

Microplasmic Anodizing [Ceramic Coating] for Aluminum, Magnesium, Titanium, Zirconium & Composites

Category : Ceramic , Other Engineering Material , Ceramic/Metallic Coating

Material Notes:

Microplasmic Process is for all types of aluminum, magnesium, titanium and zirconium alloys and composite materials. It is an electrochemical micro arc oxidation process for which a U.S. patent is issued on March 6, 2001. A specimen is submerged in the electrolytic solution. A controlled high power AC current is applied to the specimen. The specimen glows bright due to the micro-arc created by the surrounding plasma which creates the oxidation of the surface of the specimen. As the thickness of the coating increases, it moves inside the substrate. Practically, there is no change in the dimension of the specimen. Therefore, a completely finished part can be coated without any finishing afterward. The Microplasmic Process is also suited for a hard coating inside surface of a part i.e. a cylindrical, conical or spherical hollow parts. The Microplasmic process produces an outer soft coating of about 15 % that may be buffed off; and a remaining inner layer of extremely hard ceramic material. It creates a thick ceramic coating which exhibits excellent resistance to wear, heat and chemical corrosion. Typical thickness 0-150+ microns. Corrosion resistant > 2000 hrs salt spray and >500 hrs in 98% sulfuric acid. Information provided by Microplasmic Corporation.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Microplasmic-Anodizing-Ceramic-Coating-for-Aluminum-Magnesium-Titanium-Zirconium-Composites.php

Physical Properties	Metric	English	Comments
Density	3.80 g/cc	0.137 lb/in ³	

Mechanical Properties	Metric	English	Comments
Hardness, Vickers	>= 1400	>= 1400	
Modulus of Elasticity	277 GPa	40200 ksi	Young's Modulus
Poissons Ratio	0.21	0.21	
Adhesive Bond Strength	>= 7.00 MPa	>= 1020 psi	

Thermal Properties	Metric	English	Comments
Thermal Conductivity	200 W/m-K	1390 BTU-in/hr-ft ² - °F	
Maximum Service Temperature, Air	1650 °C	3000 °F	with cooling

Electrical Properties	Metric	English	Comments
Electrical Resistivity	>= 5.00e+10 ohm-cm	>= 5.00e+10 ohm-cm	
Dielectric Breakdown	800 V	800 V	Break Through Voltage

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