Specification Sheet of Ginkgo Biloba Leaf Extract

1.1 Product Definition

This product is a fine powdered extract prepared from the dried leaves of *Ginkgo biloba L.* (Ginkgoaceae, Ginkgo) through processes including washing, crushing, heating reflux extraction, macroporous resin purification, filtration, concentration, drying, pulverization and sieving.

It retains the inherent characteristic odor and active ingredients of ginkgo leaves, **without any preservatives, pigments or fragrances**.

It can be widely used in food, health food, cosmetics, pharmaceutical intermediates and other fields, conforming to international standards for food supplements and raw materials, with safe and controllable quality.

1.2 Basic Product Information

- Product Name: Ginkgo Biloba Leaf Extract
- English Name: Ginkgo Biloba Leaf Extract
- Botanical Name: *Ginkgo biloba L.*
- INCI Name: Ginkgo Biloba Leaf Extract
- CAS No.: 90045-36-2
- EN No.: 289-882-2
- UN No.: None (Non-dangerous goods, no corresponding UN number)
- Part Used: Dried leaves
- Extraction Solvent: Food-grade ethanol/water (used singly or in combination)
- Specifications:
    - Total Flavonol Glycosides: ≥24.0% (HPLC)
    - Total Terpene Lactones: ≥6.0% (HPLC)
    - Ginkgolic Acids: ＜5 ppm (HPLC)

The above indicators can be customized according to customer requirements.

- Extraction Ratio: 10:1, 20:1; 5:1~30:1 is available upon customization

1.3 Characteristics

- Appearance: Light yellowish-brown to brownish fine powder, free of caking and obvious impurities
- Odor: Characteristic odor of ginkgo biloba leaves, no pungent or moldy odor
- Taste: Slightly bitter, consistent with the inherent characteristics of ginkgo leaves, no abnormal taste
- Solubility: Soluble in water and dilute ethanol; water-soluble grade product with solubility ≥95.0% (25℃), convenient for subsequent processing

1.4 Active Ingredients

- Total Flavonol Glycosides: ≥24.0%, Test Method: HPLC
- Total Terpene Lactones: ≥6.0%, Test Method: HPLC
- Ginkgolides A+B+C: ≥2.8%, Test Method: HPLC
- Bilobalide: ≥2.6%, Test Method: HPLC
- Total Ginkgolic Acids: ＜5 ppm, Test Method: HPLC
- Total Content of Quercetin, Kaempferol and Isorhamnetin: Calculated according to pharmacopoeia regulations, Test Method: HPLC

1.5 Physicochemical Indicators

- Particle Size: 95% passes 80-mesh sieve; 80~120 mesh is customizable, Test Method: Sieving Method (GB/T 5507)
- Loss on Drying: ≤5.0%, Test Method: 105℃, 2h (GB 5009.3)
- Residue on Ignition (Ash): ≤0.8%, Test Method: Ignition Weighing Method (GB 5009.4)
- Total Heavy Metals: ≤10 mg/kg, Test Method: AAS/ICP-MS
- Lead (Pb): ≤1.0 mg/kg, Test Method: AAS/ICP-MS (GB 5009.12)

- Arsenic (As): ≤0.5 mg/kg, Test Method: AAS/ICP-MS (GB 5009.11)
- Cadmium (Cd): ≤0.1 mg/kg, Test Method: AAS/ICP-MS (GB 5009.15)
- Mercury (Hg): ≤0.2 mg/kg, Test Method: AAS/ICP-MS (GB 5009.17)
- Residual Solvents: Ethanol ≤0.5%, Methanol ≤0.1%, complying with EP/USP standards, Test Method: GC
- Pesticide Residues: BHC and DDT ≤0.05 mg/kg respectively, complying with international food raw material pesticide residue control standards (GB 2763)

1.6 Microbiological Indicators

Complying with food-grade standards of US FDA, EU EFSA and China's food safety standards

