


SAFETY DATA SHEET

2-PYROLLIDONE

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

1.1 Product identifier:	
CAS Number:-	616-45-5
EC number:	210-483-1
1.2 SYNONYMS:	<ul style="list-style-type: none"> • 2-Pyrrolidinone • Pyrrolidin-2-one • Butyrolactam

SECTION 2: Hazards identification:

2.1 Classification of the substance or mixture:	Classification according to Regulation (EC) No 1272/2008 The substance is classified according to the CLP regulation.
2.2 Label elements:	Labelling according to Regulation (EC) No 1272/2008 Eye irritation, (Category 2) Reproductive toxicity, (Category 1B)
Hazard Pictograms:	
Signal Word:	Danger
Hazard statements:	H319: Causes serious eye irritation. H360D: May damage the unborn child.
Precautionary Statements:	P202: Do not handle until all safety precautions have been read and understood. P264: Wash skin thoroughly after handling. P280: Wear protective gloves/ protective clothing/ eye protection/ face protection. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes.

	Remove contact lenses, if present and easy to do. Continue rinsing. P308 + P313: IF exposed or concerned: Get medical advice/ attention. P337 + P313: If eye irritation persists: Get medical advice/ attention. P405: Store locked up. P501: Dispose of contents/ container to an approved waste disposal plant.
2.3 Other hazards:	
Inhalation:	may cause respiratory irritation, dizziness, or headaches with prolonged or high-level exposure.
Ingestion:	may cause gastrointestinal irritation, nausea, vomiting, and central nervous system effects such as dizziness or drowsiness.
Skin Contact:	may cause irritation, redness, and dryness, especially with prolonged or repeated exposure.
Eye contact:	may cause irritation, redness, and watering, with possible temporary discomfort.
Chronic Exposure:	may lead to skin sensitization, dermatitis, or effects on the central nervous system with prolonged high-level contact or inhalation.
Aggravation of pre-existing conditions:	may aggravate pre-existing conditions such as skin disorders, respiratory issues, or central nervous system disorders due to its irritant and neurotoxic potential.

SECTION 3: Composition/information on ingredients

3.1 Chemical characterisation:	Substances
CAS No:	Description: 616-45-5 2-PYROLLIDONE
Identification number(s):	EC number: 210-483-1

SECTION 4: First aid measures

4.1 Description of first aid measures	
General information:	
After inhalation:	If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
After skin contact:	Remove contaminated clothing. Wash with soap and water. Consult a physician.
After eye contact:	Immediately flush eyes with plenty of water for at least 15 minutes. consult a physician.
After swallowing:	Rinse mouth with water. Immediately after ingestion. If conscious, make victim drink two glasses at most immediately. Never give anything by mouth to an unconscious person. Do not induce vomiting. Consult a physician.
4.2 Most important symptoms and effects, both acute and delayed:	The most important symptoms and effects include respiratory irritation, dizziness, skin and eye irritation, and potential central nervous system effects, with delayed symptoms possibly including dermatitis or sensitization.
4.3 Indication of any immediate medical attention and special treatment needed:	Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media:	Carbon dioxide. Water spray. Alcohol-resistant foam.
5.2 Special hazards arising from the substance or mixture:	Carbon oxides.

5.3 Advice for firefighters:	Wear fully protective suit, safety glasses and respiratory device. Cool tanks/drums with water spray/remove them into safety.
5.4 further information:	no data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Avoid dust accumulation. Seek medical attention.
6.2 Environmental precautions:	Do not enter this chemical into drains.
6.3 Methods and material for containment and cleaning up:	Take up spill into absorbent material, e.g.: sand, earth, vermiculite, powdered limestone. Scoop absorbed substance into closing containers. Spill must not return in its original container. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

SECTION 7: Handling and storage

7.1 Precautions for safe handling:	For use in are with adequate ventilation. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material Do not use in confined spaces. Electrostatic discharge protection.
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	Minimize dust generation and accumulation. Avoid ingestion and inhalation.
7.2 Conditions for safe storage, including any incompatibilities:	Store in original containers. Keep containers securely sealed Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Protect containers against physical damage and check regularly for leaks. Store in a dry and dark area. Do not handle in flammable atmospheres.
Requirements to be met by storerooms and receptacles:	Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
7.3 Specific end uses:	no data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters	
Additional information about design of technical facilities:	A system of local and general exhaust is recommended.
8.2 Exposure controls	
Appropriate engineering controls	Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
Personal protective equipment:	Dust respirator, protective masks, wearing anti chemical gloves, rubber gloves, etc.
General protective and hygienic measures:	Eyes, body and hand protection, maintain indoor air unobstructed. Wear protective equipment.
	Respiratory protection: Required.

