

Properties of Paliney® 6

Paliney® 6 is an age-hardenable palladium silver-based alloy ideally suited for demanding low current sliding electrical contact applications requiring high-wear resistance. This alloy, with over 50 years of reliable service, combines the mechanical features of Beryllium Copper and the stable contact resistance of high noble metals. Because of its noble metal content, Paliney® 6 offers long wear, tarnish resistance and stable contact resistance. This alloy is used in a wide variety of applications, including such products as throttle position, pedal position, electronic engine control sensors, guidance systems, potentiometers, trimmers, communications and bar code reader. Paliney® 6 meets ASTM Standard Specification B563 for electrical contact alloys.

Properties of Paliney® 6	Annealed	Stress-Relieved	Heat-Treated* (Aged-Hardened)
Resistivity, normal, ohm-cmf	185	180	155
Microhm cm	30.7	29.9	25.8
Conductivity, % IACS, nominal	5.6	5.7	6.7
Density, grams/cc, nominal	10.8	10.8	10.8
Dwt./cu. in., nominal	114	114	114
Solidus F, nominal	1890	1890	1890
Solidus C, nominal	1032	1032	1032
Coefficient of Linear Expansion			
/°F(70 - 212° F) nominal	7.5x10 ⁻⁶	7.5x10 ⁻⁶	7.5x10 ⁻⁶
/°C(20 - 100° C) nominal	13.5x10 ⁻⁶	13.5x10 ⁻⁶	13.5x10 ⁻⁶
Thermal emf vs. Platinum (0 - 100C), uv/C, nominal	-18	-	-23
Fatigue strength (rotating bending) at 10(8) cycles, psi	-	-	45,000
Megapascals	-	-	310
Modulus of Elasticity, psi nominal	16x10(6)	16x10(6)	16x10(6)
Megapascals	110x10(3)	110x10(3)	110x10(3)
Proportional Limit, psi, nominal	55,000	90,000	110,000
Megapascals	380	620	760
Ultimate Tensile Strength, psi			
Wire .003-.020 dia., Rolled Shapes	100,000-120,000	135,000-165,000	160,000-210,000
Wire .021-.060 dia., Rolled Shapes	100,000-120,000		160,000-210,000
Strip .003-.015 dia., Rolled Shapes	100,000-120,000	140,000-170,000	150,000-195,000
Elongation, % in 2"			
Wire .003 - .020 dia.	20 min.	8 min.	1 - 10
Wire .021 - .060 dia.	15 min.		1 - 10
Strip .003 - .015 dia.	15 min.	8 min.	1 - 13
Properties of Paliney 6	Annealed	Stress-Relieved	Heat-Treated* (Aged-Hardened)
Knoop Hardness (100-gram load - 50-gram under .005 thick)			
.003 - .020 Rolled Shapes	170 - 250	260 - 330	320 - 380
Strip .003 - .015 thick	170 - 250	260 - 330	320 - 380
Vickers Hardness (100-gram load)			
Wire .003 - .020 dia.	170 - 250	240 - 330	290 - 370
Strip .003 - .015 thick	170 - 240	250 - 320	290 - 370

*Forming or bending is not recommended for this "temper" of alloy.

The information contained in this Data Sheet is intended to assist you in the use of this product. It is not intended to and does not create any warranties, express or implied, including any warranty of merchantability or fitness for a particular application. The user should determine the suitability of this material for each application. Data is subject to change without notice.

For More Information

[Contact Us to discuss your application with one of our Materials Specialists.](#)