

CMW® ELKONIUM 32 platinum based alloy

Category : Metal , Nonferrous Metal , Precious Metal , Platinum Alloy

Material Notes:

Platinum has complete freedom from atmospheric corrosion and is preferred for devices that have low closed forces and where surety of making a circuit may be a problem. It has a high melting point (1769(C) and good resistance to forming arcs. Low electrical conductivity (15% IACS) limits its application to low currents, usually below 5 amperes. Because of the high cost of the platinum ELKONIUM alloys, they are almost always supplied as composite contacts with thin facings of the ELKONIUM metal (silver brazed to nickel plated steel backings in the form of rivets, screws and weld buttons).ELKONIUM® 32 and ELKONIUM® 301 alloys are made up of platinum-iridium materials. Iridium hardens platinum without affecting its tarnish resistance. ELKONIUM 32 alloy contains sufficient iridium to harden the metal to the degree that it resists mechanical deformation and wear in applications that have high closed forces and high impact. Aircraft magnetos and telegraph keys are typical applications, which use the hardness qualities of this alloy. ELKONIUM 301 alloy contains less iridium and is softer and more ductile. It retains the excellent tarnish resistance of platinum and performs reliably in sensitive instruments and low force devices.Information provided by CMW Inc.

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http://www.lookpolymers.com/polymer_CMW-ELKONIUM-32-platinum-based-alloy.php

Physical Properties	Metric	English	Comments
Density	21.6 g/cc	0.780 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell 15T	93	93	annealed
	97	97	cold worked
Tensile Strength, Ultimate	689 MPa	100000 psi	annealed
	1000 MPa	145000 psi	cold worked
Elongation at Break	4.0 %	4.0 %	cold worked
	12 %	12 %	annealed

Component Elements Properties	Metric	English	Comments
Iridium, Ir	20 %	20 %	
Platinum, Pt	80 %	80 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000344 ohm-cm	0.0000344 ohm-cm	5 % IACS

Contact Songhan Plastic Technology Co.,Ltd.

Website : www.lookpolymers.com

Email : sales@lookpolymers.com

Tel : +86 021-51131842

Mobile : +86 13061808058

Skype : lookpolymers

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