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# Caprolactam liquid

## Product description

Caprolactam is a monomer used for the production of polyamides.

## Specification

	Test method	Unit	Value
Water content	ISO 760	% m/m	max. 0.01
Content of volatile bases	ISO 8661	meq/kg	max. 0.4
Content of free bases	acidimetric titration	meq/kg	max. 0.05
Content of free acids	acidimetric titration	meq/kg	max. 0.05
Color number of aqueous solution	ISO 8112	50 % m/m	max. 3
Permanganate index (Permanganate absorption number)	ISO 8660		max. 4
Absorbance at 290 nm	ISO 7059		max. 0.05
Iron content	AES	mg/kg	max. 0.5
Ash content	gravimetric	mg/kg	max. 4
Water insoluble material	gravimetric	mg/kg	max. 4

## General properties

	Test method	Unit	Typical value
Density at 80 °C		kg/l	1.014
Bulk density		kg/m <sup>3</sup>	500 - 550
Boiling point at 1.013 mbar		°C	270.8
Flash point	DIN 51758	°C	152
Melting/solidification point		°C	69.2
Solubility in water at 25 °C		kg/l	5.25
Heat of polymerization		kJ/kg	140
Heat of fusion		kJ/kg	142.6
Heat of combustion		kJ/kg	31,900

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**Supply form and storage**

Liquid caprolactam is shipped in vehicles with heatable, insulated tanks, tank containers or bulk containers made of stainless steel (e.g. AISI 304 1/V2A) or aluminum.

Liquid caprolactam is shipped at a temperature of 75 to 90 °C. Excess nitrogen pressure of 0.5 bar prevents air from entering. The following standard shipping containers may be used:

Movable tanks of stainless steel (e.g. AISI 304 L or V2A) or aluminum, equipped with coil/jacket heating with heatable drain valve. Heating media include hot water, unconfined steam or electrical energy.

Road tank trucks equipped as described above. To empty the contents, the jacket of the tank or container must be heated with hot water or steam to a temperature that enables all the caprolactam to drain. Once emptied, the tank must be refilled with nitrogen to an excess pressure of 0.5 bar.

A safety data sheet contains appropriate recommendations for their disposal. Storage tanks and containers for liquid caprolactam should be made of stainless steel, e.g. AISI 304 L or V2A, or aluminum. The storage areas should be protected against outside influence. Good ventilation is important, as are appropriate fire extinguishing mechanisms. Hose connections on all ungrounded and moveable facilities must be earthed during connection and prior to activation. Hoses with metal braids may be used, but we recommend installing metal piping with appropriate couplings. To ensure that you choose suitable connection options, please contact our sales department. Moreover, all tanks, pumps and pipes used for storing caprolactam must be inspected for leaks prior to filling, namely by testing them with pressurized water or nitrogen. It is very important that the systems be carefully drained afterwards and dried with nitrogen. Ideally, they should then be rinsed with caprolactam, which ensures that all water has been removed. The rinse caprolactam should not, however, be re-used, but disposed of in accordance with statutory regulations.

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**Disclaimer**

The aforementioned data shall constitute the agreed contractual quality of the product at the time of passing of risk. The data are controlled at regular intervals as part of our quality assurance program. Neither these data nor the properties of product specimens shall imply any legally binding guarantee of certain properties or of fitness for a specific purpose. No liability of ours can be derived therefrom.

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**Further information**

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