- Total Plate Count: ≤1000 CFU/g, Test Method: GB 4789.2
- Molds and Yeasts: ≤100 CFU/g, Test Method: GB 4789.15
- *Escherichia coli*: Negative, Test Method: GB 4789.3
- *Salmonella*: Negative, Test Method: GB 4789.4
- *Staphylococcus aureus*: Negative, Test Method: GB 4789.10

1.7 Nutritional Composition (per 100g)

Item	Content	NRV%
Energy	368 kJ	4%
Protein	11.8 g	20%
Fat	2.1 g	4%
Saturated Fat	0.5 g	3%
Carbohydrates	76.2 g	25%
Dietary Fiber	12.8 g	51%
Sodium	15 mg	1%

Note: NRV% is calculated according to China GB 28050-2011, EU Directive 90/496/EEC and relevant US FDA standards, for reference only.

1.8 Application Fields

1.8.1 Food Field

It can be added as a functional raw material into solid beverages, compressed tablets, meal replacement foods, baked goods, tea drinks and other foods, endowing products with functional properties such as anti-oxidation, improving microcirculation and protecting cardiovascular and cerebrovascular systems, adapting to the R&D trend of natural and healthy foods.

1.8.2 Health Food Field

Used in the preparation of dietary supplements with anti-oxidation, memory improvement and cardiovascular and cerebrovascular regulation functions. It can serve as the core raw material for health food capsules, oral liquids and granules, with stable active ingredient content, complying with USP, EP pharmacopoeia standards and relevant requirements for Chinese health food raw materials.

1.8.3 Cosmetics Field

Added into skin care products, facial masks, toners, emulsions and other cosmetics. With the functions of anti-oxidation, free radical scavenging, delaying skin aging and improving dull complexion, it meets the R&D demand for natural and mild daily chemical products, is easy to integrate into cosmetic formulations and non-irritating.

1.8.4 Other Fields

It can be used as pharmaceutical intermediates (for preparations of cardiovascular and cerebrovascular diseases and cognitive function improvement), feed additives, etc. It has a wide range of applications, meets the compliance requirements of multiple industries, and relevant specifications can be customized for different scenarios.

1.9 Compliance Statement

1.9.1 Standard Basis

- International: ISO 20483, ISO 6496
- Europe & US: USP (United States Pharmacopoeia), EP (European Pharmacopoeia), FDA 21 CFR, EU Food Supplements Directive 2002/46/EC
- China: Pharmacopoeia of the People's Republic of China (2020 Edition Volume I), GB 14881, GB 28050-2011

1.9.2 Certifications

ISO 9001, HACCP, Kosher, Halal, Organic (optional; corresponding certification documents such as ECOCERT, USDA Organic can be provided according to customer requirements)

1.9.3 Additional Statements

- Non-GMO
- Allergen-free (complying with EU Allergen Directive)
- Non-irradiated
- Free of preservatives, pigments, fragrances and harmful solvent residues

1.10 Packaging and Storage

- Packaging: 1kg/5kg aluminum foil bag; 25kg fiber drum (lined with double PE bags). Packaging specifications can be customized according to customer requirements. Deoxidizer is included inside with good sealing performance to prevent moisture absorption and oxidation.
- Storage: Sealed, stored in a cool, dry and ventilated place, away from strong light and high temperature (>30℃), peculiar smell and toxic and harmful substances, to prevent moisture absorption, oxidation and microbial contamination.
- Shelf Life: 24 months (under unopened original packaging); use up within 30 days after opening with proper sealing.

1.11 Explanation of Key International Standard Points

- Active Ingredients: Total flavonol glycosides, total terpene lactones and ginkgolic acids are internationally recognized core quality control indicators (EGB761 standard), mandatory test items for European and American customers. Test methods and limits can be adjusted according to customer requirements.
- Heavy Metals / Microorganisms: Strictly in accordance with the limits of EU 1881/2006 and FDA cGMP, which are key indicators for customs clearance of products exported to Europe and America. Third-party test reports with CMA/CNAS qualifications can be provided as evidence.
- Supporting Documents: COA (Certificate of Analysis), MSDS, botanical origin certificate and third-party test reports are required for export. Document contents can be customized according to the requirements of target markets (Europe, America, Southeast Asia, etc.) to ensure smooth customs clearance.

