

**Caprolactam**| **Specification****GOST 7850-86****Technical Parameters**

Indices	Premium Grade Company Code 2433220120	First Grade Company Code 2433220130	Second Grade Company Code 2433220140
Permanganate index, units, not more than	4	5	7
Colority of caprolactam water solution with 50% mass fraction, Hazen units, not more than	3,0	4,0	5,0
Content volatile bases, mmol/kg, not more than	0,4	0,5	0,6
Crystallization temperature, °C, not lower than	68,8	68,8	68,8
Mass fraction of iron, %, not more than	0,00002	0,00002	0,00002
Mass fraction of cyclohexanoxim, %, not more than	0,002	0,002	0,002
Optical density of caprolactam solution with 50% mass fraction, not more than	0,04	0,05	0,06
Alkalinity, mmol/kg, not more than	0,1	0,1	0,05
Acidity, mmol/kg, not more than	0,05	0,05	0,1
pH of 20% water solution	6,7-7,3		

## General

Caprolactam - [-NH(CH<sub>2</sub>)<sub>5</sub>CO-], hexamethylenimine, lactam of ε-amino caproic acid. Crystals are white. Molecular weight is 113,16, melting temperature is 69-70 °C, instrumentation temperature is 267 °C, density is 1,02 g/cm<sup>3</sup>, caprolactam is well soluble in water and organic solvents, with acid and alkalies water solutions is hydrolysable to ε-amino caproic acid – H<sub>2</sub>N (CH<sub>2</sub>)<sub>5</sub>COOH.

Main raw materials for caprolactam production are benzene and phenol.

## Application

Caprolactam is used for production of thermosetting resins (Polyamide 6), capron fibers and yarns.

## Safety requirements

Caprolactam is a flammable toxic substance. Caprolactam refers to Hazard Class 3 with respect to impact on human organism. Maximum allowable concentration of caprolactam aerosol in the air of work zone of production areas is 10 mg/m<sup>3</sup>.

## Transportation

Crystallized caprolactam is packed in polyethylene or polypropylene bags of 25 kg. Crystallized caprolactam is transported in covered railway carriages or high-capacity containers or closed trucks.

Crystallized caprolactam is kept in covered storages.

Liquid caprolactam is transported in special tanks. Liquid caprolactam is kept in vessels under nitrogen bed, volume fraction of oxygen in nitrogen shall not exceed 0,0005%.

## Storage

Liquid caprolactam is stored for two months from the date of production.

Crystallized caprolactam is stored for fifteen days from the date of production.