

Technical Data Sheet (TDS)

1. Product Overview

- **Product Name:** Talc Powder (Asbestos-Free)
- **English Name:** Talc Powder
- **CAS Number:** 14807-96-6
- **Formula:** $3\text{MgO} \cdot 4\text{SiO}_2 \cdot \text{H}_2\text{O}$ (Hydrated Magnesium Silicate)
- **Molecular Weight:** 379.27 g/mol
- **Product Characteristics:** Natural hydrated magnesium silicate mineral, asbestos-free white fine powder, high whiteness, mild alkaline. Non-combustible, chemically stable, excellent lubricity, fire resistance and electrical insulation properties. Insoluble in water, reacts with strong acids, good filling and reinforcing effect for polymers. Ultra-low impurity content, uniform particle size, high oil absorption value, suitable for plastic, rubber, coating, papermaking, cosmetic and ceramic applications. Non-toxic to the environment, long storage life under dry conditions.

2. Technical Specifications (Industrial Grade, Asbestos-Free)

Item	Specification
Appearance	White fine crystalline powder
Whiteness (CIE)	≥ 95%
SiO ₂ Content	60.0-65.0%
MgO Content	28.0-32.0%
Fe ₂ O ₃ Content	≤ 0.05%
Al ₂ O ₃ Content	≤ 0.5%
Moisture Content	≤ 0.2%
Ash Content	≤ 0.1%
Particle Size (D50)	3-5 μm
pH Value (5% aq. suspension)	8.0-9.5
Oil Absorption Value	25-35 g/100g
Asbestos Content	Negative
Heavy Metals (Pb)	≤ 5 ppm
Density (25°C)	2.70-2.80 g/cm ³
Bulk Density	0.8-1.0 g/cm ³
Solubility	insoluble in water; soluble in strong acids

3. Product Advantages

1. **Asbestos-Free & High Purity:** 100% asbestos-free with 99.9% purity; ultra-low heavy metal/iron oxide content; meets international safety standards for industrial/cosmetic use.
2. **High Whiteness & Uniform Particle Size:** ≥95% CIE whiteness, narrow particle size distribution (D50 3-5μm); good dispersibility, improves product appearance and uniformity.
3. **Excellent Filling & Reinforcing Effect:** Good compatibility with plastic/rubber/coating raw materials; improves product hardness, strength and scratch resistance; reduces production cost.
4. **Superior Physical Properties:** Excellent lubricity, fire resistance and electrical insulation; suitable for lubricants, fire-resistant materials and electrical components.
5. **Good Chemical Stability:** Stable under normal storage/processing conditions; mild alkaline, no reaction with most organic/inorganic raw materials (excluding strong acids).
6. **Long Storage Life:** 36-month shelf life under dry conditions; slight caking in high humidity (easily re-dispersed), no degradation.

4. Application Fields

- **Plastic Industry:** Filler for PP, PE, PVC, ABS and engineering plastics; improves product rigidity, heat resistance and dimensional stability; reduces shrinkage; addition amount 5-20% (w/w).



NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
Email:marketing01@newayphc.com; Phone:+86-021-50350029 <https://www.newayphc.com>

- **Rubber Industry:** Reinforcing filler for natural rubber/synthetic rubber; improves rubber tensile strength, wear resistance and tear resistance; reduces heat generation during vulcanization; addition amount 3-15% (w/w).
- **Coating & Paint Industry:** Filler for water-based/oil-based coatings, industrial paints and architectural coatings; improves film hiding power, scratch resistance and weather resistance; high whiteness reduces pigment usage; addition amount 10-30% (w/w).
- **Papermaking Industry:** Sizing agent and filler for cultural paper, packaging paper and coated paper; improves paper smoothness, whiteness and printability; reduces paper brittleness; addition amount 5-10% (w/w).
- **Cosmetic Industry:** Raw material for face powder, foundation, lipstick and body powder (cosmetic grade); improves product texture, oil absorption and spreadability; mild and non-irritating to skin.
- **Other Fields:** Ceramic glaze raw material (improves glaze smoothness); pharmaceutical excipient (pharmaceutical grade); lubricant for metal processing; fire-resistant material for construction.

5. Usage Methods

- **Plastic Filler:** Mix talc powder with plastic resin (PP/PE/PVC) at a ratio of 5-20% (w/w); add coupling agent (1-2% w/w) to improve compatibility; mix evenly in a high-speed mixer (80-100°C); process by injection molding/extrusion.
- **Rubber Reinforcing:** Add talc powder (3-15% w/w) to rubber compound during mixing; mix with rubber, carbon black and vulcanizing agent at 60-80°C; vulcanize at 140-160°C to obtain finished rubber products.
- **Coating Filler:** Disperse talc powder in coating base material (water/resin) with a dispersant (0.5-1% w/w); grind to D90 <10µm with a sand mill; add pigment/additive and stir evenly; adjust coating viscosity before application.
- **Papermaking Sizing:** Add talc powder (5-10% w/w) to pulp during papermaking; mix evenly with pulp (60-70°C); adjust pH to 7.0-8.0; form paper and dry at 100-120°C.
- **Key Operation:** Use coupling agent for polymer applications to improve compatibility; disperse fully to avoid agglomeration; avoid mixing with strong acids; keep dry during processing to prevent caking.

6. Packaging & Storage

- **Packaging Specifications:** 25 kg coated woven bags (with PE inner liner), 50 kg HDPE drums, 1000 kg FIBC (flexible intermediate bulk containers, dust-proof); cosmetic/pharmaceutical grade in sealed aluminum foil bags; customized packaging available upon request.
- **Storage Conditions:** Cool, dry, well-ventilated warehouse ($\leq 30^{\circ}\text{C}$, humidity $\leq 70\%$ RH); store in sealed packaging; avoid direct sunlight, rain and high humidity; keep away from strong acids, food and medicines (industrial grade); store cosmetic/pharmaceutical grade in a dedicated clean area.

7. Safety & Protection

- **Mandatory PPE:** Wear chemical splash goggles, N95 dust mask, nitrile gloves and full protective suit for all handling operations; face shield and PAPR for bulk processing/spills.
- **Dust Control:** Operate in well-ventilated area with local exhaust ventilation and dust collection system; use wet processing to reduce dust generation; eliminate all ignition sources to prevent dust explosion.

8. Quality Assurance

- Manufactured under ISO 9001 (quality), ISO 14001 (environmental) and GMP (cosmetic/pharmaceutical) management systems; strict raw material inspection (asbestos detection) and production process control.
- Each batch is tested for chemical composition, physical properties and asbestos content; accompanied by a Certificate of Analysis (COA) and asbestos-free certification to ensure compliance with international standards.