Palkem India

SAFETY DATA SHEET

According to US OSHA Hazard Communication Standard 2024 (29 CFR 1910.1200)

SECTION 1: Identification

Product Name: N-Vinyl-2-pyrrolidone (NVP), stabilized

CAS No.: 88-12-0

Purity: ⩾ 99.8 % (HPLC)

Synonyms: N-Vinylbutyrolactam; 1-Vinyl-2-pyrrolidone; 1-Ethenyl-2-pyrrolidone; N-Vinyl-2-pyrrolidinone

Molecular Formula: C_6H_9NO

Molecular Weight: 111.14 g/mol

Recommended Use: Laboratory chemicals; industrial chemical intermediate (monomer).

Uses Advised Against: Food, drug, pesticide or biocidal product use.

Supplier:

Palkem India
14, Atlanta Estate, Hanuman Tekdi Road,
Vitbhatti, Goregaon (East),
Mumbai – 400 063, India

Sales / RFQ: +91-22-2877-0000

Email: Arron.H@foxmail.com

Website: https://www.palkem.ltd/

Emergency Telephone Number: +91-22-2877-0000 (during business hours); contact local emergency services in case of incident.

SECTION 2: Hazard(s) Identification

Classification (US OSHA 29 CFR 1910.1200, 2024):

Hazard Class	Category
Acute oral toxicity	Category 4
Acute dermal toxicity	Category 4
Acute inhalation toxicity (vapors)	Category 4
Serious eye damage / eye irritation	Category 1
Carcinogenicity	Category 2
STOT – single exposure (Respiratory system)	Category 3
STOT – repeated exposure (Liver)	Category 1

Signal Word: DANGER

Hazard Statements:

- H318 – Causes serious eye damage
- H335 – May cause respiratory irritation
- H351 – Suspected of causing cancer
- H372 – Causes damage to organs (liver) through prolonged or repeated exposure
- H302 + H312 + H332 – Harmful if swallowed, in contact with skin or if inhaled

Precautionary Statements:

Prevention:

- P201 – Obtain special instructions before use
- P202 – Do not handle until all safety precautions have been read and understood
- P264 – Wash face, hands and any exposed skin thoroughly after handling

- P270 – Do not eat, drink or smoke when using this product
- P271 – Use only outdoors or in a well-ventilated area
- P260 – Do not breathe dust/fume/gas/mist/vapors/spray
- P280 – Wear protective gloves/protective clothing/eye protection/face protection

Response:

- P308 + P313 – IF exposed or concerned: Get medical attention/advice
- **Inhalation:** P304 + P340 – IF INHALED: Remove person to fresh air and keep comfortable for breathing
- **Skin:** P302 + P352 – IF ON SKIN: Wash with plenty of soap and water; P312 – Call a POISON CENTER or doctor if you feel unwell; P362 + P364 – Take off contaminated clothing and wash before reuse
- **Eyes:** P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing; P310 – Immediately call a POISON CENTER or doctor/physician
- **Ingestion:** P301 + P312 – IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell; P330 – Rinse mouth

Storage:

- P405 – Store locked up
- P403 + P233 – Store in a well-ventilated place. Keep container tightly closed

Disposal:

- P501 – Dispose of contents/container to an approved waste disposal plant

Hazards Not Otherwise Classified (HNOC): None identified.

SECTION 3: Composition / Information on Ingredients

Component	CAS No.	W
N-Vinyl-2-pyrrolidone	88-12-0	

Component	CAS No.	W
Stabilizer (e.g., sodium hydroxide, N,N'-di-sec-butyl-p-phenylenediamine type)	—	

Note: The product is supplied stabilized to prevent spontaneous polymerization.

SECTION 4: First-Aid Measures

General Advice: If symptoms persist, call a physician. Show this SDS to the attending physician.

Eye Contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required. Causes eye burns/serious eye damage.

