Green Tea Extract: Specification Sheet

Product Definition

Green Tea Extract is a natural plant extract produced from the dried fresh or tender leaves of **Camellia sinensis (L.) O. Kuntze** (family Theaceae, genus Camellia) using standardized processes including crushing, extraction, purification, concentration, and drying.

It is rich in active ingredients such as **tea polyphenols, catechins, (-)-Epigallocatechin Gallate (EGCG), caffeine, and amino acids**, retaining the original nutritional and bioactive properties of green tea, and complies with relevant industrial standards for food, health food, cosmetics, and pharmaceutical raw materials.

1. Basic Product Information

- Product Name: Green Tea Extract
- English Name: Green Tea Extract
- CAS No.: 84650-60-2 (Total Tea Polyphenols); 989-51-5 (EGCG)
- Botanical Source: Camellia sinensis (L.) O. Kuntze (Theaceae, Camellia)
- Extraction Part: Dried tender / mature leaves
- Appearance: Pale yellowish-brown to brownish-yellow fine powder, free of visible foreign impurities, with characteristic green tea aroma, no off-odor or caking
- Particle Size: ⩾95% passes through 80 – 100 mesh sieve; 100 – 200 mesh customizable per customer requirements
- Solubility: Freely soluble in warm water and 50% – 70% ethanol, partially soluble in methanol, insoluble in petroleum ether and diethyl ether

2. Core Technical Specifications

Item	Food Grade	Health Food Grade	Cosmetic Grade	Pharm. Grade
Total Tea Polyphenols (dry basis)	≥20.0%	≥40.0%	≥60.0%	≥90.0%
Total Catechins (dry basis)	≥15.0%	≥30.0%	≥50.0%	≥80.0%
EGCG (dry basis)	≥5.0%	≥15.0%	≥30.0%	≥50.0%
Caffeine (dry basis)	≤5.0%	≤3.0%	≤2.0%	≤1.0%
Moisture	≤8.0%	≤6.0%	≤5.0%	≤5.0%
Ash	≤7.0%	≤5.0%	≤4.0%	≤3.0%
Acid-Insoluble Ash	≤1.0%	≤1.0%	≤1.0%	≤1.0%
Total Heavy Metals	≤10.0 mg/kg	≤10.0 mg/kg	≤10.0 mg/kg	≤10.0 mg/kg
Lead (Pb)	≤0.5 mg/kg	≤0.3 mg/kg	≤0.1 mg/kg	≤0.1 mg/kg
Arsenic (As)	≤0.3 mg/kg	≤0.2 mg/kg	≤0.1 mg/kg	≤0.1 mg/kg
Mercury (Hg)	≤0.1 mg/kg	≤0.05 mg/kg	≤0.01 mg/kg	≤0.01 mg/kg
Cadmium (Cd)	≤0.1 mg/kg	≤0.05 mg/kg	≤0.01 mg/kg	≤0.01 mg/kg
Total Aerobic Plate Count	≤10000 CFU/g	≤5000 CFU/g	≤1000 CFU/g	≤100 CFU/g
Molds & Yeasts	≤100 CFU/g	≤50 CFU/g	≤10 CFU/g	≤10 CFU/g
Coliforms	≤30 MPN/100g	≤10 MPN/100g	Not Detected	Not Detected
Salmonella	Not Detected	Not Detected	Not Detected	Not Detected
Staphylococcus aureus	Not Detected	Not Detected	Not Detected	Not Detected
Escherichia coli	≤10 MPN/100g	≤3 MPN/100g	Not Detected	Not Detected
Residual Solvent (Ethanol)	≤500 ppm	≤500 ppm	≤500 ppm	≤200 ppm
pH (1% Aqueous Solution)	4.0 – 6.0	4.0 – 6.0	4.0 – 6.0	4.0 – 6.0
Pesticide Residues	Complies with domestic regulations as well as international regulations requirements			

3. Application Scope

♣ Functional Foods

Raw material for compressed tablets, solid beverages, oral liquids, meal replacements, tea bags, etc., with antioxidant, free radical-scavenging, and metabolic supporting functions.

♣ Health Foods

Raw material for antioxidant, immunity-enhancing, lipid-lowering, and weight-management health foods.

♣ Cosmetics

Raw material for antioxidant, anti-aging, brightening, soothing, and repairing skincare products: serums, creams, masks, toners, eye creams, etc.

