

## ATI Allegheny Ludlum AL 36™ Electrical Alloy (Cryogenic and Bimetal) UNS K93600 or UNS K93603

Category : Metal , Electronic/Magnetic Alloy , Ferrous Metal

### Material Notes:

AL 36 alloy is a nickel-iron alloy combining low thermal expansion properties up to about 200°C along with moderately high strength and good toughness down to -235°C, the temperature of liquid hydrogen. These properties combined with good weldability and desirable physical properties make this alloy attractive for many applications requiring precise dimensional stability. In applications such as LNG tankers and in transportation and storage vessels for liquefied gas, AL 36 alloy is at an advantage due to the minimization of any strains in the material resulting from thermal contraction. The composition of AL 36 alloy for cryogenic application is adjusted to achieve very low thermal expansion coefficient at low temperature. This alloy is also used extensively in the manufacture of bimetallic components for electrical and electronic industries. It is the low expansion material used in the cladding of high expansion alloys, such as AL 22-

3. Information provided by Allegheny Ludlum

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_ATI-Allegheny-Ludlum-AL-36-Electrical-Alloy-Cryogenic-and-Bimetal-UNS-K93600-or-UNS-K93603.php](http://www.lookpolymers.com/polymer_ATI-Allegheny-Ludlum-AL-36-Electrical-Alloy-Cryogenic-and-Bimetal-UNS-K93600-or-UNS-K93603.php)

Physical Properties	Metric	English	Comments
Density	8.05 g/cc	0.291 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	75	75	Typical Annealed
Tensile Strength, Ultimate	462 MPa	67000 psi	Typical Annealed
Tensile Strength, Yield	261 MPa @Strain 0.200 %	37900 psi @Strain 0.200 %	Typical; Annealed
Elongation at Break	32 %	32 %	typical in 2"; Annealed

Thermal Properties	Metric	English	Comments
CTE, linear	0.500 - 1.10 µm/m-°C	0.278 - 0.611 µin/in-°F	
	@Temperature 25.0 - 93.0 °C	@Temperature 77.0 - 199 °F	
	2.00 - 2.70 µm/m-°C	1.11 - 1.50 µin/in-°F	
	@Temperature 25.0 - 260 °C	@Temperature 77.0 - 500 °F	

Component Elements Properties	Metric	English	Comments
Aluminum, Al	<= 0.030 %	<= 0.030 %	

Carbon, C Component Elements Properties	0.0080 % Metric	0.0080 % English	Comments
Cobalt, Co	<= 0.35 %	<= 0.35 %	
Iron, Fe	63 %	63 %	
Manganese, Mn	0.30 %	0.30 %	
Molybdenum, Mo	<= 0.020 %	<= 0.020 %	
Nickel, Ni	36 %	36 %	
Silicon, Si	0.15 %	0.15 %	
Sulfur, S	0.0010 %	0.0010 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000810 ohm-cm	0.0000810 ohm-cm	

## Contact Songhan Plastic Technology Co.,Ltd.

Website : [www.lookpolymers.com](http://www.lookpolymers.com)

Email : [sales@lookpolymers.com](mailto:sales@lookpolymers.com)

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

Address : United North Road 215,Fengxian District, Shanghai City,China