

Common Name: **CAPROLACTAM**

Synonyms: 1,6-Hexolactam; 2-Oxohexamethyleneimine

CAS No: 105-60-2

 Molecular Formula: C<sub>6</sub>H<sub>11</sub>NO

RTK Substance No: 0337

Description: White flake or crystalline solid with an unpleasant odor, or when molten a colorless or milky-white liquid

## HAZARD DATA

Hazard Rating	Firefighting	Reactivity
<b>2 - Health</b> <b>1 - Fire</b> <b>0 - Reactivity</b> DOT#: NA 3082 ERG Guide #: 171 Hazard Class: 9 (Miscellaneous Hazardous Material)	<b>Caprolactam</b> may burn, but does not readily ignite. Use dry chemical, CO <sub>2</sub> , water spray or foam as extinguishing agents. POISONOUS GASES ARE PRODUCED IN FIRE, including <i>Nitrogen Oxides</i> and <i>Ammonia</i> . Use water spray to keep fire-exposed containers cool.	<b>Caprolactam</b> may react violently with a mixture of ACETIC ACID and DINITROEN TRIOXIDE. <b>Caprolactam</b> is not compatible with OXIDIZING AGENTS (such as PERCHLORATES, PEROXIDES, PERMANGANATES, CHLORATES, NITRATES, CHLORINE, BROMINE and FLUORINE); STRONG BASES (such as SODIUM HYDROXIDE and POTASSIUM HYDROXIDE); CHLORINATED HYDROCARBONS (such as METHYLENE CHLORIDE and TRICHLOROETHYLENE); and ALKALI METALS (such as LITHIUM, SODIUM and POTASSIUM).

## SPILL/LEAKS

**Isolation Distance:**

Spill: 25 meters (75 feet)

Fire: 800 meters (1/2 mile)

 Absorb *molten Caprolactam* with fly ash, cement powder or commercial sorbent and place into sealed containers for disposal.

 Moisten spilled *solid* material first or use a HEPA-filter vacuum for clean-up and place into sealed containers for disposal.

DO NOT wash into sewer.

**Caprolactam** may be hazardous to the environment, especially to aquatic organisms.

## PHYSICAL PROPERTIES

<b>Odor Threshold:</b>	0.064 ppm
<b>Flash Point:</b>	257°F (125°C)
<b>LEL:</b>	1.4%
<b>UEL:</b>	8%
<b>Auto Ignition Temp:</b>	707°F (375°C)
<b>Vapor Density:</b>	3.9 (air = 1)
<b>Vapor Pressure:</b>	0.001 mm Hg at 68°F (20°C)
<b>Specific Gravity:</b>	1.02 (water = 1)
<b>Water Solubility:</b>	Highly soluble and hygroscopic
<b>Boiling Point:</b>	513°F (267°C)
<b>Melting Point:</b>	156°F (69°C)
<b>Critical Temperature:</b>	944.4°F (507°C)
<b>Molecular Weight:</b>	113.16

## EXPOSURE LIMITS

**NIOSH:** 1 mg/m<sup>3</sup> (*solid*), 10-hr TWA; 3 mg/m<sup>3</sup> STEL

**NIOSH:** 0.22 ppm (*vapor*), 10-hr TWA; 0.66 ppm STEL

**ACGIH:** 5 mg/m<sup>3</sup>, 8-hr TWA

The Protective Action Criteria values are:

 PAC-1 = 3 mg/m<sup>3</sup> PAC-2 = 20 mg/m<sup>3</sup>

 PAC-3 = 20 mg/m<sup>3</sup>

## PROTECTIVE EQUIPMENT

<b>Gloves:</b>	Neoprene
<b>Coveralls:</b>	Tyvek® >1 mg/m <sup>3</sup> <i>solid</i> or >0.22 ppm <i>vapor</i> - full facepiece APR with <i>Organic vapor</i> cartridges and <i>N95</i> prefilters
<b>Respirator:</b>	>3 mg/m <sup>3</sup> <i>solid</i> or >0.66 ppm <i>vapor</i> - SCBA

## HEALTH EFFECTS

<b>Eyes:</b>	Irritation and burns
<b>Skin:</b>	Irritation and burns
<b>Inhalation:</b>	Nose, throat and lungs irritation with coughing, wheezing and shortness of breath Headache and convulsions (seizures)

## FIRST AID AND DECONTAMINATION

<b>Remove</b>	the person from exposure.
<b>Flush</b>	eyes with large amounts of water for at least 15 minutes. Remove contact lenses if worn.
<b>Quickly</b>	remove contaminated clothing and wash contaminated skin with large amounts of water.
<b>Begin</b>	artificial respiration if breathing has stopped and CPR if necessary.
<b>Transfer</b>	promptly to a medical facility.