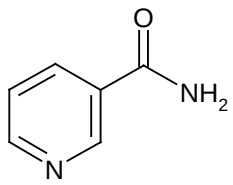
Nicotinamide

Nicotinamide (Niacinamide) is the physiological form of Niacin (Vitamin B3) and forms the essential constituent of the oxidoreduction coenzymes NAD and NADP.

CAS No. / EINECS	98-92-0 / 202-713-4		
INCI/CTFA	Niacinamide	**CN Code**	2936 2900

SPECIFICATION*

Chemical structure



Chemical formula	$C_6H_6N_2O$	**Molecular weight**	122.1

Characters	white or almost white, crystalline powder or colorless crystals, freely soluble in water and anhydrous ethanol, slightly soluble in methylene chloride
Identification	A: melting point: 128°C to 131°C B: IR absorption C: TLC
Appearance of solution	clear and not more intensively coloured than reference solution
pH-value of solution	6.0 to 7.5
related substances (HPLC)	unspecified impurity: for each impurity max 0.1% total: max 0.2%
Heavy metals	not more than 20ppm
Loss on drying	not more than 0.5%
Sulphated ash	not more than 0.1%
Assay (titration)	99.0% to 101.0%

*meets the quality requirements of the current Ph. Eur. monograph for Nicotinamide

Microbiological limits

- Total aerobic microbial count: max. 1000cfu/g
- Total yeast and moulds count: max. 100cfu/g

Storage and packaging

- Expiry date
  in unopened original packaging and under adequate storage conditions minimum 5 years after production date
- Storage condition
  store in tight container at room temperature (1°C to 30°C)
- Standard packaging
  25kg carton boxes

REACh

Nicotinamide has been registered (registration no.: 01-2119968268-22-0001). The final REACh registration considers the uses recommended by COLIPA.

Formulating

Nicotinamide is soluble in water and alcohol. The recommended usage level of Nicotinamide is 0.3% to 5.0%

Toxicological Data

The Expert Panel released the Final Report on the Safety Assessment of Niacinamide (Nicotinamide) concluding that Niacinamide is safe in the current practices of use and concentration in cosmetic products.
A CIR (cosmetic ingredient review) report is available.

Physiological function

- Nicotinamide forms the essential constituent of the oxidoreduction coenzymes NAD and NADP
- NAD/NADP drive the metabolism of cells
- decline of NAD/NADP with age in human

Efficacy of Nicotinamide/Niacinamide in cosmetic products*

- stimulates new collagen synthesis →collagen is the principal structural protein holding the skin together
- upregulates biosynthesis of epidermal skin lipids, in particular Ceramides →Ceramides play an essential role in structuring and maintain the water permeability barrier function of the skin
- inhibits the transfer of melanosomes from melanocytes to keratinocytes → whitening, reduction of skin pigmentation
- regulates sebum contents of skin and acne
- regulates blood circulation in the skin and activates the oxygen transport to hair follicles → stimulation of hair growth

*literature data

Producer: Jubilant Life Sciences Ltd., India

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