

Safety Data Sheet

Vinyl Pyrrolidone EN

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Version: 1.0

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(30652961/SDS_GEN_CA/EN)

1. Identification

Product identifier used on the label

Vinyl Pyrrolidone EN

Recommended use of the chemical and restriction on use

Recommended use*: Intermediate (isolated)

Recommended use*: Chemical

Unsuitable for use: Not intended for sale to or use by the general public.

* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:

BASF Canada Inc.

5025 Creekbank Road

Building A, Floor 2

Mississauga, ON, L4W 0B6, CANADA

Telephone: +1 289 360-1300

Emergency telephone number

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300

BASF HOTLINE: (800) 454-COPE (2673)

Other means of identification

Molecular formula: C(6)H(9)NO

Chemical family: heterocyclic, vinyl compounds

Synonyms: 1-ETHENYL-2-PYRROLIDINONE

N,N' Bis(1-Methylpropyl)1,4 Benzenediamine

VINYL PYRROLIDONE MONOMER; N-VINYL-2-PYRROLIDONE

N,N'-Di(secbutyl)phenylene diamine

2. Hazards Identification

According to Hazardous Products Regulations (HPR) (SOR/2015-17)

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Classification of the product

Acute Tox.	4 (oral)	Acute toxicity
Acute Tox.	4 (Inhalation - mist)	Acute toxicity
Acute Tox.	4 (dermal)	Acute toxicity
Eye Dam./Irrit.	1	Serious eye damage/eye irritation
Carc.	2	Carcinogenicity
STOT SE	3 (irritating to respiratory system)	Specific target organ toxicity — single exposure
STOT RE	2	Specific target organ toxicity — repeated exposure
Aquatic Acute	3	Hazardous to the aquatic environment - acute

Label elements

Pictogram:



Signal Word:

Danger

Hazard Statement:

H318	Causes serious eye damage.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H373	May cause damage to organs (Liver) through prolonged or repeated exposure.
H302 + H312 + H332	Harmful if swallowed, in contact with skin or if inhaled
H402	Harmful to aquatic life.

Precautionary Statements (Prevention):

P280	Wear protective gloves, protective clothing and eye protection or face protection.
P271	Use only outdoors or in a well-ventilated area.
P201	Obtain special instructions before use.
P260	Do not breathe dust/gas/mist/vapours.
P202	Do not handle until all safety precautions have been read and understood.
P273	Avoid release to the environment.
P270	Do not eat, drink or smoke when using this product.
P264	Wash contaminated body parts thoroughly after handling.

Precautionary Statements (Response):

P310	Immediately call a POISON CENTER or physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P352	IF ON SKIN (or hair): Wash with plenty of soap and water.
P361 + P364	Take off immediately all contaminated clothing and wash it before reuse.
P330	Rinse mouth

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Precautionary Statements (Storage):

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Precautionary Statements (Disposal):

P501 Dispose of contents and container to hazardous or special waste collection point.

Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.

3. Composition / Information on Ingredients

According to Hazardous Products Regulations (HPR) (SOR/2015-17)

1-vinyl-2-pyrrolidone

CAS Number: 88-12-0

Content (W/W): >= 99.5 - <= 100.0%

Synonym: 1-Ethenyl-2-pyrrolidinone

4. First-Aid Measures

Description of first aid measures

General advice:

Remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air. Assist in breathing if necessary. Seek medical attention.

If on skin:

Wash affected areas thoroughly with soap and water. Remove contaminated clothing. If irritation develops, seek medical attention.

If in eyes:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. Immediate medical attention required.

If swallowed:

If person is conscious and can swallow, give two glasses of water. Do not induce vomiting unless told to by a poison control center or doctor. Immediate medical attention required.

Most important symptoms and effects, both acute and delayed

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., Further symptoms are possible

Indication of any immediate medical attention and special treatment needed

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Note to physician

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Suitable extinguishing media:
water spray, dry powder, foam

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
nitrogen oxides, carbon oxides

The substances/groups of substances mentioned can be released in case of fire. Under certain conditions in case of fire other hazardous combustion products may be generated.

Advice for fire-fighters

Protective equipment for fire-fighting:

Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:

Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

Impact Sensitivity:

Remarks: Based on the chemical structure there is no shock-sensitivity.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Use personal protective clothing. Keep unprotected persons away. Ensure adequate ventilation. Breathing protection required. Avoid contact with the skin, eyes and clothing.

Environmental precautions

Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up

For large amounts: Pump off product.

For residues: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr).

Cleaning operations should be carried out only while wearing breathing apparatus. To clean the floor and all objects contaminated by this material, use plenty of water. Dispose of absorbed material in accordance with regulations.

7. Handling and Storage

Precautions for safe handling

Ensure thorough ventilation of stores and work areas. Protect against heat. Product solidified and/or tending to sedimentation in barrels can be liquified or homogenized by careful application of indirect heat (no naked flames or direct contact with a heat source). Homogenize before use.

