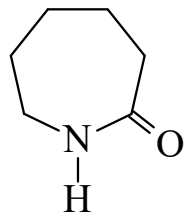
>>**Entry Name: Hexahydro-2*H*-azepin-2-one,** 9CI

Synonym(s): ε-Caprolactam. Hexanolactam. 6-Aminohexanoic acid lactam. 6-Aminocaproic acid lactam



CAS Registry Number: 105-60-2
Related CAS Registry Numbers(s): 2123-24-2

Molecular Formula: $C_6H_{11}NO$
Molecular Weight: 113.159
Accurate Mass: 113.084064
Percentage Composition: C 63.69%; H 9.80%; N 12.38%; O 14.14%
Use/Importance: Used in manuf. of nylon-type polymers, esp. nylon-6. Cross-linking agent for polyurethanes. Important industrial chemical, 47th in order of volume for USA in 1994 (production 0.84 million tons/year)
Physical Description: Leaflets (petrol)
Melting Point: Mp 68-70°
Boiling Point: Bp 267°. Bp_{12} 139°
Solubility: Sol. H_2O, org. solvs.
Other Data: Ceiling temp. for polym., T_c 220°
Hazard & Toxicity: Eye, skin and respiratory tract irritant. LD_{50} (rat, orl) 1210 mg/kg. LC_{50} (rat, ihl) 300 mg m^{-3} (2h exposure). OES: long-term 1 mg m^{-3}; short-term 3 mg m^{-3} (dust); long-term 5 ppm; short-term 10 ppm (vapour)

Aldrich: C220-4
Fluka: 21500
Rare Chemicals Library: S44882-6
Sigma: C3907

>>**Derivative:** Na salt

CAS Registry Number: 2123-24-2
Use/Importance: Initiator for polym. of caprolactam
Physical Description: Powder

>>**Derivative:** *N*-Ac

CAS Registry Number: 1888-91-1
Molecular Formula: $C_8H_{13}NO_2$
Molecular Weight: 155.196
Accurate Mass: 155.094629
Percentage Composition: C 61.91%; H 8.44%; N 9.03%; O 20.62%
Boiling Point: Bp_{26} 134-135°
Refractive Index: n_D^{20} 1.4890

Aldrich: 28301-0
Fluka: 981

>>**Derivative:** *N*-Benzoyl

CAS Registry Number: 6248-28-8
Molecular Formula: $C_{13}H_{15}NO_2$
Molecular Weight: 217.267
Accurate Mass: 217.110279
Percentage Composition: C 71.87%; H 6.96%; N 6.45%; O 14.73%
Use/Importance: Polymerisation catalyst, has laundry/bleaching applications
Physical Description: Plates (Me_2CO)
Melting Point: Mp 69-71°
Solubility: Sol. H_2O (1.48g/l H_2O, 25°).