纳维盈医化科技
NEWAY SINOPHC TECH

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Technical Data Sheet (TDS)

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1. Product Overview

- Product Name: Grape Seed Extract (GSE)
- Botanical Source: *Vitis vinifera* L. Premium Grape Seed (selected, deoiled)
- Active Marker: Proanthocyanidins (OPC) ≥95% (high-purity grade)
- Product Grade: Food/Health Care/Cosmetic/Pharmaceutical Grade
- Appearance: Pale yellow to light brown fine powder
- Solubility: Freely soluble in water, soluble in ethanol/glycerin
- Product Characteristics: Natural plant extract via **low-temperature water-ethanol extraction**; high-purity OPC (no organic solvent residue); strong antioxidant (20x stronger than vitamin C, 50x than vitamin E); low heavy metal/pesticide residue; stable quality under controlled storage; suitable for food, cosmetics, health care products and pharmaceutical formulation.

2. Technical Specifications (EP 10.0 / USP 45 / CP 2020)

Item	Specification	Test Method
Appearance	Pale yellow to light brown fine powder	Visual Inspection
Proanthocyanidins (OPC, dry basis)	≥95.0%	UV-Vis Spectrophotometry (Porter's method)
Loss on Drying	≤5.0%	105℃, 2h Gravimetry
Total Ash	≤4.0%	550℃ Ignition Method
Acid-Insoluble Ash	≤1.0%	Acid Digestion + Ignition
Heavy Metals (Pb)	≤5 ppm	AAS
Heavy Metals (As)	≤1 ppm	AFS
Heavy Metals (Cd)	≤0.5 ppm	AAS
Heavy Metals (Hg)	≤0.1 ppm	AFS
Pesticide Residues	Complies with EP/USP limits	GC-MS/MS
Microbiological Limits	Total aerobic ≤1000 cfu/g; M&Y ≤100 cfu/g; Pathogens negative	Microbiological Culture
Particle Size	95% passing 100 mesh	Sieve Analysis
pH Value (1% aq. solution)	3.5-5.5	Digital pH Meter
Bulk Density	0.40-0.60 g/cm³	Pycnometer Method
Water Solubility	Freely soluble (40 g/100 mL, 25℃)	Solubility Test

3. Product Advantages

1. **High-Purity OPC**: ≥95% proanthocyanidins (standardized content); batch-to-batch consistency; no active component fluctuation (meets global food/cosmetic/pharmaceutical standards).
2. **Green Extraction Process**: Low-temperature water-ethanol extraction (no organic solvent residue, no high-temperature degradation); deoiled grape seed raw material; no artificial additives/preservatives/colorants.
3. **Superior Antioxidant Activity**: Potent free radical scavenger; protects cells from oxidative damage; 20x stronger than vitamin C, 50x than vitamin E; non-toxic and high bioavailability.
4. **Excellent Formulability**: Freely soluble in water (no solubilizer needed); compatible with all common food/cosmetic/pharmaceutical excipients; stable in neutral/acidic formulations (pH 3.5-7.0).
5. **Multi-Application & Safety**: GRAS certified; ultra-low heavy metal/pesticide residue; safe for food/cosmetic/pharmaceutical use; no special handling/transport restrictions (non-hazardous).

4. Application Fields

- **Cosmetics**: Core antioxidant/anti-aging ingredient (serum, cream, toner, mask); scavenges skin free radicals, delays aging, improves skin elasticity, fades fine lines and pigmentation; suitable for all skin types.

- **Health Care Products**: Vascular health/dietary supplements; antioxidant capsules/tablets; supports cardiovascular health, reduces oxidative stress, anti-fatigue and immune-boosting products.
- **Food Additives**: Natural high-efficiency antioxidant for oil, fat, meat, beverage and pastry; replaces synthetic antioxidants (BHA/BHT); extends food shelf life; adds functional antioxidant property.
- **Pharmaceuticals**: Intermediate for antioxidant/anti-inflammatory pharmaceutical formulations; adjuvant ingredient for cardiovascular and anti-aging drugs.

5. Usage & Formulation Guidelines

- **Formulation Compatibility**:
  - Cosmetics: Suitable for water-based/oil-based formulations; compatible with hyaluronic acid, glycerin, vitamin C, plant oils and all cosmetic excipients; optimal pH 3.5-6.0.
  - Food/Beverage: Freely soluble in water; compatible with sugar, maltodextrin, fruit juice and food excipients; add in the final production step (avoid high temperature >80℃).
  - Pharmaceuticals/Health Care: Suitable for solid (capsules, tablets) and liquid (oral liquids) dosage forms; compatible with lactose, starch, microcrystalline cellulose and pharmaceutical excipients.
- **Recommended Dosage**:
  - Cosmetics: 0.1-2.0% (w/w) (antioxidant/anti-aging); 0.5-3.0% (w/w) (skin repair).
  - Food Additive: 0.01-0.1% (w/w) (antioxidant); 0.1-0.5% (w/w) (functional food).
  - Health Care/Pharmaceuticals: Adult daily dosage 100-300 mg (as pure OPC); formulated into 50-100 mg per capsule/tablet.
- **Processing Precautions**: Avoid high temperature (>80℃) and direct sunlight; control workshop humidity <70%; no contact with strong oxidizing agents/concentrated acids.

6. Packaging & Storage

6.1 Packaging Specifications

- 1 kg/bag (food/cosmetic-grade aluminum foil bag, vacuum sealed)
- 5 kg/10 kg/drum (sealed HDPE drum with inner aluminum foil bag)
- 25 kg/drum (food/cosmetic-grade fiber drum with inner aluminum foil bag, vacuum sealed)
- Custom small packaging (100g/500g) for small-batch orders (per customer requirements)

6.2 Storage Conditions

- Store in a **cool, dry, well-ventilated warehouse** at ≤25℃; keep container tightly sealed; avoid direct sunlight and high humidity (>70%).
- Incompatibilities: Strong oxidizing agents, concentrated acids, high temperature (>80℃).
- Shelf Life: **24 months** (unopened, specified conditions); 6 months after opening (resealed, dry).
- Segregation: Store separately from oxidizing agents/acids; may be stored with other natural plant extracts, food/cosmetic raw materials.

6.3 Transportation

- Non-hazardous goods; ordinary freight transport (no UN number/hazard labels); transport at ≤25℃; use sealed packaging to avoid moisture/dust/sunlight; no special transport restrictions.

7. Quality Assurance

- Extraction process complies with **GMP, ISO 9001 and ISO 22000** (food safety) certification; low-temperature green extraction (no organic solvent residue); complete production traceability system (from grape seed to finished extract).
- Each batch is accompanied by a batch-specific **COA** with full test results; all indexes meet EP/USP/CP standards; quality records retained for 5 years (GMP requirement).
- Strict raw material control: Selected deoiled grape seeds (no pest/disease); raw material heavy metal/pesticide residue detection; reject unqualified raw materials.
- Regular stability studies (accelerated/long-term); continuous extraction process optimization to ensure batch-to-batch consistency and stable antioxidant activity.