Skin Contact: Wash off immediately with plenty of water for at least 15 minutes. Get medical attention. Remove contaminated clothing and shoes; wash clothing before reuse.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Most Important Symptoms/Effects: Causes eye burns; respiratory tract irritation; harmful if swallowed, in contact with skin or inhaled; chronic exposure may cause liver damage.

Notes to Physician: Treat symptomatically and supportively.

SECTION 5: Fire-Fighting Measures

Suitable Extinguishing Media: Water spray, carbon dioxide (CO_2), dry chemical, alcohol-resistant foam.

Unsuitable Extinguishing Media: No information available.

Specific Hazards Arising from the Chemical: Vapors may form an explosive mixture with air. Will burn if involved in a fire. Polymerizes readily if not inhibited; heat can

initiate reaction. Keep product and empty containers away from heat and sources of ignition.

Hazardous Combustion Products: Carbon monoxide (CO), carbon dioxide (CO_2), nitrogen oxides (NOx).

Explosion Limits: Lower 1.4 vol%; Upper 10 vol%.

Flash Point: 95 °C / 203 °F.

Autoignition Temperature: 240 °C / 464 °F.

Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA Rating: Health 3; Flammability 1; Instability 1; Physical Hazards N/A.

SECTION 6: Accidental Release Measures

Personal Precautions: Ensure adequate ventilation. Use personal protective equipment as required. Avoid breathing vapor or mist. Do not get in eyes, on skin, or on clothing.

Environmental Precautions: Should not be released into the environment. Do not flush into surface water or sanitary sewer system. See Section 12 for additional ecological information.

Methods for Containment and Clean Up: Absorb spill with inert absorbent material (e.g., vermiculite, sand or earth), then place in suitable closed containers for disposal. Provide ventilation. Do not use combustible materials such as sawdust.

SECTION 7: Handling and Storage

Handling: Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid breathing vapor or mist. Ensure adequate ventilation. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse.

Storage: Keep containers tightly closed in a dry, cool and well-ventilated place. Store indoors, away from incompatible substances. Store at around 20 °C. Do not freeze. Protect from light and heat. Store locked up.

Incompatible Materials: Strong oxidizing agents, acids, bases, amines, alcohols, and

polymerizing initiators.

SECTION 8: Exposure Controls / Personal Protection

Exposure Guidelines:

Component	ACGIH TLV	OSHA PEL	NIOSH
N-Vinyl-2-pyrrolidone	TWA: 0.05 ppm	TWA: 0.05 ppm	TWA: 0.05 ppm

Engineering Measures: Ensure adequate ventilation, especially in confined areas. Facilities storing or utilizing this material should be equipped with an eyewash station and a safety shower close to the workstation.

Personal Protective Equipment:

- **Eye/Face Protection:** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166. Tight-sealing safety goggles. Face protection shield.
- **Skin and Body Protection:** Wear appropriate protective gloves (e.g., butyl rubber, nitrile rubber) and clothing to prevent skin exposure.
- **Respiratory Protection:** Follow OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Recommended filter type: Organic gases and vapours filter, Type A (brown), conforming to EN 14387.
- **Hygiene Measures:** Handle in accordance with good industrial hygiene and safety practice.

SECTION 9: Physical and Chemical Properties

Property	Value
Physical State	Liquid

Property	Value
Appearance / Color	Clear, light yellow liquid
Odor	Strong, characteristic
Odor Threshold	No information available
pH	9–10 (100 g/L aq. solution)
Melting/Freezing Point	13–14 °C / 55.4–57.2 °F
Boiling Point/Range	218 °C / 424 °F @ 760 mmHg
Flash Point	95 °C / 203 °F
Evaporation Rate	Not available
Flammability (liquid)	No information available
Explosion Limits	Lower 1.4 vol%; Upper 10 vol%
Vapor Pressure	0.114 mm Hg @ 25 °C
Vapor Density	3.8 (air = 1)
Specific Gravity/Density	1.043 g/cm³
Water Solubility	52.1 g/L @ 25 °C (soluble)
Solubility in Other Solvents	No information available

Property	Value
Partition Coefficient (log Pow)	0.4
Autoignition Temperature	240 °C / 464 °F
Decomposition Temperature	No data available
Viscosity	2.4 mPa·s @ 20 °C
Molecular Formula	C_6H_9NO
Molecular Weight	111.14

SECTION 10: Stability and Reactivity

Reactivity: None known, based on information available.