Appendix: Specifications (Classified by Application Scenarios)

1. Food Grade (GB-F01)

- Application: Solid beverages, compressed tablets, condiments, baked goods, tea drinks and other food fields;
- Exclusive Specification: Prepared by pure water extraction process with no solvent residue; Total Flavonol Glycosides ≥24.0%, Ginkgolic Acids ＜5 ppm; mild odor, particle size 100~120 mesh, excellent instant solubility, ready for direct addition.

2. Health Food Grade (GB-H02)

- Application: Dietary supplements, health food capsules, oral liquids, granules and other health food fields;
- Exclusive Specification: Prepared by water-alcohol dual extraction + macroporous resin purification; Total Flavonol Glycosides ≥24.0%, Total Terpene Lactones ≥6.0%, Ginkgolic Acids ＜5 ppm; high purity and strong activity, complying with health food safety standards.

3. Cosmetics Grade (GB-C03)

- Application: Skin care products, facial masks, toners, emulsions and other cosmetic fields;
- Exclusive Specification: Prepared by mild extraction and purification process; Total Flavonoids ≥20.0%, decolorized with uniform color and mild odor; good water solubility, easy to integrate into cosmetic formulations, exerting anti-oxidation and anti-aging effects.

4. Pharmaceutical / High-end Custom Grade (GB-M04)

- Application: Pharmaceutical intermediates, high-end health foods, core ingredients of high-end cosmetics and other high-end scenarios;
- Exclusive Specification: Prepared by pharmacopoeia-grade purification process, fully complying with EGB761 standard; Total Flavonol Glycosides 24.0%~26.0%, Total Terpene Lactones 6.0%~6.6%, Ginkgolic Acids ＜1 ppm; no solvent residue, extremely high purity, complying with pharmaceutical grade standards. Particle size, solubility and other parameters can be customized as required.

Analysis of the Manufacturing Process of Ginkgo Biloba Leaf Extract

Preface

As a classic medicinal and edible homologous plant, Ginkgo biloba leaf extract is rich in core active ingredients such as **total flavonol glycosides and terpene lactones (ginkgolides A/B/C, bilobalide)**.

With excellent effects including anti-oxidation, improving microcirculation, neuroprotection, anti-inflammation and soothing sensitivity, it is widely used in functional foods, health products, cosmetics, pharmaceuticals, dietary supplements and other fields.

This document provides an in-depth analysis of the entire production process of Ginkgo biloba leaf extract, systematically presenting the process principles, core technologies, quality control standards and product advantages from raw material sourcing to finished product delivery.

It not only demonstrates production professionalism and technical barriers, but also clearly conveys the core product value, providing customers with a comprehensive and credible process reference to help them accurately select high-quality natural Ginkgo biloba raw materials.

This Ginkgo biloba leaf extract adopts a full-process modernized technology:

High-quality raw material selection + Low-temperature pretreatment + Targeted extraction + Macroporous resin purification + Deep ginkgolic acid removal + Low-temperature drying.

Under mild conditions, it maximally retains core active ingredients such as total flavonol glycosides and terpene lactones, while strictly removing toxic and harmful impurities including crude fiber, protein, pigments and ginkgolic acids.

The production process strictly complies with food-grade, health food-grade and pharmaceutical-grade standards, with full-process quality control at key steps, ensuring high purity, high activity, low ginkgolic acid content and high stability.

It can be widely applied in functional foods, health products, cosmetics and pharmaceuticals, providing customers with safe, stable and high-quality natural plant raw materials.

