12.0 – 17.0 % (standard grade); low-chloride grade on request	Argentometric titration
pH (1 % aqueous solution)	≤ 2.0	pH meter, 1 % aq., 25 °C
Density at 20 °C	$\geq 1.35 \text{ g/cm}^3$	Density bottle / hydrometer, 20 °C
Iron (as Fe^{3+})	$\leq 35 \text{ mg/L}$	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

- Oilfield scale squeeze and reinjection
- High-sulphate cooling water
- Boiler water treatment
- Textile and pulp peroxide bleaching
- Detergents and industrial cleaners
- RO antiscalant formulations

DOSAGE & METHOD OF USE

1 – 30 mg/L as a scale inhibitor depending on sulphate and barium levels; higher doses in squeeze treatments. As a peroxide stabiliser, 0.5 – 2 g/L of bleach liquor is typical.

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.