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Protection against fire and explosion:

Prevent electrostatic charge - sources of ignition should be kept well clear - fire extinguishers should be kept handy.

Conditions for safe storage, including any incompatibilities

Segregate from acids and acid forming substances.

Further information on storage conditions: Keep only in the original container. Keep under nitrogen.

Storage stability:

Storage temperature: < 30 °C

Storage duration: 3 Months

Keep under nitrogen.

Protect from temperatures below: 17 °C

The product crystallizes below the limit temperature.

Protect from temperatures above: 25 °C

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

8. Exposure Controls/Personal Protection

Components with occupational exposure limits

1-vinyl-2-pyrrolidone ACGIH, US: TWA value 0.05 ppm ;

Personal protective equipment

Respiratory protection:

Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator.

Hand protection:

Chemical resistant protective gloves, Suitable materials, rubber, plastic

Eye protection:

Tightly fitting safety goggles (chemical goggles).

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures:

Do not inhale gases/vapours/aerosols. Avoid contact with the skin, eyes and clothing. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Handle in accordance with good industrial hygiene and safety practice. Wash soiled clothing immediately.

9. Physical and Chemical Properties

Form:	liquid
Odour:	amine-like
Odour threshold:	not determined
Colour:	colourless to yellowish

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pH value:	9 - 10 (100 g/l, 20 °C)	
Melting point:	13.5 °C	
Freezing point:	Literature data.	
Boiling point:	No data available.	
Boiling range:	218 °C (1,013 hPa)	
Flash point:	No data available.	
Flammability:	95 °C not flammable	(closed cup) (derived from flash point)
Lower explosion limit:	1.4 %(V) For liquids not relevant for classification and labelling. The lower explosion point may be 5 - 15 °C below the flash point.	(air)
Upper explosion limit:	10 %(V) For liquids not relevant for classification and labelling.	(air)
Autoignition:	240 °C Literature data.	
SADT:	> 75 °C Heat accumulation / Dewar 500 ml (SADT, UN-Test H.4, 28.4.4)	
Vapour pressure:	0.12 mbar (20 °C) 1.23 mbar (50 °C)	
Density:	1.04 g/cm ³ (20 °C)	(other)
Relative density:	1.045 (20 °C)	(other)
Vapour density:	> 1 (20 °C) Heavier than air.	(estimated)
Partitioning coefficient n-octanol/water (log Pow):	0.4 (25 °C)	(OECD Guideline 107)
Self-ignition temperature:	Based on its structural properties the product is not classified as self-igniting.	
Thermal decomposition:	95 °C, 190 kJ/kg Thermal decomposition above the indicated temperature is possible. 180 °C, 310 kJ/kg	
Viscosity, dynamic:	2.1 mPa.s (20 °C)	
Particle size:	The substance / product is marketed or used in a non solid or granular form.	
Solubility in water:	52.1 g/l (25 °C)	
Miscibility with water:	(20 °C) miscible in all proportions	
Solubility (qualitative):	miscible solvent(s): organic solvents,	
Molar mass:	111.14 g/mol	

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Evaporation rate: Value can be approximated from Henry's Law Constant or vapor pressure.

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:

Not corrosive to: steel

Oxidizing properties:

Based on its structural properties the product is not classified as oxidizing.

Formation of flammable gases:	Remarks:	Forms no flammable gases in the presence of water.
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Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

Polymerization occurs with acids. Heat develops during polymerization. Violent reaction with radical formers. The product can polymerize if the shelf life or storage temperature are greatly exceeded.

Conditions to avoid

Avoid heat. avoid atmospheric oxygen

Incompatible materials

free radical initiators, acids, oxidizing agents, peroxides

Hazardous decomposition products

Decomposition products:

Possible decomposition products: acetaldehyde, 2-Pyrrolidone

Thermal decomposition:

95 °C

Thermal decomposition above the indicated temperature is possible.

180 °C

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

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Assessment of acute toxicity: Of moderate toxicity after single ingestion. Of moderate toxicity after short-term inhalation. Of moderate toxicity after short-term skin contact. The substance can be absorbed through the skin.

The substance can be absorbed through the skin.

Oral

Type of value: LD50

Species: rat

Value: 1,022 mg/kg (980 µl/kg) (BASF-Test)

Inhalation

Type of value: LC50

Species: rat

Value: 3.07 mg/l (BASF-Test)

Exposure time: 4 h

An aerosol was tested.

Dermal

Type of value: LD50

Species: rat (male/female)

Value: 1,043 mg/kg

Assessment other acute effects

Assessment of STOT single:

Causes temporary irritation of the respiratory tract.

Irritation / corrosion

Assessment of irritating effects: Not irritating to the skin. May cause severe damage to the eyes.

Skin

Species: rabbit

Result: non-irritant

Method: Draize test

Eye

Species: rabbit

Result: Risk of serious damage to eyes.

Method: Draize test

Sensitization

Assessment of sensitization: Skin sensitizing effects were not observed in animal studies.