I. Raw Material Source Control: Selecting Premium Ginkgo Leaves to Secure Active Foundation

Raw material quality is the core prerequisite for the activity and safety of Ginkgo biloba leaf extract.

We adhere to the principle of **"source selection and strict access"** and establish a full-chain raw material control system, ensuring each batch meets high-end production standards from four dimensions: variety, production area, harvesting and testing, laying a solid foundation for subsequent processes.

1.1 Selection of Variety and Harvest Period: Targeted Screening of High-Activity Raw Materials

Dried leaves of the authentic source plant *Ginkgo biloba L.* are used, excluding young and aged yellow leaves.

Leaves harvested in early autumn (September–October), just before turning yellow, are selectively used.

At this stage, the contents of total flavonol glycosides and terpene lactones reach their annual peak, with moderate lignification and sufficient accumulation of active substances—active ingredients are more than 30% higher than those in ordinary growing-season leaves.

All raw materials are naturally cultivated, non-GMO and without excessive artificial intervention, ensuring the efficacy advantages and quality stability of the extract at the variety and harvest period level.

1.2 Direct Sourcing from Core Ecological Production Areas: Ensuring Purity and Safety

We select core ecological ginkgo production areas in China with fertile soil, sufficient sunlight, far away from industrial pollution and main traffic roads, and irrigation water meeting drinking water standards, eliminating risks of pesticide residues and excessive heavy metals at the source.

The model of **"direct production area sourcing + immediate drying"** is adopted. Ginkgo leaves are rapidly dehydrated at low temperature after harvesting to avoid mildew, fermentation and oxidative loss of active ingredients, ensuring natural and pure raw materials.

1.3 Incoming Raw Material Inspection: Strict Access, Batch-by-Batch Testing

A strict incoming inspection standard is established. Each batch must pass multi-dimensional testing before entering production, covering:

- **Sensory testing**: No mildew, insect damage, sediment, dead leaves, branches or abnormal odor; leaves dry and intact.
- **Physicochemical testing**: Moisture ≤12%, ash ≤10%, ensuring storage stability.

- **Safety testing**: Pesticide residues complying with national and EU standards; strict limits for heavy metals (Pb, As, Cd, Hg, etc.) complying with EU EFSA, US FDA and Chinese GB standards.
- **Activity testing**: Basic contents of total flavonol glycosides and terpene lactones meeting standards, ensuring sufficient activity foundation.

Unqualified raw materials are uniformly rejected, eliminating quality risks at the source and reassuring customers.

II. Pretreatment Process: Cleaning and Wall Breaking, Mild Activity Retention

Pretreatment is critical for achieving **high dissolution, low impurities and high activity** in Ginkgo biloba leaf extract.

It corely solves pain points in traditional processes such as low extraction rate, high impurities, dark color and high ginkgolic acid introduction.

Refined operations remove impurities while protecting heat-sensitive active ingredients, paving the way for efficient subsequent extraction.

2.1 Cleaning and Impurity Removal: Clean Residue-Free, Mild and Non-Damaging

A dual cleaning mode of **high-pressure countercurrent spraying + manual sorting** is adopted.

Spraying water temperature is strictly controlled below 25℃ to avoid enzymatic hydrolysis and loss of active ingredients caused by high temperature.

Manual sorting removes dead leaves, diseased leaves, branches, sediment and foreign matters.

Raw materials are quickly drained after cleaning to prevent dissolution loss of effective ingredients from prolonged soaking, ensuring clean and impurity-free raw materials.

2.2 Low-Temperature Shear Crushing: Mild Wall Breaking, Improving Dissolution Efficiency

Drained ginkgo leaves enter the low-temperature crushing process using a low-temperature shear crusher with crushing temperature ≤30℃ and particle size controlled at 20–40 mesh.

Mild crushing increases the specific surface area of raw materials and improves subsequent extraction efficiency, while avoiding oxidative degradation of flavonoids, lactones and other components caused by high-temperature crushing.

