

Safety Data Sheet (SDS / MSDS)

Nano Hydroxyapatite (Nano-HAP)

Prepared in accordance with GHS Rev. 8 / OSHA HazCom 2012

SECTION 1: Identification

Product Name	Nano Hydroxyapatite (Nano-HAP)
Recommended Use	Raw material ingredient for dental remineralization formulations, bone-graft material research, and cosmetic preparations.
Manufacturer/Supplier	Ochnology Solution Pvt. Ltd.
Address	B-153, Sector-4, Defence Colony, Dehradun, Uttarakhand, India – 248001
Contact	projects@ochnology.com, bd@ochnology.com +91 9286823642/43

SECTION 2: Hazards Identification

Nano Hydroxyapatite is a calcium phosphate compound generally regarded as biocompatible and of low inherent toxicity (it is chemically similar to the mineral component of bone and tooth enamel). As a fine/nano-scale powder, it may cause mechanical irritation and warrants standard dust-handling precautions.

GHS Classification:

Signal Word: Not classified as hazardous under standard GHS criteria; handle as a nuisance/engineered-nanomaterial dust as a precaution.

Hazard Statements:

- May cause mechanical irritation to eyes and respiratory tract as a fine particulate.

Precautionary Statements:

- Avoid breathing dust; use adequate ventilation or local exhaust during powder handling.
- Wear eye protection and a dust mask during bag handling/weighing operations.

SECTION 3: Composition / Information on Ingredients

Component	CAS No.	Approx. %
Hydroxyapatite, $\text{Ca}_{10}(\text{PO}_4)_6(\text{OH})_2$, nanoparticle form	1306-06-5	$\geq 95\%$
Residual moisture / processing aids	Mixture	$\leq 5\%$

SECTION 4: First-Aid Measures

- Eye contact: Flush with water for several minutes; seek medical attention if irritation persists.
- Skin contact: Wash with soap and water.
- Inhalation: Move to fresh air; seek medical attention if respiratory discomfort persists.
- Ingestion: Not an anticipated route of exposure for a raw material; rinse mouth with water if dust ingested.

SECTION 5: Fire-Fighting Measures

- Non-combustible inorganic powder.
- Use extinguishing media appropriate to the surrounding fire.

SECTION 6: Accidental Release Measures

- Sweep or vacuum (HEPA-filtered) to minimise dust dispersion; avoid dry sweeping of fine powder.
- Collect in a suitable labelled container.

SECTION 7: Handling and Storage

- Store in a dry, sealed container away from moisture.
- Avoid generating dust during transfer/weighing; use local exhaust ventilation where practical.

SECTION 8: Exposure Controls / Personal Protection

As an engineered nanomaterial, precautionary exposure controls are recommended during dust-generating operations.

- No specific occupational exposure limit established; general nuisance-dust guidance (e.g., OSHA PEL 15 mg/m³ total dust) applies as a precaution
- Respiratory protection: N95/P100 respirator during powder handling
- Eye protection: Safety glasses
- Hand protection: Standard work gloves

SECTION 9: Physical and Chemical Properties

Appearance	White powder
Odour	None
Particle Size	20 – 80 nm (typical)
Ca/P Molar Ratio	≈ 1.67 (stoichiometric)
Solubility in Water	Insoluble; slightly soluble in dilute acids

SECTION 10: Stability and Reactivity

- Stable under normal conditions of storage and use.
- Soluble in strong acids; avoid contact with concentrated acids.

SECTION 11: Toxicological Information

- Generally regarded as biocompatible and of low toxicity based on its chemical similarity to natural bone/enamel mineral.
- As with any fine/nano powder, unnecessary inhalation should be avoided as a general precaution.

SECTION 12: Ecological Information

- Not expected to be hazardous to aquatic life based on low solubility and inert mineral nature.

SECTION 13: Disposal Considerations

- Dispose of per local solid waste regulations; not classified as hazardous waste.

SECTION 14: Transport Information

Not classified as dangerous goods for transport.

SECTION 15: Regulatory Information

- Supplied as a raw material ingredient; not a finished dental, medical, or cosmetic product.
- Buyers are responsible for their own formulation testing and regulatory clearance for the intended end-use market.

SECTION 16: Other Information

This SDS reflects the product as supplied in raw-material form. Finished-product (dental, cosmetic, or medical-device) safety assessment and regulatory clearance is the responsibility of the formulator/buyer.

Disclaimer: Information is provided as a general guide based on available data and is subject to revision without notice. Buyers/users should conduct their own risk assessment and confirm suitability for their specific process and application.