

Polyvinyl caprolactam (PVCL)

IUPAC Name: 1-ethenylazepan-2-one | CAS Registry Number: 25189-83-7

Synonyms: 1-vinylazepan-2-one, N-Vinylcaprolactam, 2235-00-9, 1-ethenylazepan-2-one, 1-Vinylhexahydro-2H-azepin-2-one, 2H-Azepin-2-one, 1-ethenylhexahydro-, homopolymer, SBB056203, 2H-Azepin-2-one, 1-ethenylhexahydro-, 1-vinylazaperhydroepin-2-one, 25189-83-7, Poly-N-vinylcaprolactam, AC1L2OBC, AC1Q2AHY, AC1Q6EZR, SureCN26239, N-Vinyl-epsilon-caprolactam, DSSTox_CID_21423, DSSTox_RID_79727, DSSTox_GSID_41423, 415464_ALDRICH

Molecular Formula:	C ₈ H ₁₃ NO	Molecular Weight:	139.194920 [g/mol]
H-Bond Donor:	0	H-Bond Acceptor:	1

InChIKey: JWYVGKFDLWWQJX-UHFFFAOYSA-N

Polyvinyl caprolactam (PVCL) is a hydrophilic synthetic polymer . It is well soluble in cold water but above about 35 ° C it is no longer water-soluble.

The monomer is N-vinyl caprolactam . The polymerization can be done in aqueous solution or in a mixture of water and an organic solvent, using an initiator which forms free radicals such as an organic peroxide .

PVCL is a cosmetic ingredient. It is used as a hair extingisher and film maker in hairlace , hair gel , lotions and the like or as a hair stylist stabilizer.

It can also be used in the specialty paper for inkjet printers . As a hydrophilic polymer, it helps to dry the ink and adhere to the paper. The image thus bleeds less under the influence of light than with polyvinylpyrrolidone .

An analogue function (adhesive) has PVCL when printing textiles.

Vinyl caprolactam can form copolymers with other monomers. A graft copolymer of polyvinyl caprolactam, polyvinyl acetate and polyethylene glycol is used as a vehicle in the pharmaceutical industry . It increases the solubility of hard-to-soluble drugs and accelerates its uptake. It is commercially available under the brand name Soluplus® from BASF.