Crushed materials are stored in sealed containers to reduce contact with air.

III. Core Extraction Process: Multi-Mode Targeted Extraction Balancing Efficiency and Activity

Extraction is the core step for enriching active ingredients of Ginkgo biloba.

We abandon the traditional single water extraction process and adopt a modern extraction system featuring **multi-process adaptation and targeted enrichment**, flexibly selected according to application scenarios and customer needs.

It ensures extraction efficiency while maximally retaining heat-sensitive active ingredients, demonstrating technical professionalism and flexibility.

3.1 Dilute Ethanol Extraction (Mainstream Pharmacopoeia Process): Efficient Enrichment for Pharmaceuticals and Health Products

For mainstream scenarios such as pharmacopoeia standards, health products and pharmaceutical intermediates, food-grade dilute ethanol extraction is adopted:

- Extraction medium: 30%~70% ethanol
- Solid-liquid ratio: 1:10~1:15
- Extraction temperature: 50–60℃
- Extraction times: 2–3 times, 1–1.5 hours each
- Full closed stirring to ensure full dissolution of total flavonol glycosides and terpene lactones.

Process advantages:

Compliant with pharmacopoeia routes, comprehensive dissolution of active ingredients, recyclable ethanol, controllable solvent residues, suitable for pharmacopoeia-grade GBE, functional health products and pharmaceutical raw materials.

3.2 Pure Water Extraction: Green and Safe for Food-Grade Applications

For scenarios with extremely high "solvent residue-free" requirements such as foods, beverages and meal replacements, pure water extraction is used:

- Medium: purified water meeting drinking water standards
- Solid-liquid ratio: 1:10~1:15
- Temperature: 50–60℃
- Extraction times: 2–3 times, 1–1.5 hours each

- Low-speed stirring throughout to ensure full dissolution of water-soluble active ingredients.

Process advantages:

Green and environmentally friendly, no organic solvent residues, high safety, mild odor, suitable for solid beverages, compressed tablets, tea drinks and other food fields.

3.3 Modern Assisted Extraction Technologies: High-End Empowerment, Strengthening Technical Barriers

For pharmaceuticals, high-end health products and cosmetics, a combined process of **ultrasonic-assisted extraction + low-temperature negative-pressure extraction** is employed:

- **Ultrasonic-assisted extraction**: Mild cell wall breaking via cavitation effect, shortening extraction time by 50% and increasing extraction rate by over 25%, avoiding high-temperature degradation.
- **Low-temperature negative-pressure extraction**: Temperature ≤40℃, vacuum -0.08~-0.09MPa, reducing oxidation and volatilization; retention rate of flavonoid and lactone activity ≥90%.

High-end customized products can adopt supercritical CO_2 extraction or macroporous resin refining, featuring no solvent residues, extremely high purity and targeted enrichment of high-lactone components, suitable for injection-grade precursors and core ingredients of high-end efficacy skincare products.

IV. Separation and Purification Process: Multi-Stage Refining for High-Purity, Low-Acid Premium Products

Extract contains impurities such as crude fiber, tannins, protein, pigments and ginkgolic acids, easily leading to dark color, poor solubility and low safety.

We adopt multi-stage separation and purification + deep deacidification technology for precise impurity removal, targeted enrichment and strict ginkgolic acid control, producing high-quality products with high purity, light color, high solubility and low toxic side effects.

4.1 Multi-Stage Filtration and Centrifugation: Basic Impurity Removal, Ensuring Clarity

Extract is first filtered through a plate-and-frame filter to remove ginkgo leaf residue and suspended solids;

then high-speed centrifuged (3000–5000 r/min) to remove fine impurities, protein and colloid, making the extract clear and transparent, laying a foundation for subsequent purification.