♣ Pharmaceutical Intermediates

Raw material for TCM compound preparations, chemical excipients, and R&D of drugs with antioxidant, anti-inflammatory, and cardiovascular protective effects.

♣ Other Fields

Dietary supplements, pet health products, feed additives, etc.

4. Packaging Specifications

- Inner Package: Food-grade / Pharmaceutical-grade aluminum foil bag (vacuum packaging)
- Outer Package: Waterproof cardboard drum lined with food-grade plastic bag
- Standard Package: 25 kg/drum (Φ35 cm × H50 cm)
- Customizable: 1 kg/bag, 5 kg/bag, 10 kg/bag, 20 kg/drum, etc. Custom labeling available (in compliance with regulations).

5. Shelf Life

24 months (sealed original package under proper storage conditions).

For opened packages, use within 3 months and keep sealed.

6. Storage Conditions

Store sealed in a **cool, dry, ventilated and clean place**;

Temperature ≤25 ℃, relative humidity ≤60%;

Protect from direct sunlight, high temperature, high humidity and rain;

Keep away from oxidizers, odorous substances, toxic and hazardous materials; do not store with volatile or corrosive substances.

7. Transportation

- General Grades: Ambient temperature transportation (5 ℃ – 30 ℃), protect from rain, sunlight, heavy pressure, violent collision and inversion. Transported as general food / chemical raw materials; non-dangerous goods.
- Pharmaceutical Grade: Cold-chain transportation (2 ℃ – 8 ℃) recommended to ensure stability of active ingredients.

Remarks

This product complies with the following standards and regulations:

- China: Chinese Pharmacopoeia 2025 Edition (ChP), GB Food Standards, YY Pharmaceutical Excipient Standards
- International: USP, FCC, EU FC, EP, JP and other relevant requirements

Third-party test reports (SGS, Pony Testing, etc.) are available. Customized specification testing is supported.

Nutritional Composition Table of Green Tea Extract

(Per 100 g, typical Food Grade, Total Tea Polyphenols ⩾20.0%)

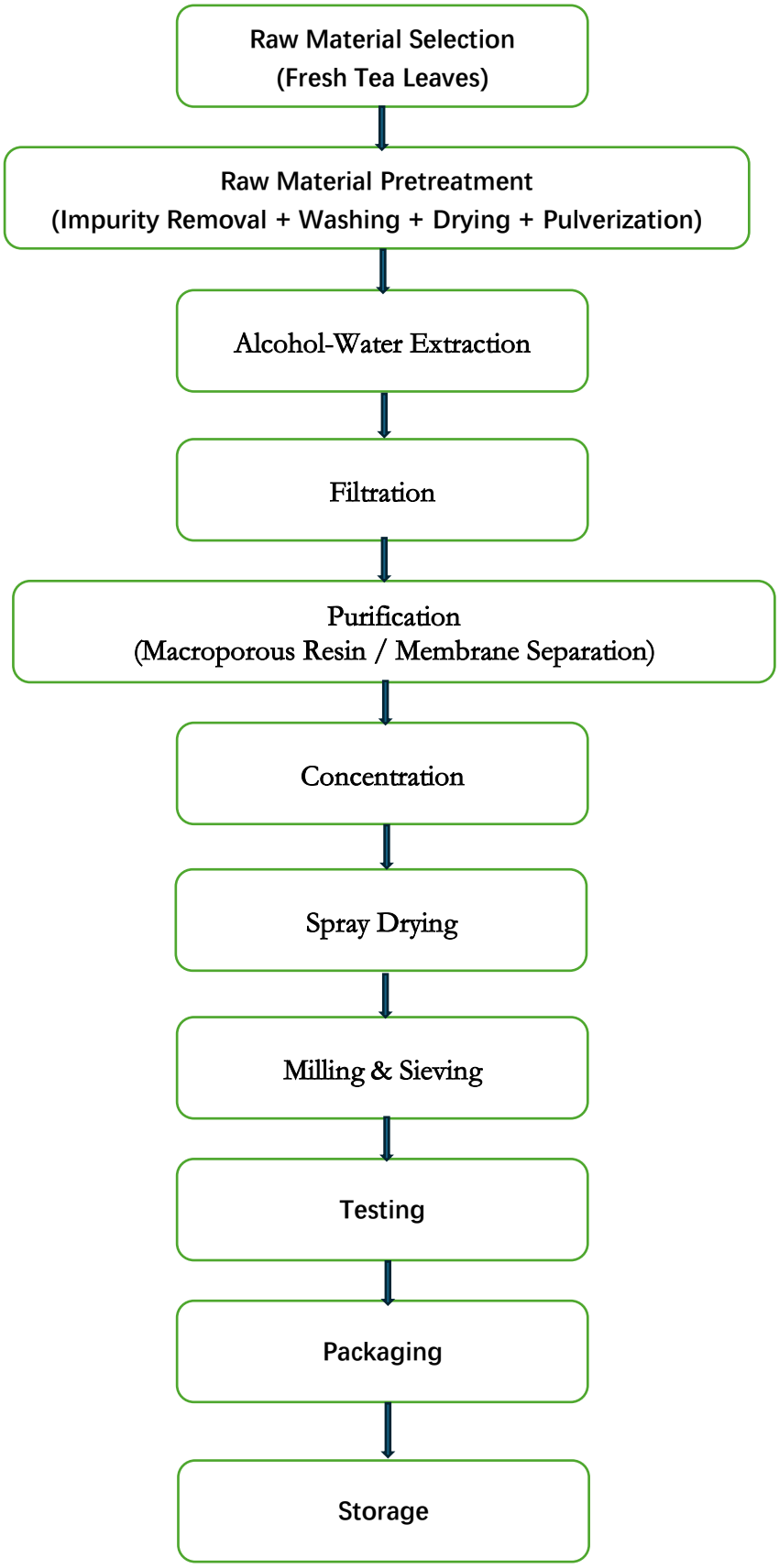
Nutrient	Content	NRV%
Energy	⩽1600 kJ	⩽19%
Protein	12.0 – 18.0 g	20% – 30%
Fat	⩽1.0 g	⩽2%
Carbohydrates	45.0 – 55.0 g	15% – 18%
Dietary Fiber	15.0 – 25.0 g	50% – 80%
Sodium	⩽20 mg	⩽1%
Total Tea Polyphenols	⩾20.0 g	—
Total Catechins	⩾15.0 g	—
EGCG	⩾5.0 g	—
Caffeine	⩽5.0 g	—
Free Amino Acids (mainly Theanine)	2.0 – 4.0 g	—
Ash	⩽7.0 g	—
Moisture	⩽8.0 g	—

