Technical Data Sheet
Pyrrolidone

Chemical Synonym

2-pyrrolidinone; 2-oxopyrrolidine; 2-pyrro

Applications

- Pharmaceutical chemicals

Product Description

2-Pyrrolidone is a clear, almost colorless liquid above 25°C.

2-Pyrrolidone is an organic synthesis intermediate in the pharmaceutical industry, precursor of N-vinylpyrrolidone.

The product is used as a plasticizer and a setting agent for acrylic emulsions and acrylic/styrene copolymers used in floor polishes.

Typical Properties

Property	Typical Value, Units
General	
Molecular Formula	C_4H_7NO
Molecular Weight	85.1 g/mol
Appearance (above 25°C)	Colorless to light liquid
Autoignition Temperature	395 °C
Boiling Point 1013 hPa 12 hPa	 251.2 °C 114 °C
Density @ 20°C	 1.11 g/cm^3
Dissociation constant, pKa	14.7
Flash Point Closed Cup	 138 °C
Melt point	25 °C
Octanol-water partition coefficient, log Pow	-0.71
pH 100 g/l @ 20°C	 6-9
Refractive Index @ 20°C	 1.4850-1.4870
Surface Tension @ 21°C	 48.8 mN/m
Vapor Pressure @ 25°C	 0.0175 hPa

Viscosity	
@ 25.8°C	16.4 mPa·s
@ 50°C	7.86 mPa·s
Water solubility	Completely miscible

Physical & chemical behavior

2-Pyrrolidone can be mixed in all proportions with water. The product is completely miscible in water at 20% w/w, giving a clear solution at 20°C.

2-Pyrrolidone reacts with halogens at 0°C to give N-halogeno-2-pyrrolidones.

In a strongly alkaline medium, 2-Pyrrolidone hydrolyses to a salt of aminobutyric acid. 2-Pyrrolidone adds to acrylonitrile to give cyanoethylpyrrolidone and, on reaction with formaldehyde, it gives N methylolpyrrolidone.

Packaging

- Bulk
- Steel drums with internal epoxy-lining (225 kg net)

Storage

2-Pyrrolidone is hygroscopic and must be stored in a dry place, preferably in its original packaging.

The product solidifies below 25°C, if that happens, it must be slowly melted by placing it in a warm room at a temperature of 40°C or by using a heating jacket to that temperature. Higher temperatures are likely to make the product turn yellow.

Avoid contact with skin and eyes, and take all normal precautions for handling chemicals. Gloves and protective goggles are recommended.

In the event of accidental spillage, soak up or contain the spilt liquid with sand or earth and dispose of this waste in accordance with current legislation. Wash the area of spillage with water, which should be handled as chemical waste.

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