Protection of hands:	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws. Wash and dry hands.
	Eye protection: Required
Protection of Body:	Complete suit protecting against chemicals, Flame retardant antistatic protective clothing.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties	
General Information	
Appearance: Form:	Liquid
Colour:	Colourless to pale yellow
Odour:	Slight Characteristic odor
pH-value:	7
Melting point/Melting range:	25°C
Boiling point/Boiling range:	245°C
Flammability (solid, gaseous):	Flammable
Ignition temperature:	400°C
Decomposition temperature:	200°C
Self-igniting:	None
Flash point:	128°C
Danger of explosion:	None
Explosion limits: Lower:	Not determined
Explosion limits: Upper:	Not determined
Vapour pressure:	0.05 mmHg at 25°C
Density at 20 °C:	1.12 g/cm ³
Relative density:	1.12
Vapour density:	No data available
Evaporation rate:	No data available

Solubility in / Miscibility with- water at 20 °C:	Soluble
Partition coefficient:(n- octanol/water)	-0.46
Viscosity:	1.7cP at 25°C

SECTION 10: Stability and reactivity

10.1 Reactivity	No data available.
10.2 Chemical stability	Stable under room temperatures.
10.3 Possibility of hazardous reactions	May react with strong oxidizing agents to undergo decomposition.
10.4 Conditions to avoid	Excessive heat, moisture, water
10.5 Incompatible materials	Strong oxidizing agents, acids, bases, water.
10.6 Hazardous decomposition products	Carbon dioxide, carbon monoxide.

SECTION 11: Toxicological information

11.1 Information on toxicological effects	
Acute Toxicity:	LD50 (Oral, Rat): 2.000 mg/kg LD50 (Dermal, Rabbit): 2.000 mg/kg LC50 (Inhalation Rat): 0.061 mg/l (4hr)
Skin corrosion/Irritation:	No data available
Serious eye damage/irritation:	Causes eye irritation
Respiratory damage/irritation:	No data available
Ingestion:	No data available
Germ cell mutagenicity:	No data available
Carcinogenicity:	No data available
Reproductive toxicity:	Suspected of damaging fertility
Specific target organ toxicity - single exposure:	No data available

Specific target organ toxicity - repeated exposure:	No data available
Aspiration hazard:	No data available
Signs and Symptoms of Exposure:	Refer section 2.3
11.2 Additional toxicological information	
Biodegradability:	Readily Biodegradable

SECTION 12: Ecological information

12.1 Toxicity Aquatic toxicity:	LC50(fish): 5.000 mg/l (96hr) EC50(daphnia): 500 mg/l (48 hr) ErC50(algae): 500 mg/l (48 hr)
12.2 Persistence and degradability:	Readily Biodegradable
12.3 Bioaccumulative potential:	Not bioaccumulative
12.4 Mobility in soil:	high mobility
12.5 Other adverse effects:	No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods	
Uncleaned packaging Recommendation:	dispose of in accordance with local hazardous waste regulations
Recommended cleansing agents:	Water, soapy water, ethanol, isopropanol, acetone, commercial cleaning solutions.

SECTION 14: Transport information

14.1 UN-Number · ADR, ADN, IMDG, IATA:	2811
14.2 UN proper shipping name · ADR, ADN, IMDG, IATA:	2-PYROLLIDONE
14.3 Transport hazard class(es) · ADR, ADN, IMDG, IATA :	6.1
14.4 Packing group · ADR, IMDG, IATA:	3
14.5 Environmental hazards:	None

14.6 Special precautions for user:	Handle responsibly.
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SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture Directive 2012/18/EU	Directive 2012/18/EU, under that this substance is not classified in listed substance
Named dangerous substances:	This substance is not listed in the annex 1 to the directive.
15.2 Chemical safety assessment:	Chemical assessment has not been carried out.

SECTION 16: Other information

The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.

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