

Caprolactam Solid

This document provides a brief description of Caprolactam Solid, its uses, and the potential hazards associated with short and long term exposure. Environmental impact information for accidental releases is included. This information is general in nature and is not intended as a replacement for the safety data sheet (SDS), product label and other safe handling literature. For additional information consult the LANXESS Corporation safety data sheet.

Identification

Product Name:	Caprolactam Solid
Chemical Name:	ϵ -caprolactam
Synonym(s):	Aminocaproic lactam Epsilon-Caprolactam Hexahydro-2H-azepin-2-one, 2-Oxohexamethyleneimine
CAS Number:	105-60-2

Description

Overview:	Caprolactam Solid is a white solid at ambient temperatures. The product has a faint odor and is sold in flake form.						
Uses:	Caprolactam Solid is sold by LANXESS for use in the production of Polyamide 6 fibers and filaments. Applications include molded components, carpeting, packaging films, brushes and flews. The chemical compound is also used as an agent or intermediate in the production of engineering plastics.						
Properties:	<table><tr><td>Boiling Point:</td><td>270 to 271 °C (518 to 519.8°F)</td></tr><tr><td>Melting Point:</td><td>69.3°C (156.7°F)</td></tr><tr><td>Solubility in Water:</td><td>Soluble</td></tr></table>	Boiling Point:	270 to 271 °C (518 to 519.8°F)	Melting Point:	69.3°C (156.7°F)	Solubility in Water:	Soluble
Boiling Point:	270 to 271 °C (518 to 519.8°F)						
Melting Point:	69.3°C (156.7°F)						
Solubility in Water:	Soluble						

Potential Human Health Effects

Occupational Exposure

Potential for occupational exposure exists during manufacture, at unloading, storage and staging areas and during sampling, maintenance and processing operations at facilities using Caprolactam Solid in the manufacture of other products. A much lower potential for exposure exists in facilities using the product in closed manufacturing processes by trained personnel.

Employee Training

Workers handling Caprolactam Solid should be trained to implement proper handling procedures and to understand the potential health and physical hazards of this product. Workplace or biological monitoring may be required to determine the effectiveness of ventilation and other control measures and/or the need for use of respiratory protective equipment. A NIOSH-approved powered air-purifying particulate respirator with P-100 filters should be used when airborne concentrations are unknown or exceed established standards/guidelines. In addition, LANXESS recommends polyvinyl chloride (PVC) gloves, safety glasses with side shields, long pants, a long-sleeved shirt and suitable protective footwear be worn when handling Caprolactam Solid.

Consumer Exposure

LANXESS Corporation does not sell Caprolactam Solid to the general public.

Short-Term Health Effects

Caprolactam Solid is irritating to skin and eyes. Symptoms of dermal exposure may include redness, itching and swelling. Eye contact may cause redness, tearing, stinging and swelling. Ingestion may cause irritation to the mouth, throat and stomach. Symptoms of ingestion may include abdominal pain, nausea, vomiting and diarrhea. Inhalation may cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose. Prolonged or repeated exposure may cause symptoms of anxiety, insomnia, increased heartbeat, hyperventilation, irritability, depression, nervousness and restlessness.

Long-Term Health Effects

No long-term adverse health effects are expected.

Physical Hazards

Caprolactam Solid is stable under normal conditions of use. Avoid contact with strong oxidizing agents. Heating to decomposition may release carbon monoxide, carbon dioxide and nitrogen oxides. Avoid heat, open flames and other potential sources of ignition.

Potential Environmental Impact

Caprolactam Solid is readily biodegradable. An accidental release to water may pose a danger to fish (low toxicity), invertebrates (low toxicity) and other aquatic organisms (low toxicity) prior to degradation. Caprolactam Solid has a low potential for bioaccumulation.

Conclusion

Under normal conditions of anticipated use as described in this Product Safety Assessment, and if the recommended safe use and handling procedures are followed, Caprolactam Solid is not expected to pose a significant risk to human health or the environment.

References

International Chemical Safety Card, International Programme on Chemical Safety (IPCS)

MedlinePlus Medical Encyclopedia, U.S. National Library of Medicine and the National Institutes of Health

NIOSH Pocket Guide to Chemical Hazards, Caprolactam, National Institute for Occupational Safety and Health (NIOSH)

Safety Data Sheet (SDS), Caprolactam Solid, LANXESS Corporation

ToxNet Hazardous Substance Data Bank, U.S. National Library of Medicine National Institutes of Health and the U.S. Department of Health and Human Services

Contact Information

LANXESS Corporation, Product Safety & Regulatory Affairs, 111 RIDC Park West Drive, Pittsburgh, PA 15275-1112, USA, Phone 1-800-526-9377 [1-800-LANXESS]

Notices

Use and Application Information

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent.