

Technical Data Sheet (TDS)

1. Product Overview

- **Product Name:** Paraffin Wax
- **English Name:** Paraffin Wax
- **CAS Number:** 8002-74-2
- **Formula:** C_n H_{2n+2} (n=20-40, Alkane Mixture)
- **Molecular Weight:** 282.5-565.1 g/mol (variable)
- **Product Characteristics:** Petroleum-derived high-purity alkane mixture, white solid flake/pellet, odorless, low volatility, chemically stable. Combustible when heated, melts at 58-62°C, good mold release, lubrication and insulation properties. Low oil content, stable melting point, uniform physical properties, suitable for rubber & plastic processing, candle production, coating additives, papermaking and cosmetic applications. Insoluble in water, soluble in organic solvents, long storage life under sealed conditions.

2. Technical Specifications (Industrial Grade)

Item	Specification
Appearance	White solid flake/pellet
Melting Point (Drop)	58.0-62.0°C
Oil Content	≤ 0.5%
Penetration (25°C, 100g)	18-25 dmm
Ash Content	≤ 0.05%
Moisture Content	≤ 0.1%
Color (Saybolt)	≥ +20
Sulfur Content	≤ 50 ppm
Needle Coke Content	Negative
Density (25°C)	0.90-0.92 g/cm ³
Flash Point (Closed Cup)	≥ 180°C
Solubility	Insoluble in water/ethanol; soluble in mineral oil

3. Product Advantages

1. **High Purity & Low Impurities:** 99.8% purity with ultra-low sulfur/ash content; no needle coke, ensures stable performance in industrial applications.
2. **Stable Physical Properties:** Narrow melting point range (58-62°C), low oil content, uniform penetration; consistent quality between batches.
3. **Excellent Mold Release & Lubricity:** Good demolding effect for rubber/plastic products; reduces friction between raw materials and equipment, improves processing efficiency.
4. **Good Insulation & Thermal Stability:** Excellent electrical insulation and thermal insulation properties; suitable for electrical and thermal insulation materials.
5. **Easy Processing:** Melts at low temperature (80-100°C), good fluidity in molten state; easy to mix with other raw materials (resin, rubber, pigment).
6. **Long Storage Life:** 24-month shelf life under sealed conditions; no oil loss or degradation at room temperature, suitable for long-term storage and transportation.

4. Application Fields

- **Rubber & Plastic Industry:** Mold release agent for rubber products, plastic injection molding; lubricant for plastic processing; improves product surface smoothness and demolding efficiency.
- **Candle Production:** Core raw material for paraffin candles; high whiteness, stable burning, no black smoke; can be mixed with pigment/fragrance for scented/colored candles.
- **Coating & Paint Industry:** Additive for water-based/oil-based coatings; improves film flexibility, scratch resistance and water resistance; addition amount 2-5% (w/w).

- **Papermaking Industry:** Sizing agent for paper production; improves paper water resistance and smoothness; suitable for packaging paper and cultural paper.
- **Cosmetic Industry:** Raw material for lipstick, cream, lotion; improves product texture and moisturizing effect (food/cosmetic grade only).
- **Other Fields:** Thermal insulation material for construction; wax emulsion for textile finishing; rust preventive for metal surface.

5. Usage Methods

- **Mold Release Agent (Rubber/Plastic):** Melt paraffin wax at 80-100°C; dilute with mineral oil (1:5 ratio); spray or brush on mold surface; air dry before processing (forming a thin wax film).
- **Candle Production:** Melt paraffin wax at 90-100°C; add pigment/fragrance (0.5-2% w/w) and stir evenly; pour into candle molds with wick; cool at room temperature for 2-4 hours.
- **Coating Additive:** Melt paraffin wax and mix with coating resin at 60-80°C; stir evenly to form a homogeneous mixture; adjust coating viscosity with solvent before application.
- **Optimal Conditions:** Melt at 80-100°C (avoid >200°C); stir evenly when mixing with other raw materials; cool to room temperature for solidification; store molten wax at 80-90°C for short-term use only.

6. Packaging & Storage

- **Packaging Specifications:** 25 kg HDPE woven bags (flake), 25 kg plastic buckets (pellet), 200 kg metal drums, 1000 kg FIBC (flexible intermediate bulk containers); customized packaging available upon request.
- **Storage Conditions:** Cool, dry, well-ventilated warehouse ($\leq 30^{\circ}\text{C}$); store in sealed packaging; avoid direct sunlight, heat sources and open flame; keep away from strong oxidizers and acids; separate from food/medicines.
- **Shelf Life:** 24 months (unopened, specified conditions); 6 months after opening (seal tightly with plastic wrap/tape to prevent oil loss).
- **Transportation:** Non-dangerous goods (solid); transport by ordinary vehicles; avoid collision, direct sunlight and high temperature; do not transport with strong oxidizers/open flame; molten paraffin complies with Class 9 transport regulations.

7. Safety & Protection

- Wear safety goggles, nitrile gloves and dust mask for solid paraffin handling; wear heat-resistant gloves, face shield and organic vapor respirator for melting operations.
- Avoid molten wax contact with skin/eyes (causes thermal burns); rinse burns with cold water for 15 minutes and seek medical attention if blistering occurs.
- Do not heat paraffin wax above 200°C (produces toxic fumes); operate melting equipment in well-ventilated area with local exhaust ventilation.
- No open flame near melting equipment; keep fire extinguishers (CO_2 /dry powder) on hand; no smoking in the work area.
- Wash hands thoroughly with soap and water after handling; no eating/drinking/smoking in the work area.

8. Quality Assurance

- Manufactured under ISO 9001 (quality) and ISO 14001 (environmental) management systems; strict raw material inspection and production process control.
- Each batch is tested for physical properties (melting point, oil content, penetration) and impurities; accompanied by a Certificate of Analysis (COA) to ensure compliance with industrial standards.
- Customized products available: food/cosmetic grade paraffin wax, low-melting point (48-52°C) and high-melting point (64-68°C) grades, micro-pellet paraffin wax.
- Provide technical support for product application: formulation optimization, processing temperature adjustment, mold release agent ratio design; on-site guidance for large-scale production.