Chemical Safety Data Sheet MSDS / SDS

1-vinyl-2-pyrrolidone SDS

Revision Date:2024-04-25 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name: 1-vinyl-2-pyrrolidone

CAS: 88-12-0

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

Telephone: +91 9550333722

SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 4, Oral
Acute toxicity - Category 4, Dermal

Serious eye damage, Category 1
Acute toxicity - Category 4, Inhalation
Specific target organ toxicity – single exposure, Category 3
Carcinogenicity, Category 2
Specific target organ toxicity – repeated exposure, Category 2

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H302 Harmful if swallowed
H312 Harmful in contact with skin
H318 Causes serious eye damage
H332 Harmful if inhaled
H335 May cause respiratory irritation
H351 Suspected of causing cancer
H373 May cause damage to organs through prolonged or repeated exposure

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P271 Use only outdoors or in a well-ventilated area.
P203 Obtain, read and follow all safety instructions before use.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.

Response

P301+P317 IF SWALLOWED: Get medical help.
P330 Rinse mouth.
P302+P352 IF ON SKIN: Wash with plenty of water/...
P317 Get medical help.
P321 Specific treatment (see ... on this label).

P362+P364 Take off contaminated clothing and wash it before reuse.
P305+P354+P338 IF IN EYES: Immediately rinse 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.
P319 Get medical help if you feel unwell.
P318 IF exposed or concerned, get medical advice.

Storage

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

Disposal

P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	1-vinyl-2-pyrrolidone
Common names and synonyms:	1-vinyl-2-pyrrolidone
CAS number:	88-12-0
EC number:	201-800-4
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap.

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Give one or two glasses of water to drink. Refer for medical attention .

Most important symptoms/effects, acute and delayed

SYMPTOMS: This compound may cause interstitial fibrosis in the lungs. Lesions regress when patient is no longer being exposed to the compound. (NTP, 1992)

Indication of immediate medical attention and special treatment needed, if necessary

Minimum/Potential Fatal Human Dose

1. 1= practically nontoxic: probable oral lethal dose (human) above 15 g/kg, more than 1 quart (2.2 lb) for 70 kg person (150 lb).

Absorption, Distribution and Excretion

When given parenterally, unexcreted particles are phagocytized by cells of reticuloendothelial system & deposited in storage sites in liver, spleen, lung, bone marrow...

SECTION 5: Firefighting measures

Suitable extinguishing media

Fires involving this compound should be controlled with a dry chemical, carbon dioxide or Halon extinguisher. (NTP, 1992)

Specific hazards arising from the chemical

Flash point data for this chemical are not available, but it is probably non-flammable. (NTP, 1992)

Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Environmental precautions

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Ventilation. Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

Conditions for safe storage, including any incompatibilities

Separated from strong acids. Keep in the dark. Cool. Store only if stabilized.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: 0.05 ppm as TWA; A3 (confirmed animal carcinogen with unknown relevance to humans).MAK: 0.047 mg/m3, 0.01 ppm; peak limitation category: II(2); skin absorption (H); carcinogen category: 4; pregnancy risk group: C

Biological limit values

no data available

Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety goggles or eye protection in combination with breathing protection.

Skin protection

Protective gloves.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Liquid.
Colour:	Colourless.
Odour:	ODORLESS
Melting point/freezing point:	13 - 14 °C. Atm. press.:101.3 kPa. Remarks:No specific information on atmospheric pressure reported. Assumed to be standard pressure (101.3 kPa).
Boiling point or initial boiling point and boiling range:	218 °C. Atm. press.:1 013 hPa.;191.2 °C. Atm. press.:500 hPa. Remarks:Based on measured vapor pressure graph.
Flammability:	Combustible.

