

Glucose Oxidase

Description

Glucose Oxidase is an oxidoreductase enzyme that catalyzes the conversion of β -D-glucose into D-glucono- δ -lactone in the presence of molecular oxygen, with the simultaneous formation of hydrogen peroxide. This enzymatic reaction system is well established and provides a defined mechanism that can be utilized in cosmetic formulations to deliver both functional and protective effects.

The generated gluconolactone contributes to mild skin conditioning and improves the overall feel and quality of the skin, while the controlled release of hydrogen peroxide can support microbial control, helping to preserve the product and protect the skin from microbial contamination. In addition, this mechanism can contribute to the stabilization of cosmetic formulations, thereby enhancing product longevity. Due to this dual-action mechanism, Glucose Oxidase represents a multifunctional ingredient that can be recommended for use as a skin-conditioning, stabilizing, and antimicrobial agent in personal care products and cosmetic applications.

Efficacy

- supports antimicrobial protection
- provides mild skin-conditioning
- improves skin feel and texture
- enhances formulation stability
- multifunctional: conditioning, stabilizing, antimicrobial

Appearance

light yellow powder

INCI

Glucose Oxidase

Registration

CAS-No.:

Glucose Oxidase.....9001-37-0

Dextrin.....9004-53-9

EC-No.:

Glucose Oxidase.....232-601-0

Dextrin.....232-675-4



Glucose Oxidase

Preservatives / Stabilizers

preservative.....none
stabilizer.....Dextrin

Characteristics

loss on drying..... $\leq 0.8\%$
enzyme activity..... ≥ 10000 U/g

Application

daily cosmetics
hair care
oral care

Application concentration

0.01 - 0.1 %

Incorporation

Glucose Oxidase is water soluble. Add at post-production stage at low temperature ($<40\text{ }^{\circ}\text{C}$). Avoid exposure to high temperatures and extreme pH conditions to maintain enzyme activity. Recommended pH range: 5.0 - 7.0. Not compatible with strong oxidizing or reducing agents.

Toxicology

Non hazardous in normal use concentration.

Storage & Shelf life

Should be stored in original sealed containers in a dry, well-ventilated, and light protected place at temperatures between $10 - 25\text{ }^{\circ}\text{C}$.

In closed original containers the shelf life is 12 months.