Specification Sheet of Ginseng Extract

Product Definition

Ginseng Extract is a natural plant extract produced from the dried roots and rhizomes of *Panax ginseng* C. A. Mey. (Araliaceae, Panax) through standardized processes including crushing, extraction, purification, and drying. It is rich in active ingredients such as ginsenosides (Rg1, Re, Rb1, etc.), polysaccharides, and amino acids, retaining the original nutritional and bioactive properties of ginseng and complying with relevant industrial standards.

1. Basic Product Information

- Product Name: Ginseng Extract
- English Name: Ginseng Extract
- CAS No.: 90045-38-8 (Total Ginsenosides), 78214-33-2 (Ginsenoside Rg1), 52286-59-6 (Ginsenoside Re), 41753-43-9 (Ginsenoside Rb1)
- Molecular Formula: $C_{42}H_{72}O_{14}$ (Ginsenoside Rg1), $C_{48}H_{82}O_{18}$ (Ginsenoside Re), $C_{54}H_{92}O_{23}$ (Ginsenoside Rb1)
- Molecular Weight: 801.01 (Ginsenoside Rg1), 947.16 (Ginsenoside Re), 1109.28 (Ginsenoside Rb1)
- Botanical Source: Dried roots and rhizomes of *Panax ginseng* C. A. Mey. (Araliaceae, Panax)
- Extraction Part: Dried roots and rhizomes
- Appearance: Pale yellow to yellowish-brown fine powder, free of visible impurities, with characteristic aromatic odor of ginseng, no off-odor or caking
- Particle Size: ≥95% passes through 80–100 mesh sieve (sieving method); 100–200 mesh customizable per customer requirements
- Solubility: Freely soluble in warm water and ethanol (50%–70%), partially soluble in methanol, insoluble in petroleum ether and diethyl ether; verified by visual inspection combined with solubility determination

2. Core Technical Specifications

Item	Food Grade	Health Food Grade	Cosmetic Grade	Pharm. Grade
Total Ginsenosides (calculated as Re, dry basis)	≥2.0%	≥8.0%	≥15.0%	≥20.0%
Ginsenoside Rg1 (dry basis)	≥0.3%	≥1.0%	≥2.0%	≥3.0%
Ginsenoside Re (dry basis)	≥0.2%	≥0.8%	≥1.8%	≥2.5%
Ginsenoside Rb1 (dry basis)	≥0.3%	≥1.2%	≥2.5%	≥3.5%
Ginseng Polysaccharides (dry basis)	≥5.0%	≥10.0%	≥12.0%	≥15.0%
Moisture	≤8.0%	≤6.0%	≤5.0%	≤5.0%
Ash	≤5.0%	≤4.0%	≤3.0%	≤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
Particle Size (80–100 mesh)	≥95%	≥95%	≥95%	≥95%
Residual Solvent (Ethanol)	≤500 ppm	≤500 ppm	≤500 ppm	≤200 ppm
pH (1% Aqueous Solution)	5.0–7.0	5.0–7.0	5.0–7.0	5.0–7.0
Pesticide Residue Limits	Complies with requirements of *Chinese Pharmacopoeia* 2025 Edition			

3. Application Scope

- **Functional Foods**: Raw material for dietary supplements, compressed tablets, solid beverages, functional oral liquids, health teas, etc., with anti-fatigue, immunity-enhancing, and memory-improving functions.
- **Health Foods**: Raw material for health foods approved for immunity enhancement, anti-fatigue, sleep improvement, blood lipid regulation, and anti-aging effects.
- **Cosmetics**: Raw material for antioxidant, anti-aging, soothing, moisturizing, and brightening skincare products (serums, creams, masks, toners, eye creams, etc.).
- **Pharmaceutical Intermediates**: Raw material for traditional Chinese medicine compound preparations, anti-fatigue and immunoregulatory drugs, used in R&D and production of TCM preparations and western medicine excipients.
- **Other Fields**: Health supplements, feed additives (livestock and poultry breeding), etc., to enhance nutritional efficacy.

