



Technical Data Sheet (TDS)

Product Name: Sodium Hexametaphosphate (SHMP)

CAS Number: 10124-56-8

EINECS Number: 233-343-1

Molecular Formula: (NaPO₃)₆

Molecular Weight: 611.77 g/mol

1. Product Description

Sodium Hexametaphosphate (SHMP) is a polyphosphate salt composed of a chain of metaphosphate units. It is a white, odorless powder or granule, soluble in water but insoluble in organic solvents.

Applications:

- **Food Grade:** Sequestrant, stabilizer, texturizer, water retention agent, dispersing agent.
- **Industrial Grade:** Water treatment, detergents, ceramics, textile processing, oil drilling fluids.

2. Typical Specifications

Parameter	Food Grade	Industrial Grade
Appearance	White powder/granules	White powder/granules
Assay (as P ₂ O ₅) %	≥ 68.0 – 70.0	≥ 67.0
Active Content (SHMP) %	≥ 65.0	≥ 64.0
pH (1% solution, 25 °C)	5.8 – 7.0	5.8 – 7.3
Water Insoluble Matter %	≤ 0.05	≤ 0.10
Iron (Fe) %	≤ 0.01	≤ 0.05
Heavy Metals (as Pb) %	≤ 0.001	—
Arsenic (As) %	≤ 0.0003	—
Fluoride (F) %	≤ 0.003	—
Loss on Ignition (575 °C, 4h)	≤ 1.0	≤ 1.5
Bulk Density	0.6 – 0.9 g/cm ³	0.6 – 0.9 g/cm ³

Parameter	Food Grade	Industrial Grade
Solubility	Easily soluble in water	Easily soluble in water

3. Applications

Food Grade SHMP

- Beverages: Prevents precipitation, stabilizes flavor.
- Meat & Seafood: Improves water-holding capacity, enhances texture.
- Dairy Products: Prevents protein coagulation, stabilizes emulsions.
- Bakery: Improves dough conditioning.

Industrial Grade SHMP

- **Water Treatment:** Scale inhibitor, corrosion control.
- **Detergents & Cleaners:** Dispersing agent, softens hard water.
- **Ceramics & Refractories:** Acts as a deflocculant.
- **Textiles & Leather:** Sequestering and dispersing agent.
- **Oil Drilling:** Improves mud fluidity.

4. Packaging & Storage

- **Packaging:** 25 kg / 50 kg woven bags with inner PE liner, or jumbo bags.
- **Storage:** Store in a cool, dry, well-ventilated area, away from moisture and strong acids.
- **Shelf Life:** 24 months if properly stored.

5. Safety & Handling

- SHMP is generally regarded as safe (GRAS) when used in food within prescribed limits.
- Avoid inhalation of dust; wear protective mask and gloves in industrial handling.
- Refer to MSDS for detailed safety measures.