

Alpha-Arbutin

Description

Alpha-Arbutin, or 4-hydroxyphenyl hydroquinone O- α -D-glucopyranoside, is an highly advanced active ingredient specifically suitable for skin lightening applications. Alpha-Arbutin can inhibit the production and deposition of melanin to reduce stains and freckles based on hyperpigmentation due to inhibition of tyrosinase activity at low concentrations. Therefore Alpha-Arbutin is an effective, safety approved whitening ingredient.

Differences between Alpha- and Beta-Arbutin:

The inhibitory effect of Alpha-Arbutin on tyrosinase activity is 2 times stronger than the effect of our Arbutin (a Beta-Arbutin with Mat.No 7011). This is indicated by the IC₅₀ 2.7 mmol/L, in comparison to IC₅₀ 5.3 mmol/L for Beta-Arbutin. Thus, it shows stronger whitening properties than traditional Beta-Arbutin. Alpha-Arbutin shows better stability under weak acidic conditions and higher temperatures than the Beta form.

Efficacy

- reduces hyperpigmentation:
blocks epidermal melanin biosynthesis by inhibiting enzymic oxidation of tyrosine and dopa
- promotes lightening and an even skin tone on all skin types
- diminishes senile lentigo
- reduces age spots
- minimizes liver spots
- reduces the degree of skin tanning after UV exposure

Appearance

white to off white powder

INCI

Alpha-Arbutin

Registration

CAS-No.....84380-01-8

EC-No.....440-470-8

Raw material approved by ECOCERT GREENLIFE, conform to the COSMOS Standard.

Preservatives / Stabilizers

none



Alpha-Arbutin

Characteristics

assay.....>= 99.5 %
melting point.....202.0 - 210.0°C
specific rotation.....+174.0 - +185.0°
pH value (1% solution).....5.0 - 7.0

molecular formula.....C₁₂H₁₆O₇
molecular weight.....272.25 g/mol
synonym:
α-D-glucopyranoside, 4-hydroxyphenyl hydroquinone O-α-D-glucopyranoside

Application

facial creams and lotions
face masks
gels and ampoules
body lotions

Application concentration

skin care formulations.....0.1 - 2 %
face care formulations0.1 - 2 %
body care formulations.....max. 0.5 %

Incorporation

Alpha-Arbutin should be blended into the water phase or added at the last step of formulation cold or below 70 °C. Recommended pH 5.5 - 7.0. Alpha-Arbutin is soluble in water (<70 °C), methanol or alcohol. Partially soluble in cold water. It is insoluble in ether, chloroform or benzene. Alpha-Arbutin is compatible with up to 50 % Ethanol.

Toxicology

non hazardous in normal use concentration
pure raw material is harmful if swallowed

Storage & Shelf life

Alpha-Arbutin should be stored in tightly sealed containers at a dry and light protected place at 10 - 25 °C. Keep away from heat and open flames. Store away from oxidizing agents.

In closed original containers the shelf life is 24 months.