

N-Acetyl-D-Glucosamine (vegan)

Description

N-Acetyl-D-Glucosamine (NAG) is an important amino-monosaccharide precursor of the ubiquitous intracellular compounds found in all living organisms. Hence, it is significantly important in several biological processes. It is part of a biopolymer in the bacterial cell wall and the monomeric unit of the polymer chitin, which forms the exoskeletons of arthropods like insects and crustaceans. NAG represents the most abundant polymer in nature after cellulose and is also a major component of the cell walls of most fungi. Polymerized with glucuronic acid, N-Acetyl-D-Glucosamine forms hyaluronan, the main and ubiquitous constituent of mammalian cellular microenvironments and of the extracellular matrix. NAG has been reported to be an inhibitor of elastase release. In medical use it has been proposed as a treatment for autoimmune diseases.

N-Acetyl-D-Glucosamine is used in pharmaceutical, nutritional, and cosmetic applications. As hydrochloride, sulfate, or as free base NAG is mostly used as oral nutritional supplement in the treatment of arthritis. As a precursor of hyaluronic acid synthesis, NAG in cosmetics can enhance skin wound healing, improves skin hydration, moisturization and elasticity, prevents and relieves skin roughness and inhibits the formation of fine lines. Furthermore, NAG inhibits the glycosylation of tyrosinase, thereby inhibiting the maturation of tyrosinase and reducing the synthesis of melanin. Thus NAG can be used in cosmetic applications that claim to have moisturizing, anti-wrinkle and whitening effects.

Efficacy

- enhances wound healing
- improves skin hydration
- enhances synthesis of hyaluronic acid
- helps to maintain skin youth
- reduces wrinkles
- minimizes hyperpigmentation

Appearance

white crystalline, free flowing powder

INCI

Acetyl Glucosamine

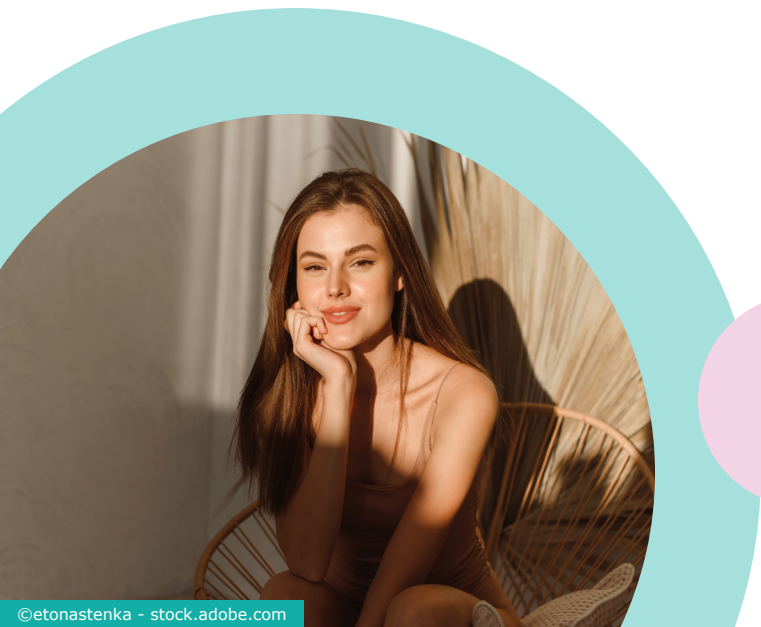
Registration

CAS-No.....7512-17-6 / 10036-64-3

EC-No.....231-368-2 / 233-115-1

Preservatives / Stabilizers

none

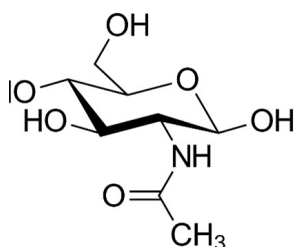


Nature needs no cosmetics,
but cosmetics need nature

N-Acetyl-D-Glucosamine (vegan)

Characteristics

particle size.....>= 90 % pass 100 mesh
tapped density.....>= 0.40 g/ml
assay (HPLC).....98.0 - 102.0 %
specific rotation alpha D 20°C....+39.0° - +43.0°
pH-value (1 % water solution).....6.0 - 8.0
loss on drying.....<= 0.5 %
residue on ignition.....<= 0.1 %
melting point.....196 - 205°C



<https://de.wikipedia.org>

molecular formula.....C₈H₁₅NO₆
molecular weight.....221.21 g/mol
synonym.....GlcNAc, NAG

Application

daily cosmetic products
creams and lotions
face masks
gels and ampoules
body care

Application concentration

skin care formulations.....1 - 4 %

Incorporation

N-Acetyl-D-Glucosamine (vegan) is soluble in water. Use concentration decreases when simultaneously using niacinamide. Above 10 % solubility is hardly possible, but skin irritations were not detected.

Toxicology

non hazardous in normal use concentration

Storage & Shelf life

N-Acetyl-D-Glucosamine (vegan) should be stored in original sealed containers in a dry and light protected place at temperatures between 10 - 25°C.

In closed original containers the shelf life is 36 months.