

Technical Data Sheet (TDS)

Version Date: 20 FEB 2026

1. Product Overview

- Product Name: Green Tea Extract (GTE)
- Botanical Source: *Camellia sinensis* (L.) Kuntze Fresh Young Leaf (one bud one leaf, premium grade)
- Active Markers: Tea Polyphenols $\geq 98\%$, EGCG $\geq 50\%$ (High Purity Standard)
- Product Grade: Food/Health Care/Cosmetic/Pharmaceutical Grade
- Appearance: Light yellow to pale green fine powder
- Solubility: Freely soluble in water, soluble in ethanol
- Product Characteristics: Natural plant extract extracted by water low-temperature extraction method; high-purity Tea Polyphenols and EGCG; no organic solvent residue; strong anti-oxidant, anti-inflammatory and anti-bacterial activity; 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	Light yellow to pale green fine powder	Visual Inspection
Tea Polyphenols (on dry basis)	$\geq 98.0\%$	UV-Vis Spectrophotometry
EGCG (on dry basis)	$\geq 50.0\%$	HPLC
Loss on Drying	$\leq 5.0\%$	105°C, 2h Gravimetry
Total Ash	$\leq 5.0\%$	550°C Ignition Method
Acid-Insoluble Ash	$\leq 1.0\%$	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 Tests	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)	4.0-6.0	Digital pH Meter
Bulk Density	0.35-0.55 g/cm ³	Pycnometer Method

3. Product Advantages

1. **High Purity Active Components:** Tea Polyphenols $\geq 98\%$, EGCG $\geq 50\%$ (high-purity grade); fixed active component content; batch-to-batch consistency; no active component fluctuation (meets global food/cosmetic/pharmaceutical standards).
2. **Green & Safe Extraction:** Low-temperature water extraction process (no organic solvent residue, no high temperature degradation); no artificial additives, preservatives or colorants; ultra-low heavy metal/pesticide residue; GRAS certified in US, safe for food/cosmetic/pharmaceutical use.
3. **Potent Multi-Biological Activity:** EGCG with strong anti-oxidant property (scavenge free radicals, 5x stronger than vitamin C); Tea Polyphenols with anti-inflammatory, anti-bacterial and lipid-lowering activity; widely used in anti-oxidant, anti-aging and weight loss products.
4. **Excellent Solubility & Stability:** Freely soluble in water (35 g/100 mL), soluble in ethanol; no solubilizer required for aqueous formulations; compatible with all common food/cosmetic/pharmaceutical excipients; 24-month long shelf life under cool dry dark storage; strong anti-oxidant property (resists self-oxidation).

5. **Ultra-Wide Application:** Available in food/health care/cosmetic/pharmaceutical grade; suitable for various dosage forms (powders, capsules, liquids, creams); meets different industry formulation requirements; non-hazardous (no special handling/transport restrictions).

4. Application Fields

- **Cosmetics:** Core anti-oxidant/anti-aging ingredient for skin care products (serum, cream, toner, mask); scavenge skin free radicals, delay skin aging, lighten spots and repair skin barrier; natural anti-bacterial ingredient for facial cleanser and body wash.
- **Health Care Products:** Anti-oxidant dietary supplements; lipid-lowering and weight loss functional products; liver protection and anti-fatigue health supplements; oral anti-oxidant capsules/tablets.
- **Food Additives:** Natural high-efficiency anti-oxidant for oil, fat, meat, beverage and pastry; replace synthetic anti-oxidants (BHA/BHT); extend food shelf life; add functional anti-oxidant property to food/beverage.
- **Pharmaceutical Intermediates:** Raw material for anti-oxidant and anti-inflammatory pharmaceutical formulations; adjuvant ingredient for liver protection and cardiovascular drugs; natural antibacterial raw material for topical drugs.

5. Usage & Formulation Guidelines

• Formulation Compatibility:

- Cosmetics: Suitable for water-based/oil-based skin care formulations; compatible with hyaluronic acid, glycerin, vitamin C, plant oils and other cosmetic ingredients; pH 4.0-6.0 is optimal.
- Food/Beverage: Freely soluble in water; compatible with sugar, maltodextrin, fruit juice and other food excipients; add in the final step of production (avoid high temperature >80°C).
- Pharmaceuticals/Health Care: Suitable for solid (capsules, tablets) and liquid (oral liquids) dosage forms; compatible with lactose, starch, microcrystalline cellulose and other pharmaceutical excipients.

• Recommended Dosage:

- Cosmetics: 0.1-2.0% (w/w) (anti-oxidant/anti-aging); 0.5-3.0% (w/w) (anti-bacterial/anti-inflammatory).
- Food Additive: 0.01-0.1% (w/w) (anti-oxidant); 0.1-0.5% (w/w) (functional food).
- Health Care/Pharmaceuticals: Adult daily dosage 500-1000 mg (as pure Tea Polyphenols); formulated into 100-200 mg per capsule/tablet.

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 cosmetic/food small batch orders (per customer requirements)

6.2 Storage Conditions

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

7. Quality Assurance

- Extraction process complies with **GMP, ISO 9001 and ISO 22000** (food safety) certification; low-temperature water green extraction (no organic solvent residue, no high temperature degradation); complete production traceability system (from fresh tea leaf to finished extract).
- Each batch is accompanied by a batch-specific **Certificate of Analysis (COA)** with full test results;