4. Packaging Specifications

Inner: Food-grade / Pharmaceutical-grade aluminum foil bag (vacuum packaging); Outer: cardboard drum lined with waterproof plastic bag.

Standard: 25 kg/drum (Φ35 cm × H50 cm). Customizable: 1 kg/bag, 5 kg/bag, 10 kg/bag, 20 kg/drum, etc. Customer-specified labeling is available (compliant with relevant standards).

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 at 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, direct sunlight, heavy pressure, violent collision and inversion. Complies with transport regulations for general chemical / food raw materials; non-dangerous goods.
- **Pharmaceutical grade**: Cold-chain transportation (2 ℃–8 ℃) to ensure stability of active ingredients.

Remarks

Ginseng Extract complies with the following standards and regulations:

- China: ChP (*Chinese Pharmacopoeia* 2025 Edition), GB (Food Grade), YY (Pharmaceutical Grade); WHO; USA: USP, cGMP, FCC; EU: EP, EU FC; Japan: JP FC

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

Nutritional Composition Table of Ginseng Extract

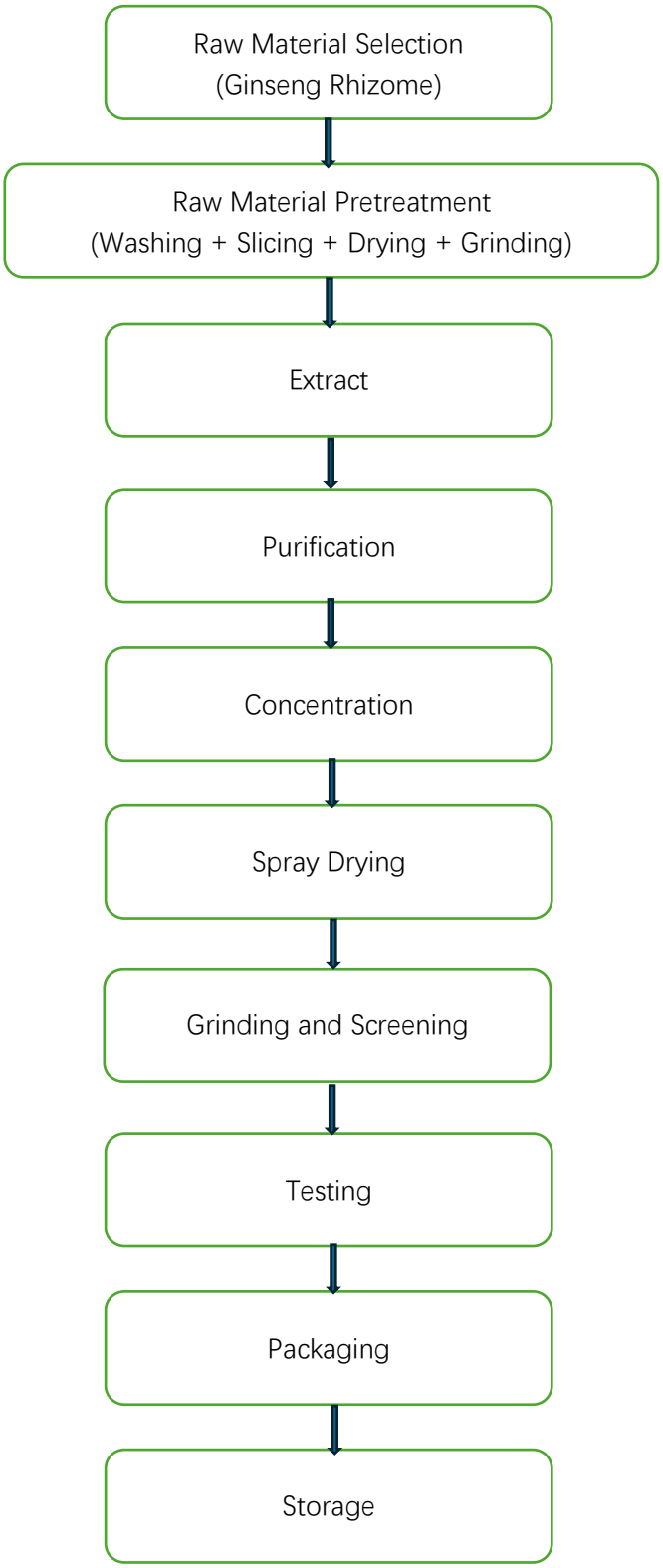
Reference basis: Per 100 g (typical Food Grade, Total Ginsenosides ≥2.0%, Ginseng Polysaccharides ≥5.0%)

