

N-Vinylformamide

A Versatile Monomer

PRODUCT IN FOCUS



N-Vinylformamide

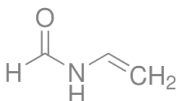
INTRODUCTION

N-Vinylformamide (NVF) is a vinyl-functionalized amide and an important monomer used in the production of poly(N-vinylformamide) (PNVF). NVF is valued for its ability to undergo polymerization, producing polymers with useful water solubility, film-forming properties, and functional groups suitable for further chemical modification.

PNVF and its derivatives are used in various industrial applications, including water treatment, paper manufacturing, adhesives, coatings, and specialty polymers.

MANUFACTURE

It is manufactured by reacting acetaldehyde with formamide to produce an intermediate, N-(1-hydroxyethyl)formamide, which is subsequently converted into a suitable precursor. The precursor undergoes thermal decomposition to produce N-Vinylformamide, followed by purification and stabilization to obtain the desired product quality.

Synonym(s)	N-Ethenylformamide
CAS no.	13162-05-5
EINECS no.	236-102-9
Molecular formula	C ₃ H ₅ NO
Molecular weight	71.08
Structure	

APPLICATIONS

N-Vinylformamide is primarily used as a monomer and intermediate for producing functional polymers. Its major applications include:

- ❶ **Paper industry:** Used to produce polymers that improve paper wet and dry strength, retention, and drainage.
- ❷ **Water treatment:** Used in the manufacture of polymeric flocculants for wastewater treatment and sludge dewatering.
- ❸ **Oilfield chemicals:** Used to produce polymers for drilling fluids and enhanced oil recovery.
- ❹ **Polyvinylamine production:** Polymerized to form poly(N-vinylformamide), which is subsequently hydrolyzed to produce polyvinylamine.
- ❺ **Textiles and Adhesives:** Hydrolyzed polymers function as fixing agents, textile finishing agents, and performance adhesives to improve material durability.
- ❻ **Lithium-Ion Batteries:** Utilized to synthesize aqueous binders for Li₄Ti₅O₁₂ (LTO) anodes, enhancing electrode stability and specific capacity.
- ❼ **Drug Delivery & Medical Devices:** Acts as a monomer to synthesize poly(N-vinylformamide) (PNVF) hydrogels for controlled drug delivery and biocompatible coatings for medical instruments.
- ❽ **Specialty chemicals:** Used in polymer formulations for coatings, adhesives, surface modification, and other industrial applications.

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SPECIFICATIONS

Test	Unit	Specification
Description	-	Colorless to amber to dark green clear liquid
Identification by IR	-	Consistent with reference spectrum
Water content by KF	%	NMT 0.5
Purity by LC	%	NLT 96.0
Dimer by LC	%	NMT 1.0

PACKING

25 kg / 200 kg drum

STORAGE

Preserve in original container. Keep in a well-ventilated place. Recommended storage temperature 2°C to 8°C

REACH status

Not registered

ExSyn offers N-Vinylformamide on commercial scales and welcomes enquiries. Our exceptional quality and service will make ExSyn your supplier of choice! If you need additional information or SDS, please contact us.