

Niacinamide PC

Product Code: 5016013

For clear skin that shines with strength and brightness

CHARACTERISTICS

Introduction

As one of the B vitamins (vitamin B₃) niacinamide is a trusted and very stable vitamin with much to offer to people of all ages and all skin types. Niacinamide is a component of NAD and NADPH, essential coenzymes in ATP production, also having a central role in DNA repair and skin homeostasis. It shows broad range of actions across all major skin care applications such as the stimulation of collagen synthesis – the principal structural protein responsible for maintaining skin elasticity, up-regulation of epidermal skin lipids such as ceramides which play a major role maintaining the water permeability barrier function of the skin, inhibition of the transfer of melanosomes from melanocytes to keratinocytes which leads to a brighter skin and finally the regulation of the sebum content of the skin and the anti-inflammatory activity which are both essential for anti-acne care.

Niacinamide PC is a special cosmetic proprietary grade of dsm-firmenich, which has a low guaranteed level of residual nicotinic acid to address any concerns about unpleasant skin sensations.

Composition

INCI name	Content	CAS No.	EINECS/ELINCS
Niacinamide	99-100%	98-92-0	202-713-4



General Properties

- Appearance: white crystalline powder, may build lumps which can easily be crushed down.
- pH of a solution: 6.0–7.5

FORMULATING

Solubility

- Highly soluble in water (641 g/L at 20°C) and alcohol and soluble in glycerol.
- Insoluble in lipophilic components.

Incorporation

- **Niacinamide PC** can be processed either cold or hot at temperatures up to 70°C and has to be incorporated into the aqueous phase of a cosmetic formulation. Due to its excellent solubility in water, it can even be added to the final O/W formulation. With W/O formulations the incorporation of **Niacinamide PC** into the water phase is highly recommended.
- **Niacinamide PC** can be used for different kind of products like O/W, W/O or W/Si formulations, toners, as well as in gel formulations.

Compatibilities

- In general, **Niacinamide PC** shows a very good compatibility with all groups of raw materials like emulsifier systems, emollients, and waxes, preservatives, hydrocolloids, sunscreens, detergents and other commonly used substances.
- Recommended pH of the final formulation: 4.0 – 8.0. pH can be adjusted with commonly used neutralizing agents. Avoid using strong or highly concentrated acids and bases.
- **Niacinamide PC** is incompatible with strong acids and bases and oxidizing agents which may cause hydrolysis to nicotinic acid.
- It is important to not use ingredients containing enzymes such as amidases to avoid biological hydrolysis of niacinamide to nicotinic acid.
- Nevertheless, the compatibility always depends on the complete final formulation. So the formulator has to monitor potential incompatibilities during the time of storage with each formulation.

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VARIOUS

Storage

Please refer to Product Data Sheet (PDS).

Compendial compliance

Niacinamide PC meets all requirements of the USP-FCC and Ph. Eur.

Use level

For skin care preparations a concentration of 1-10% **Niacinamide PC** is recommended.

Last update: September 2023