4.2 Macroporous Resin Purification (Core Process): Targeted Enrichment of Active Components

Pharmacopoeia-standard macroporous adsorption resin column chromatography is used, separating active components from impurities via gradient elution:

1. **Water elution**: Removes sugars, inorganic salts and water-soluble impurities.
2. **Low-concentration alcohol elution**: Removes weak-polar colored impurities.
3. **Medium-high concentration alcohol elution**: Targeted elution and collection of total flavonol glycosides and terpene lactone fractions.

Process advantages:

High enrichment multiple of active ingredients, thorough impurity removal, guaranteeing subsequent deacidification and finished product compliance.

4.3 Deep Ginkgolic Acid Removal Technology: Core Safety Control Point

Ginkgolic acid is an allergenic and potentially hepatotoxic impurity, the core safety control point of Ginkgo biloba leaf extract.

Our process adopts multi-stage combined deacidification:

- **Organic solvent liquid-liquid extraction deacidification**: Degreasing and deacidification using petroleum ether/n-hexane, selectively removing fat-soluble ginkgolic acids.
- **Resin deep refining deacidification**: Special adsorption resin further intercepts trace ginkgolic acids.
- **Low-temperature molecular distillation (high-end)**: Efficiently removes residual ginkgolic acids and solvents.

Ginkgolic acid can be stably controlled at **≤5 ppm**, even ≤1 ppm, meeting stringent requirements of EU, US and Chinese pharmacopoeias.

4.4 Membrane Separation Technology: Precise Purification, Improving Quality

Combined purification using ultrafiltration membrane + nanofiltration membrane removes macromolecular impurities, tannins and partial pigments via sieving, while enriching small-molecule active ingredients such as flavonoids and lactones.

No chemical flocculants and no secondary pollution throughout the process.

Process advantages:

Ash reduced by 30%~50%, product purity increased by 1–3 times, water solubility significantly improved (solubility ≥95% at 25℃), lighter color and purer odor.

4.5 Decolorization Refining: Optimizing Sensory Properties, Enhancing Adaptability

For cosmetics and high-end food applications, low-temperature food-grade activated carbon adsorption is adopted at below 50℃ to adsorb excess pigments and odors.

After filtration and decarbonization, the product appears light yellow to off-white with uniform color and mild odor, without affecting the appearance and experience of end products.

V. Low-Temperature Concentration Process: Mild Temperature Control, Locking Activity Without Loss

The core of concentration is **removing water and increasing concentration** while avoiding high-temperature damage to heat-sensitive substances such as flavonoids and terpene lactones.

We adopt low-temperature negative-pressure dual-effect concentration with mild temperature control throughout, ensuring no degradation or oxidation of active ingredients.

- Precise temperature control: ≤55℃, preventing Maillard reaction and component degradation.
- Negative pressure sealing: vacuum -0.08~-0.09MPa, reducing volatilization and pollution.
- Stable specific gravity: solids controlled at 15%~25%, ensuring batch consistency.
- Green energy-saving: condensed water and ethanol recycled, environmentally friendly and low-consumption.

VI. Drying Process: Graded Adaptation, Creating High-Quality Powder

Drying directly determines the flowability, solubility, color and shelf life of Ginkgo biloba leaf extract.

We adopt graded drying processes according to product positioning, balancing efficiency and quality.

6.1 Spray Drying (Mainstream for Food/Health Product Grade)

For large-scale production of foods and general health products:

- Inlet air temperature ≤160℃, outlet air ≤80℃
- Instant drying into fine powder, particle size 80–120 mesh
- Good flowability, strong instant solubility
- Moisture ≤6.0%, shelf life 24 months

6.2 Vacuum Drying (Small-to-Medium Batch Customization)

For high-viscosity extracts and customized products:

- Temperature 50–60℃, vacuum dried to moisture ≤5.0%
- Uniform particle size after crushing and sieving, complete activity retention

6.3 Freeze Drying (High-End Pharmaceutical/Health Product Grade)

For pharmaceutical, high-end health product and cosmetic raw materials:

- Pre-freezing at -40℃ + vacuum sublimation drying
- Activity retention rate ≥95%
- Loose and porous product, excellent solubility, light color, no heat damage
- Optimal quality, shelf life up to 30 months

6.4 Post-Drying Treatment

After drying, low-temperature crushing, vibration sieving (80–120 mesh) and three-dimensional blending for 20–30 minutes ensure uniform components, consistent particle size and strong batch stability.