Chemical Stability: Stable under normal conditions. Becomes yellow over time. This material is a monomer and may polymerize under certain conditions if the stabilizer is lost.

Conditions to Avoid: Incompatible products, excess heat, sources of ignition, light.

Incompatible Materials: Strong oxidizing agents, acids, bases, amines, alcohols, polymerizing initiators.

Hazardous Decomposition Products: Carbon monoxide (CO), carbon dioxide (CO_2), nitrogen oxides (NOx).

Hazardous Polymerization: Hazardous polymerization may occur in the presence of alcohols, acids, bases and amines, or if the stabilizer is depleted. Heat can initiate reaction.

Hazardous Reactions: None under normal processing.

SECTION 11: Toxicological Information

Information on Expected Routes of Exposure: Inhalation, ingestion, eyes, skin.

Acute Toxicity:

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
N-Vinyl-2-pyrrolidone	1043–1470 mg/kg (Rat)	560–1040 mg/kg (Rabbit)	LC50 = 3070–3200 mg/m³ (Rat) 4 h

Potential Health Effects:

- **Eye:** Causes serious eye damage/burns. Risk of serious damage to eyes. Draize test, rabbit: 100 mg – Severe.
- **Skin:** Harmful in contact with skin. May cause irritation.
- **Ingestion:** Harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea. May cause irritation to mucous membranes.
- **Inhalation:** Harmful by inhalation. Irritating to respiratory system. May cause coughing or breathing difficulty, headache.
- **Chronic:** Chronic exposure may cause liver damage. May cause lung damage.

Toxicologically Synergistic Products: No data available.

Carcinogenicity: Category 2 – Suspected of causing cancer. ACGIH: A3 (Confirmed animal carcinogen with unknown relevance to humans). IARC: Not listed. NTP: Not listed. OSHA: Not listed.

Germ Cell Mutagenicity: Not mutagenic in AMES Test.

Reproductive Toxicity: No data available.

STOT – Single Exposure: Category 3; Target organ: Respiratory system.

STOT – Repeated Exposure: Category 1 (per current classification); Target organs: Liver, eyes, skin, respiratory system.

Aspiration Hazard: No data available.

Endocrine Disrupting Properties: This product does not contain any known or suspected endocrine disruptors.

Other Adverse Effects: See actual entry in RTECS (UV6107000) for complete information.

SECTION 12: Ecological Information

Ecotoxicity: Do not empty into drains. Contains a substance which is harmful to aquatic organisms.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
N-Vinyl-2-pyrrolidone	EC50 = 780 mg/L (72 h)	Not listed	EC50 = 4812 mg/L (17 h)	EC50 = 45 mg/L (48 h)

Persistence and Degradability: Soluble in water. Persistence is unlikely based on information available. Biodegradable.

Bioaccumulation/Accumulation: No information available. log Pow = 0.4 (low bioaccumulation potential).

Mobility: Will likely be mobile in the environment due to its water solubility.

Other Adverse Effects: No information available.

SECTION 13: Disposal Considerations

Waste Disposal Methods: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for classification are listed in 40 CFR Part 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.
RCRA U-Series: None listed.

Dispose of contents/container to an approved waste disposal plant. Do not empty into drains; do not flush into surface water or sanitary sewer system.

SECTION 14: Transport Information

Mode	Classification
US DOT	TOXIC LIQUIDS, ORGANIC, N.O.S. (N-Vinyl-2-pyrrolidinone); Hazard Class 6.1; UN 2810; Group III
Canada TDG	TOXIC LIQUID, ORGANIC, NOS (N-VINYL-2-PYRROLIDINONE); Class 6.1; UN 2810; Packi
IATA	Not regulated (per source SDS); confirm with current IATA DGR
IMDG/IMO	Not regulated (per source SDS); confirm with current IMDG Code

Note: Transport classifications may vary with packaging size and mode. Verify against the current edition of the applicable regulations before shipment.

