

## DESCRIPTION

**PIR-Caprolactam** from AdvanSix is an independently certified & mass-balance allocated 100% post-industrial recycled (PIR) raw material<sup>1</sup> providing the same processability, properties and functionalities as its standard, non-recycled counterpart. PIR-Caprolactam is used in a variety of polymerization, melt extrusion, and other chemical applications worldwide. As one of the largest and most experienced suppliers of merchant-grade caprolactam, AdvanSix offers industry-leading quality, consistency, and reliability of supply.

## PHYSICAL AND CHEMICAL PROPERTIES

TYPICAL PROPERTIES	SPECIFICATIONS
CAS Number	105-60-2
Chemical Formula	$\text{CH}_2-(\text{CH}_2)_4-(\text{CO})-\text{NH}$
Other/Generic Names	Hexahydro-2H-azepin-2-one; 2-oxohexamethylenimine
Appearance	Solid: white flakes; Molten: colorless liquid.
Physical State	Solid at ambient temperature
Molecular Weight	113.16
Odor	Mildly disagreeable
Specific Gravity	1.02 @ 77°C (170.6°F); (H <sub>2</sub> O = 1.0)
Water Solubility (miscibility), Weight % (Wt. %)	-525g /100g H <sub>2</sub> O @ 25°C (77°F)
Boiling Point	270°C (518°F)
Melting Point	69°C (156°F)
Vapor Pressure	<0.001 mmHg @ 20°C (68°F)
Vapor Density	3.91 (Air = 1.0)
Evaporation Rate	<1 (compared to butyl acetate)
% Volatiles	100
Flash Point	142°C (288°F), Open cup
Storage	Store in moisture-tight containers in a cool, dry area. Store molten material at 70-80°C (158-176°F) under nitrogen cushion containing less than 5 ppm oxygen

<sup>1</sup> Using an industry-accepted mass balance method, AdvanSix allocates recycled material into 100% PIR caprolactam grade. PIR grades are certified by an independent third-party organization (SCS Global Services) for recycled content, with annual audits.

## PRODUCT SPECIFICATIONS

ASSAY	SPECIFICATIONS	TEST METHOD
Water, Wt. %	0.10 max.	QALAC-0005
Free Alkalinity, meg/kg	0.05 max.	QALAC-0006
Free Acidity, meg/kg	0.05 max.	QALAC-0006
Color, APHA, 50% solution at 390 nm	5 max.	QALAC-0001
Permanganate Index (ISO)	5 max.	QALAC-0002
Permanganate Number, seconds	20,000 min.	QALAC-0009
Volatile Base (as ammonia), ppm	10 max.	QALAC-0012
Volatile Base (as ammonia), meg/kg	0.59	QALAC-0012
Ash, ppm	10 max.	QALAC-0007
Iron (as Fe), ppm	0.5 max.	QALAC-0011
Transmittance @ 290 nm, %	90 min.	QALAC-0033



100% MASS BALANCED  
RECYCLED CONTENT  
PRE-CONSUMER

### NOTE

*The values presented in this data sheet are typical values and are not to be interpreted as product specifications.*

### CONTACT ADVANSIX

Contact AdvanSix to learn more about the benefits of our Nylon Solutions.

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**ADVANSIX**  
Good chemistry.