Lower and upper explosion limit/flammability limit:	no data available
Flash point:	95 °C. Atm. press.: 1 013 hPa.
Auto-ignition temperature:	240 °C. Atm. press.: 101.3 kPa. Remarks: No specific information on atmospheric pressure reported. Assumed to be standard pressure (101.3 kPa).
Decomposition temperature:	no data available
pH:	Between 3,0 and 7,0 (5?% solution)
Kinematic viscosity:	dynamic viscosity (in mPa s) = 2.1. Temperature: 20°C.; dynamic viscosity (in mPa s) = 1.7. Temperature: 50.0°C.
Solubility:	greater than or equal to 100 mg/mL at 68° F (NTP, 1992)
Partition coefficient n-octanol/water:	log Pow = 0.4. Temperature: 25 °C. Remarks: PH value is assumed.
Vapour pressure:	0.12 hPa. Temperature: 20 °C.; 1.23 hPa. Temperature: 50 °C.
Density and/or relative density:	1.04 g/cm3. Temperature: 20 °C.
Relative vapour density:	3.8 (vs air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

The substance may polymerize in the presence of air due to warming, under the influence of light and acids. Decomposes on burning. This produces toxic and corrosive gases of nitrogen oxides.

Chemical stability

no data available

Possibility of hazardous reactions

Compatible with wide range of hydrophilic and hydrophobic resins.POLYVINYLPYRROLIDONE is a polymeric material and probably has low reactivity. It reacts as a weak base.

Conditions to avoid

no data available

Incompatible materials

no data available

Hazardous decomposition products

When heated to decomposition it emits toxic fumes of nitroxides. Poly(1-vinyl-2-pyrrolidinone) homopolymer and Hueper's polymer 1-7

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 - rat (male/female) - 1 043 mg/kg bw. Remarks:Original data: LD50 = 1.0 mL/kg bw; calculated with a density of 1.043 g/mL.

Inhalation: LC50 - rat (male/female) - 3.07 mg/L air (analytical).

Dermal: LD50 - rabbit - 560 mg/kg bw.

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

Evaluation: No epidemiological data relevant to the carcinogenicity of ... polyvinyl pyrrolidone were available. ... There is limited evidence for the carcinogenicity of polyvinyl pyrrolidone in experimental animals. Overall evaluation: ... Polyvinyl pyrrolidone is not classifiable as to its carcinogenicity in humans (Group 3).

Reproductive toxicity

no data available

STOT-single exposure

The substance is corrosive to the eyes. The substance is irritating to the respiratory tract.

STOT-repeated exposure

The substance may have effects on the liver. This may result in liver impairment. Tumours have been detected in experimental animals but may not be relevant to humans.

Aspiration hazard

A harmful contamination of the air will be reached quickly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

Toxicity

Toxicity to fish: LC50 - Oncorhynchus mykiss (previous name: Salmo gairdneri) - 976 mg/L - 72 h.

Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia sp. - 45 mg/L - 48 h.

Toxicity to algae: EC50 - Desmodesmus subspicatus (previous name: Scenedesmus subspicatus) - > 1 000 mg/L - 72 h.

Toxicity to microorganisms: EC90 - Pseudomonas putida - 7 150 mg/L - 17 h.

Persistence and degradability

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

Other adverse effects

no data available

SECTION 13: Disposal considerations

Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

UN Number

ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)

Transport hazard class(es)

ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)

Packing group, if applicable

ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)

Environmental hazards

ADR/RID: No
IMDG: No
IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)

Listed.

EC Inventory

Listed.

United States Toxic Substances Control Act (TSCA) Inventory

Listed.

China Catalog of Hazardous chemicals 2015

Not Listed.

New Zealand Inventory of Chemicals (NZIoC)

Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

Abbreviations and acronyms

CAS: Chemical Abstracts Service

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulation concerning the International Carriage of Dangerous Goods by Rail

IMDG: International Maritime Dangerous Goods

IATA: International Air Transportation Association

TWA: Time Weighted Average

STEL: Short term exposure limit

LC50: Lethal Concentration 50%

LD50: Lethal Dose 50%

EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home

HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm

IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/

eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp

ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg

Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Other Information

Depending on the degree of exposure, periodic medical examination is suggested.