XI'AN LAND NUTRA CO.,LTD
Room 1202, Building 1, Vanke Huizhi Center, No. 56,
Xifeng Road, Yanta District, Xi'an City, Shaanxi Province,China

Technical Data Sheet

1. Product and Company Information

Product Name: Melatonin powder
INCI Name: Melatonin
Chemical Name: N-Acetyl-5-methoxytryptamine
CAS No.: 73-31-4
EC No.: 200-797-7
Molecular Formula: $C_{13}H_{16}N_2O_2$
Molecular Weight: 232.28 g/mol
Recommended Use: Dietary supplement ingredient, functional food additive, cosmetic ingredient.
Manufacturer: Xi'an Land Nutra Co., Ltd.
Address: 12th Floor, Vanke Huizhi Center, Yanta District, Xi'an City, Shaanxi, China
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2. TECHNICAL SPECIFICATIONS

Parameter	Specification	Test Method
Physical Properties		
Appearance	White to off-white crystalline powder	Visual
Odor	Odorless or with a faint characteristic odor	Organoleptic
Particle Size	95% < 100 mesh	Laser diffraction
Bulk Density	0.40-0.60 g/cm³	USP <616>
Chemical Properties		
Purity（By HPLC）	≥ 99.0%	USP
Related Substances	Total impurities ≤ 1.0%	HPLC

Loss on Drying	≤ 0.5%	USP <731>

3. COMPOSITION

Non-GMO: Applicable for synthetic grade.

Vegan: Yes (synthetic grade).

Halal/Kosher: Certificates available upon request.

4. PERFORMANCE CHARACTERISTICS

Primary Function:

Dietary Supplement/Food: Regulation of circadian rhythm, support for sleep onset and quality.

Cosmetic (Topical): Potent antioxidant; helps protect skin cells from oxidative stress; may support skin's nighttime repair processes.

Key Benefits:

Systemic: Supports healthy sleep-wake cycles.

Topical (Cosmetic): Contributes to antioxidant defense system, helps neutralize free radicals, may support skin vitality.

Mechanism:

Acts as a ligand for melatonin receptors (MT1/MT2). As an antioxidant, it directly scavenges free radicals and upregulates endogenous antioxidant enzymes**.**

5. APPLICATION GUIDELINES

Recommended Usage Level:

Dietary Supplements: 0.5 - 10 mg per serving (comply with local regulations, e.g., EU Novel Food authorization limits).

Cosmetic Formulations: 0.01% - 0.1% (effective antioxidant levels). Conduct compatibility and efficacy tests.

Solubility: For aqueous systems, pre-dissolve in a small amount of ethanol, propylene glycol, or other suitable solvents. Can be directly added to oil phases with mild heating.

Compatibility: Compatible with most cosmetic oils, emollients, and emulsifiers. Check stability with specific active ingredients.

Processing Temperature: Stable below 150°C. Add in the cooling phase (<60°C) to prevent degradation.

pH Range: Most stable at pH 5.0 - 7.0. Avoid strongly acidic or alkaline conditions for prolonged periods.

Light Sensitivity: Photodegradable. Formulate in opaque packaging and consider photostabilizers.

6. STABILITY & STORAGE

Shelf Life: 24 months from date of manufacture
Storage Conditions:

Temperature: 15-25°C
Humidity: < 65% RH
Protection from light & moisture
Packaging: 25 kg/drum (food-grade PE bag + aluminum foil + fiber drum)

7. REGULATORY STATUS

Cosmetic Compliance: Meets EU Regulation (EC) No 1223/2009
Certifications Available:

Halal Certificate
Vegan Declaration
Non-GMO Statement
Allergen-Free Statement
Manufacturing Standards: ISO 22716 (Cosmetics GMP)