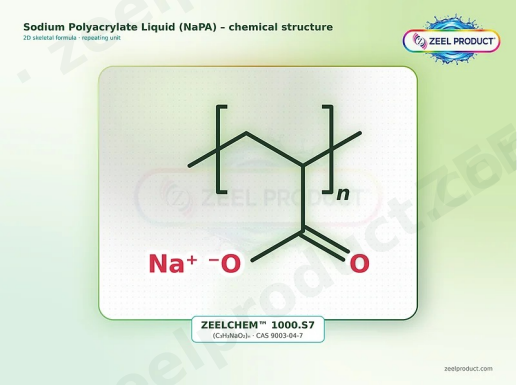
TECHNICAL DATA SHEET (TDS)

Low Molecular Weight Sodium Polyacrylate Liquid — ZEELCHEM™ 1000.S7

Neutral-pH sodium polyacrylate dispersant for water treatment, ceramics, pigments, paper, detergents and mineral slurries.



Product code	ZEELCHEM™ 1000.S7
Chemical type	Sodium Polyacrylate Liquid
CAS No.	9003-04-7
HS Code	3906 90 90

1. Product description

ZEELCHEM™ 1000.S7 is a low molecular weight sodium polyacrylate liquid, the neutralised sodium salt of polyacrylic acid. With a near-neutral pH, it gives the dispersing and scale-control power of polyacrylate without the handling issues of an acid. It is safer for operators, easier on mild steel equipment, and can be added directly to pH-sensitive processes.

Besides water treatment, sodium polyacrylate is one of the most widely used industrial dispersants and deflocculants. It lowers the viscosity of ceramic slips, calcium carbonate, kaolin and TiO_2 slurries, paper coating colours, paints and detergent slurries, so they run at higher solids with less water and energy. ZEEL PRODUCT manufactures ZEELCHEM™ 1000.S7 in Vadodara, Gujarat, and supplies it pan-India.

2. Typical properties

Parameter	Typical value
Appearance	Colourless to pale yellow, clear liquid
Chemical name	Sodium polyacrylate (sodium salt of polyacrylic acid)
Solid content	40.0 – 45.0 %
pH (1 % aqueous solution)	6.0 – 8.0
Density at 20 °C	≥ 1.25 g/cm³
Free monomer	≤ 0.50 %
Average molecular weight	3,000 – 8,000
Solubility	Completely miscible with water
CAS No.	9003-04-7
HS Code	3906 90 90

Values are typical and not a specification for any particular batch. Each dispatch is supplied with a batch Certificate of Analysis (COA).

3. Chemical identity & synonyms

Chemical name	Sodium polyacrylate (sodium salt of polyacrylic acid)
Formula / structure	$(C_3H_3NaO_2)_n$
Molecular weight (Mw)	3,000 – 8,000
CAS No.	9003-04-7
Also known as	NaPA; sodium polyacrylate solution; poly(acrylic acid) sodium salt; low molecular weight sodium polyacrylate; polyacrylate dispersant

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4. Mechanism of action

- Electrostatic dispersion. The polymer adsorbs on particles (clay, $CaCO_3$, pigments, scale nuclei) and gives them a strong negative surface charge. Particles repel each other, so slurries flow and solids stay suspended.
- Deflocculation. In ceramic slips and mineral slurries, it breaks the "card-house" structure of clay platelets. Viscosity drops sharply, so higher solids content can be pumped.
- Threshold scale control. In water it inhibits $CaCO_3$ and $CaSO_4$ the same way PAA does, but at neutral pH. That makes it ideal for direct dosing into neutral process water.

5. Applications

Application	Function
Cooling & process water at neutral pH	Scale inhibitor and dispersant where acid products are not wanted.
Ceramic tiles & sanitaryware	Deflocculant for body slips and glazes; reduces water in spray drying.
$CaCO_3$, kaolin & TiO_2 slurries	Grinding aid and dispersant for high-solids slurries.
Paper coating & paints	Pigment dispersant for coating colours and water-based paints.
Detergents & cleaners	Anti-redeposition, anti-encrustation co-builder.
Mining, cement & textiles	Grinding aid, sequestrant and dispersant.

6. Recommended dosage

Application	Typical dosage
Cooling / process water	5 – 20 mg/L as product
Ceramic slip deflocculant	0.2 – 0.8 % on dry clay
$CaCO_3$ / kaolin slurry	0.3 – 1.2 % on dry pigment
Paper coating colour	0.1 – 0.5 % on dry pigment
Detergent formulation	1 – 4 % of formulation

Optimum dosage depends on water analysis, temperature, cycles of concentration and system design. Contact ZEEL PRODUCT for a program recommendation.

7. Benefits

- Neutral pH, safer handling than acid PAA
- Strong dispersant and deflocculant
- Lower slurry viscosity at higher solids
- Reduces water and energy in drying
- Phosphate-free and non-toxic polymer
- Compatible with most process additives

8. Compatibility & formulation

ZEELCHEM™ 1000.S7 is compatible with other ZEELCHEM™ polymers, phosphonates (HEDP, ATMP, PBTC), zinc salts, molybdate, azoles (BTA, TTA) and common oxidising and non-oxidising biocides at use concentrations. Always run a compatibility test before blending concentrated products.

9. Handling, storage & shelf life

Store in closed HDPE or mild steel lined containers at 5 °C – 40 °C. Protect from freezing. Neutral pH, so it can be handled with standard dosing equipment. Shelf life is 12 months in original sealed packing.

Safety: Near-neutral, low hazard. May cause mild eye irritation. Wear goggles and gloves as good practice. Wash with water on contact. Refer to the ZEELCHEM™ 1000.S7 MSDS.

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10. Packing

Standard packs	60 kg HDPE carboy · 240 kg HDPE barrel
Documents	TDS, GHS MSDS and batch COA with every order
Supply	Pan-India dispatch from Vadodara, Gujarat

11. Quality & disclaimer

Manufactured under ISO 9001:2015, ISO 14001:2015 and ISO 22000:2018 certified management systems.

The information in this data sheet is based on our present knowledge and laboratory experience and is given in good faith. It does not constitute a warranty of properties for a specific application. Users must determine the suitability of the product for their own use and comply with applicable laws and regulations.

Prepared by: Technical Department

Approved by: QC Manager / Authorised Signatory

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