



Technical Data Sheet (TDS)

Product Name: Sodium Hexametaphosphate (SHMP)

CAS Number: 10124-56-8

EINECS Number: 233-343-1

Molecular Formula: $(\text{NaPO}_3)_6$

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_2O_5)	%	$\geq 68.0 - 70.0$	≥ 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.
-