Nutrient	Content	NRV%
Energy	≤2100 kJ	≤25%
Protein	10.0–15.0 g	17%–25%
Fat	≤1.5 g	≤3%
Carbohydrates	50.0–60.0 g	17%–20%
Dietary Fiber	12.0–18.0 g	40%–60%
Sodium	≤25 mg	≤1%
Total Ginsenosides	≥2.0 g	—
Ginseng Polysaccharides	≥5.0 g	—
Ginsenoside Rg1	≥0.3 g	—
Ginsenoside Re	≥0.2 g	—
Ginsenoside Rb1	≥0.3 g	—
Total Amino Acids	3.0–5.0 g	—
Ash	≤5.0 g	—
Moisture	≤8.0 g	—

Remarks

- This table is compiled based on test data of typical Food Grade Ginseng Extract. Functional ingredient contents for Health Food, Cosmetic and Pharmaceutical Grades are adjusted per grade standards; basic nutrients vary slightly (≤10%).
- "—" indicates no official NRV established for functional ingredients and total amino acids.
- Contents of total ginsenosides, polysaccharides and individual ginsenosides may slightly vary (≤10%) due to growing region, cultivation years and extraction process, while still meeting grade specifications.
- Mineral contents (K, Ca, Fe, Zn, etc.) and specific amino acid profiles can be additionally tested and added upon customer request.
- Health Food and Pharmaceutical Grade products can be supplemented with high-precision functional ingredient test data to meet corresponding industry standards.

Manufacturing Process Flowchart of Ginseng Extract



Description of Critical Control Points (CCPs)

- **Raw Material Selection**: Stable supply of high-quality ginseng from core producing areas (e.g., Changbai Mountain, Jilin). Select roots and rhizomes free of mold, rot, pests, diseases and impurities; cultivation years ≥4 years to ensure consistent quality and qualified active ingredients. Each batch must pass inspection before production.
- **Low-Temperature Drying**: Dry at ≤55 ℃ after washing, strictly control drying time to ensure moisture ≤8.0%, prevent thermal degradation of ginsenosides and polysaccharides, and avoid mold. Crush promptly after drying to reduce oxidation of active components.
- **Alcohol-Water Extraction**: Precisely control ethanol concentration (50%–70%), solid-liquid ratio (1:10–1:15), temperature (55 ℃–65 ℃) and extraction time. Ultrasonic-assisted extraction can be applied to maximize retention of active ingredients and achieve extraction recovery ≥90%. Monitor temperature and stirring speed in real time for uniform extraction.
- **Purification**: Use macroporous resin chromatography; precisely control sample flow rate, eluent concentration and elution speed to effectively remove macromolecular and inactive impurities, improving ginsenoside purity. Concentrate eluate promptly to avoid active ingredient degradation.
- **Spray Drying**: Control inlet air temperature (180 ℃–200 ℃), outlet air temperature (80 ℃–90 ℃) and feed rate to ensure good flowability, uniform particle size and no caking, while maintaining active ingredient stability. Seal immediately after drying to prevent moisture absorption and oxidation.
- **Full-Item Testing**: Conduct complete factory inspection for each batch, including active ingredients (total ginsenosides, individual ginsenosides, polysaccharides), moisture, ash, heavy metals, microorganisms, residual solvents, etc. Only qualified products are packaged and stored; test data are retained for traceability. Unqualified products are strictly prohibited from delivery and shall be reworked or discarded per regulations.
- **Packaging & Storage**: Inner package vacuum-sealed; outer package treated for water and moisture proofing. Strictly control warehouse temperature and humidity, store in classified areas, separate from odorous and hazardous materials. Re-sample before delivery to ensure stable quality.