SECTION 15: Regulatory Information

United States of America Inventory:

Component	CAS No.	TSCA
N-Vinyl-2-pyrrolidone	88-12-0	Listed – Active

International Inventories:

Component	CAS No.	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
N-Vinyl-2-pyrroli	88-12	X	–	201-800-4	X	X	X	X	X	KE-13323

Component	CASNo.	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
done	-0									

U.S. Federal Regulations:

- **SARA 313:** This product does not contain chemicals subject to reporting requirements under Section 313 of Title III of SARA and 40 CFR Part 372.
- **SARA 311/312:** Refer to Section 2 for appropriate hazard classifications.
- **CERCLA:** This material, as supplied, contains one or more substances regulated as a hazardous substance under CERCLA (40 CFR 302) or SARA (40 CFR 355).
- **Clean Air Act:** Not applicable.
- **Clean Water Act:** Not applicable.
- **OSHA:** Not applicable.

U.S. State Right-to-Know Regulations:

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
N-Vinyl-2-pyrrolidone	–	X	–	–	–

California Proposition 65: This product does not contain any Proposition 65 chemicals.

U.S. Department of Homeland Security: This product does not contain any DHS chemicals.

Other International Regulations:

- **Mexico – Grade:** Slight risk, Grade 1
- **EU REACH:** REACH Annex XVII – Use restricted. See entry 75. Not on the Candidate List of SVHC (Article 59).

- **OECD HPV:** Listed
- **Persistent Organic Pollutant:** Not applicable
- **Ozone Depletion Potential:** Not applicable
- **RoHS:** Not applicable
- **Seveso III Directive (2012/18/EC):** Not applicable
- **Rotterdam Convention (PIC):** Not applicable
- **Basel Convention:** Not applicable
- **PFAS:** Not applicable

Canada – WHMIS: This product has a WHMIS classification of D1B, D2B.

Canada – Ingredient Disclosure List: CAS# 88-12-0 is listed.

EU Labeling (EC Directives):

- Hazard Symbol: Xn (Harmful)
- Risk Phrases: R20/21/22 (Harmful by inhalation, in contact with skin and if swallowed); R37 (Irritating to respiratory system); R40 (Limited evidence of a carcinogenic effect); R41 (Risk of serious damage to eyes); R48/20 (Harmful: danger of serious damage to health by prolonged exposure through inhalation)
- Safety Phrases: S26; S36/37/39

WGK (Water Danger/Protection): CAS# 88-12-0: WGK 3 (severely hazardous to water).

SECTION 16: Other Information

Creation Date: 01-Nov-2026 (based on compiled source data)

Revision Summary: New SDS prepared for Palkem India product N-Vinyl-2-pyrrolidone (NVP), CAS 88-12-0, ≥ 99.8 % HPLC, compiled from current safety data sources and aligned with US OSHA HazCom 2024 (29 CFR 1910.1200).

Abbreviations:

- ACGIH – American Conference of Governmental Industrial Hygienists
- TLV – Threshold Limit Value

- TWA – Time-Weighted Average
- PEL – Permissible Exposure Limit
- STOT – Specific Target Organ Toxicity
- LD50 – Lethal Dose, 50%
- LC50 – Lethal Concentration, 50%
- RTECS – Registry of Toxic Effects of Chemical Substances
- TSCA – Toxic Substances Control Act
- DSL/NDSL – Canadian Domestic/Non-Domestic Substances List
- EINECS – European Inventory of Existing Commercial Chemical Substances
- WGK – German Water Hazard Class

Disclaimer: The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Users should make their own investigations to determine the suitability of the information for their particular purposes.

Prepared by: Palkem India – Regulatory Affairs / Product Stewardship