

Product Name:	Nicotinamide (Vitamin B3), USP
Product Number:	N018
CAS Number:	98-92-0
Molecular Formula:	$C_6H_6N_2O$
Molecular Weight:	122.12 g/mol
Form:	Powder
Appearance:	White crystalline
Solubility:	Water: Freely soluble (500 mg/ml)
Boiling Point:	334.4 °C
Melting Point:	128-131 °C
Flash Point:	156 °C
Storage Conditions:	<30°C
Description:	<p>Nicotinamide (Vitamin B3), USP is water-soluble amide form of Nicotinic acid (Vitamin B3). It is a poly (ADP-ribose) polymerase (PARP) inhibitor, involved in regulation of many cellular processes. It shows promise in cell therapy research for diabetes, since it can induce embryonic stem cells into insulin-secreting cells.</p> <p>Nicotinamide (Vitamin B3), USP conforms to United States Pharmacopoeia specifications.</p>
Mechanism of Action:	<p>In cells, nicotinamide is the precursor to nicotinamide adenine dinucleotide(NAD), an essential coenzyme in ATP production and substrate for poly-ADP-ribose polymerase-1 (PARP-1). It is also a precursor to nicotinamide adenine dinucleotide phosphate (NADP), both of which are involved in redox reactions. PARP inhibitors are involved in many cellular processes such as DNA repair, cell cycle progression, and cell death.</p>
Cancer Applications	<p>Nicotinamide has also been used as an anti-cancer agent to inhibit PARP-1, an enzyme responsible for repairing DNA damage caused by chemotherapy treatment.</p>

References:

Surjana D, Halliday GM and Damian DL (2010) Role of Nicotinamide in DNA damage, mutagenesis, and DNA repair. *J. Nucl. Acids.* ID 157591 doi 10.4061 13 pp.

Tentori L and Graziani G (2005) Chemopotentiation by PARP inhibitors in cancer therapy. *Pharmacol. Res.* 52(1):25-33

Vaca P et al (2008) Nicotinamide induces differentiation of embryonic stem cells into insulin-secreting cells. *Exp. Cell Res.* 314(5):969-974

Ungerstedt, JS et al (2003) Nicotinamide is a potent inhibitor of proinflammatory cytokines. *Clin. Exper. Immunol.* 131(1):48-52

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