VII. Quality Control System: Full-Chain Management, Safe and Compliant Control

A full-chain quality control system **"from raw materials to finished products"** is established with Key Control Points (KCP), real-time monitoring and full-process recording to ensure products meet international and domestic standards.

7.1 Full-Process Monitoring of Key Control Points

- Raw material access: batch-by-batch testing, rejection of unqualified materials
- Pretreatment: monitoring of crushing particle size and cleaning temperature
- Extraction: recording of temperature, time, solid-liquid ratio and solvent concentration
- Purification: strict control of resin parameters, elution curve and deacidification process
- Concentration & drying: real-time monitoring of temperature, vacuum degree and moisture
- Finished product: packaged and delivered only after full-item testing qualification

7.2 Full-Item Finished Product Testing

Each batch of finished products undergoes full-item testing in accordance with standards, methods complying with ISO, USP, EP and CP (Chinese Pharmacopoeia). CMA/CNAS third-party reports are available:

- Active ingredients: total flavonol glycosides ≥24%, terpene lactones ≥6%
- Physicochemical indicators: moisture, ash, particle size, solubility
- Safety indicators: heavy metals, pesticide residues, solvent residues, ginkgolic acid ≤5 ppm
- Microorganisms: total plate count, molds & yeasts, coliform, *Salmonella*, *Staphylococcus aureus* all compliant

7.3 Testing Equipment and Team

Equipped with professional equipment including HPLC, UV, AAS and a microbial clean laboratory, as well as a professional testing team, ensuring accurate and reliable data and safeguarding quality.

VIII. Summary of Process Advantages: Technical Empowerment to Build Core Competitiveness

8.1 Activity Advantage

Full-process low-temperature technology, retention rate of total flavonol glycosides and terpene lactones ≥90%, ≥95% for high-end products, with stable and prominent efficacy.

8.2 Quality Advantage

Multi-stage purification + deep deacidification + decolorization refining, resulting in light color, high solubility, no odor, low impurities, complying with pharmacopoeia standards and suitable for multiple fields.

8.3 Safety Advantage

Deep ginkgolic acid removal technology, ginkgolic acid ≤5 ppm or lower; green process with no solvent residues; heavy metals, microorganisms and pesticide residues all

complying with EU, US and Chinese standards, eligible for export customs clearance.

8.4 Stability Advantage

Full-process quality control, strong batch consistency, stable long-term supply.

8.5 Flexibility Advantage

Customizable extraction ratio, active content, particle size, solubility and deacidification degree, supporting four-level customization for food, health products, cosmetics and pharmaceuticals.

8.6 Environmental Advantage

Recycling of ethanol and water resources, resource utilization of by-products, green and sustainable.

IX. Conclusion

The quality of Ginkgo biloba leaf extract stems from precise control of every process step.

Upholding the philosophy of **"professionalism, rigor and innovation"**, we deeply engage in the modernized production of Ginkgo biloba leaf extract, continuously improving and strictly adhering to standards from premium ginkgo leaf selection to low-temperature dried finished products.

We not only demonstrate technical strength in plant extraction but also uphold the core commitment of **"natural, safe, high activity and low ginkgolic acid"**.

We will continue to optimize processes and upgrade quality, providing global customers with more stable, high-quality and valuable Ginkgo biloba leaf extract, supporting product innovation and market breakthroughs in functional foods, health products, cosmetics, pharmaceuticals and other fields.

Appendix: Simplified Flow Chart of Ginkgo Biloba Leaf Extract Manufacturing Process