Buehler test

Species: guinea pig

Result: Non-sensitizing.

Method: OECD Guideline 406

Aspiration Hazard

No aspiration hazard expected.

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: Harmful: Danger of serious damage to health by prolonged exposure through inhalation.

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Genetic toxicity

Assessment of mutagenicity: No mutagenic effect was found in various tests with bacteria and mammalian cell culture. The substance was not mutagenic in a test with mammals.

Carcinogenicity

Assessment of carcinogenicity: Indication of possible carcinogenic effect in animal tests. IARC Group 3 (not classifiable as to human carcinogenicity).

Reproductive toxicity

Assessment of reproduction toxicity: No data available. Study scientifically not justified. The results of animal studies suggest a fertility impairing effect.

Teratogenicity

Assessment of teratogenicity: Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Other Information

The product has not been tested. The statements on toxicology have been derived from the properties of the individual components.

Medical conditions aggravated by overexposure

Data available do not indicate that there are medical conditions that are generally recognized as being aggravated by exposure to this substance/product. See SDS section 11 - Toxicological information.

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

Acutely harmful for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish

LC50 (96 h) 976 mg/l, *Salmo gairdneri*, syn. *O. mykiss* (OECD Guideline 203, static)

The details of the toxic effect relate to the nominal concentration.

Aquatic invertebrates

EC50 (48 h) 45 mg/l, *Daphnia magna* (OECD Guideline 202, part 1)

The details of the toxic effect relate to the nominal concentration.

Aquatic plants

EC50 (72 h) > 1,000 mg/l (growth rate), *Scenedesmus subspicatus* (DIN 38412 Part 9, static)

The details of the toxic effect relate to the nominal concentration.

EC10 (72 h) 530 mg/l (growth rate), *Scenedesmus subspicatus* (DIN 38412 Part 33, static)

The details of the toxic effect relate to the nominal concentration.

Chronic toxicity to fish

Study scientifically not justified.

Chronic toxicity to aquatic invertebrates

Study scientifically not justified.

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Assessment of terrestrial toxicity

No data available concerning terrestrial toxicity.
Study scientifically not justified.

Microorganisms/Effect on activated sludge

Toxicity to microorganisms

DIN 38412 Part 8 aerobic

bacterium/EC50 (17 h): 4,812 mg/l

The details of the toxic effect relate to the nominal concentration.

OECD Guideline 209 aerobic

activated sludge, industrial/EC20 (30 min): > 1,995 mg/l

Persistence and degradability

Assessment biodegradation and elimination (H₂O)

Readily biodegradable (according to OECD criteria).

Elimination information

90 - 100 % DOC reduction (28 d) (OECD 301 A (new version)) (aerobic, activated sludge, domestic)

Assessment of stability in water

In contact with water the substance will hydrolyse slowly.

Information on Stability in Water (Hydrolysis)

t_{1/2} 20 - 40 min (37 °C, pH value 2.2), (other, other)

t_{1/2} 40.9 h (25 °C, pH value 4), (OECD Guideline 111, pH 4)

t_{1/2} > 120 h (50 °C, pH value 7), (OECD Guideline 111, pH 7)

t_{1/2} > 120 h (50 °C, pH value 9), (OECD Guideline 111, pH 9)

Bioaccumulative potential

Assessment bioaccumulation potential

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Bioaccumulation potential

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Mobility in soil

Assessment transport between environmental compartments

The substance will not evaporate into the atmosphere from the water surface.
Adsorption to solid soil phase is not expected.

Additional information

Adsorbable organically-bound halogen(AOX):

This product contains no organically-bound halogen.

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13. Disposal considerations

Waste disposal of substance:

Incinerate in suitable incineration plant, observing local authority regulations.

Container disposal:

Contaminated packaging should be emptied as far as possible and disposed of in the same manner as the substance/product.

14. Transport Information

Land transport

TDG

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

Further information

Taking into account a normal duration of transport of 90 days the following statement is valid: The product is that stable, that in packaging at temperature of 50 ° C and in tanks at temperature of 45 ° C no dangerous polymerization occurs.

15. Regulatory Information

Federal Regulations

Registration status:

Chemical DSL, CA released / listed

NFPA Hazard codes:

Health: 3 Fire: 1 Reactivity: 0 Special:

Assessment of the hazard classes according to UN GHS criteria (most recent version):

Aquatic Acute	3	Hazardous to the aquatic environment - acute
Acute Tox.	4 (oral)	Acute toxicity
Eye Dam./Irrit.	1	Serious eye damage/eye irritation
Carc.	2	Carcinogenicity
STOT SE	3 (irritating to respiratory system)	Specific target organ toxicity — single exposure
STOT RE	2	Specific target organ toxicity — repeated exposure
Acute Tox.	4 (dermal)	Acute toxicity

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Acute Tox.

4 (Inhalation - mist)

Acute toxicity

16. Other Information

SDS Prepared by:

BASF NA Product Regulations

SDS Prepared on: 2022/10/24

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

END OF DATA SHEET