Property Data

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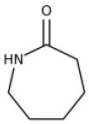
Caprolactam

CAS RN: 105-60-2

Print Date: 2026-06-11

Applications



Caprolactam is used for the production of fibers and filaments made of polyamide 6. Examples for end products of polyamide 6 are: clothing, carpets, ropes, fishing nets, molded plastic parts and packaging films. Engineering plastics like Durethan or cast nylon (shaped as sheet, plates, pipes, cast or rotational molded parts) are another important market for caprolactam. It is also used in numerous special applications.

Storage and shelf life

Caprolactam is a very stable product and it does not lose its properties even after a long period of storage. There is no limiting shelf life, it can be stored for several weeks or months, provided it is stored as follows:

Liquid

Store in suitable tanks or containers from stainless steel or aluminum. All the elements of the storage and conveying systems must be grounded. Store in well isolated and tempered tanks or containers under nitrogen blanket. Ensure adequate ventilation or aspiration when handling or transferring the product.

Solid

Store in a cool, dry place and protected from moisture. Dust may explode and therefore must be removed by effective ventilation. Bags must not be damaged and should be kept closed. After partly use – which is not recommended – bags shall be resealed. It tends to agglomerate (caking) after longer transport and storage (vibrations and recurring temperature changes). This can be fixed by applying e.g. light impacts against the closed bag. Caking does not affect the chemical properties of the product.

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PROPERTIES	TYPICAL DATA	UNIT	TEST METHOD
CHARACTERISTICS	**VALUE**		
Crystallization point	≥ 69	°C	based on ISO 7060
Moisture	≤ 0.04	wt–%	KF titration
(use in anionic polymerization)	≤ 0.01	wt–%	KF titration
Volatile bases	≤ 0.5	meq/kg	based on ISO 8661
Permanganate number	≥ 10,000	s	Spectrophotom. (3% solution)
Color of 50 wt–% aqueous solution	≤ 5	APHA	based on ISO 8112
Content of free bases	≤ 0.1	meq/kg	Titration
Content of free acids	≤ 0.05	meq/kg	Titration
Absorbance at 290 nm	≤ 0.05		based on ISO 7059
Cyclohexanone oxime content	≤ 5	mg/kg	GC
Iron content	≤ 0.5	mg/kg	Spectrophotom.
Ash	≤ 10	mg/kg	TGA

PACKAGING	VALUE	
Bag (solid product)	25	kg
Pallet (40 bags)	1000	kg
Dimensions	1,000 x 1,130 x 1,000	mm^3
Pallet (50 bags)	1250	kg
Dimensions	1,400 x 1,130 x 1,380	mm^3
Tank (liquid product)	25 to 31	t