



TECHNICAL DATA SHEET

1. Product Overview

(S)-Equol is a highly bioactive isoflavone metabolite with superior biological activity compared to its parent compounds. It is naturally associated with estrogen-like activity and is widely recognized for its role in **hormonal balance, skin health, and healthy aging support**.

Unlike plant isoflavones, (S)-Equol is the **active form with enhanced bioavailability**, making it a next-generation functional ingredient for modern nutraceutical formulations.

2. Key Functional Benefits

Hormonal Balance Support

- Acts as a selective phytoestrogen metabolite
- Helps support natural hormonal equilibrium
- Widely used in women's wellness formulations

Skin Health & Anti-Aging

- Supports skin elasticity and hydration
- Helps reduce oxidative stress-related skin aging
- Commonly used in beauty-from-within products

Antioxidant & Cellular Protection

- Helps neutralize free radicals
- Supports cellular health and metabolic balance

Menopausal Wellness Support

- Helps alleviate discomfort associated with hormonal changes
 - Supports overall vitality during aging transition phases
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3. Applications

(S)-Equol is widely used in premium functional nutrition products, including:

- Women's health supplements
 - Menopause support formulations
 - Beauty-from-within nutraceuticals
 - Anti-aging dietary supplements
 - Functional food & beverage fortification
 - Sports recovery & wellness blends (hormonal balance support)
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4. Product Advantages

- ✓ High purity and consistent quality (HPLC verified)
 - ✓ Active metabolite form with high bioactivity
 - ✓ Low residual solvent and excellent safety profile
 - ✓ Strong stability and formulation compatibility
 - ✓ Suitable for premium nutraceutical positioning
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5. Technical Specifications

Parameter	Specification	Result	Test Method
Purity	≥99%	99.6%	HPLC
Assay	≥98%	99.5%	HPLC
Appearance	White powder	Pass	Visual
Mesh size	100% pass 100 mesh	Pass	Sieve test
Melting point	189–190°C	189°C	USP <741>
Optical rotation	$[\alpha]D^{20} = -21^\circ$	-21.1°	USP <781>
Loss on drying	≤1.0%	0.12%	USP <731>
Residual solvent (Ethanol)	<200 ppm	84 ppm	USP <467>
Heavy metals (total)	≤10 ppm	Pass	USP <233>
Microbiological limits	Complies with USP standards	Pass	USP <61>/<62>

6. Quality & Compliance

Manufactured under strict quality control systems and tested according to USP, AOAC, and international pharmaceutical-grade analytical standards.

7. Packaging & Storage

- Packaging: 1 kg / 5 kg / 25 kg (customizable)
 - Storage: Cool, dry, well-ventilated place
 - Protection: Keep away from light and moisture
 - Shelf life: 24 months under recommended conditions
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8. Target Market Positioning

(S)-Equol is positioned as a **high-value bioactive compound** for:

- Premium women's health brands
- Functional beauty supplement brands
- Anti-aging nutraceutical companies
- Clinical nutrition product developers