Remarks

1. This table is compiled from test data of typical Food Grade Green Tea Extract. Active ingredients for Health Food, Cosmetic and Pharmaceutical Grades are adjusted per grade standards; basic nutrients vary slightly (⩽10%).
2. "—" indicates no official NRV established for these components.
3. Contents of active ingredients may slightly vary (⩽10%) due to origin, season, leaf tenderness, and extraction process, while still meeting grade specifications.
4. Additional testing for K, Ca, Fe, Zn, Theanine, etc., is available upon customer request.

Manufacturing Process Flow of Green Tea Extract

Manufacturing Process Flow Chart



Description of Critical Control Points (CCPs)

◘ Raw Material Control

Selected from high-altitude, pollution-free tea gardens; free of mold, rot, pests, and excessive pesticide residues; uniform tenderness. Each batch is inspected before production.

◘ Low-Temperature Drying

Drying temperature ⩽55 ℃, moisture controlled ⩽8.0% to prevent oxidative degradation of tea polyphenols and catechins. Prompt crushing after drying to reduce oxidation.

◘ Alcohol-Water Extraction

Ethanol concentration 50% – 70%, solid-liquid ratio 1:10 – 1:15, temperature 50 – 65 ℃. Ultrasound / microwave-assisted extraction can be applied to ensure active ingredient dissolution rate ⩾90%.

◘ Purification & Concentration

Macroporous resin adsorption or membrane separation to remove impurities, polysaccharides, proteins, etc., and improve purity of tea polyphenols / EGCG. Low-temperature vacuum concentration to protect heat-sensitive ingredients.

◘ Drying Control

Spray drying: inlet air 160 – 180 ℃, outlet air 70 – 90 ℃; or vacuum low-temperature drying to ensure good flowability, uniform particle size, and no caking.

◘ Full-Item Testing

Each batch is tested for active ingredients, moisture, ash, heavy metals, microorganisms, residual solvents, etc. Only qualified products are packaged and stored; data retained for traceability.

◘ Packaging, Storage & Transportation

Inner bag vacuum-sealed; outer drum waterproof and moisture-proof. Strict warehouse temperature and humidity control, classified storage. Re-inspection before delivery to ensure stable quality.