

OX UHA Magnesium PEO

OX-UHA is an innovative PEO (Plasma Electrolytic Oxidation) anodizing treatment for magnesium alloys which permits obtaining extraordinary characteristics of protection from corrosion and wear.



EXCELLENT WEAR RESISTANCE

Unlike traditional anodizing treatments, the OX-UHA process uses high currents which create a plasma on the piece surface. The micro-melting is thus obtained of the oxide layer which mineralizes and compacts, thereby increasing hardness and wear resistance.

ENVIRONMENT FRIENDLY, Cr6+

The process does not require the use of toxic chemical substances nor hexavalent chrome and therefore has a very low impact on the environment and human health.

EXCELLENT CORROSION RESISTANCE

The compact layer of ceramic oxides protects the magnesium from corrosion in many aggressive environments, providing increased protection compared to traditional magnesium anodizing or chrome treatments.

PAINTABLE

Thanks to the surface morphology, it ensures excellent adherence and can be subsequently painted. The combination of OX-UHA and painting permits obtaining very high corrosion resistance.

TECHNICAL SPECIFICATIONS

COMPOSITION				
Mg	O	Al	P	Impurities
35÷45%	40÷50%	5÷15%	3÷7%	Depending on the alloy
The OX-UHA treatment transforms the base magnesium into a compact layer of magnesium and aluminium oxides.				

ANODIZABLE ALLOYS
All commonly used magnesium alloys

APPLICABLE STANDARDS
ROHS CONFORMITY
✓ RoHS conform. No restricted-use substances beyond maximum tolerated concentrations
REACH CONFORMITY
✓ REACH conform. No SVHC in quantities greater than 0.1% by weight.

COATING THICKNESS


STANDARD THICKNESS	TOLERANCE
10 µm	± 5 µm
Thickness varies according to part geometries.	
Thickness is reduced in holes and internal areas.	

AESTHETIC APPEARANCE

Matt white colour. Surface roughness increases by about Ra 0.8-1.0.

HARDNESS

The surface hardness of the OX-UHA varies according to the type of treated alloy.


HARDNESS VALUE	ALLOY
 500±100 HV	AZ61

WEAR RESISTANCE

Thanks to the extra hardness of the layer, the OX-UHA treatment provides high wear resistance, superior to any other magnesium alloy treatment.

CORROSION RESISTANCE

The compact layer of oxides of the OX-UHA treatment permits obtaining high corrosion resistance, superior to that provided by chrome coated magnesium alloys or by standard anodizing processes.

APPROXIMATE CORROSION RESISTANCE VALUE	ALLOY
 ≥240 hours	AZ61

NSS ACCORDING TO ISO 9227 – THICKNESS 10 µm – CORRODED SURFACE < 5%

CHEMICAL RESISTANCE

Approximate values of compatibility with the coating environment.
The actual resistance to the environment must in any case be tested in the field.

✓ Hydrocarbons (e.g. petrol, diesel fuel, mineral oil, toluene)
✓ Alcohols, ketones (e.g. ethanol, methanol, acetone)
✓ Neutral saline solutions (e.g. sodium chloride, magnesium chloride, brine)
✗ Diluted reducing acids (e.g. citric acid, oxalic acid)
✗ Oxidizing acids (e.g. nitric acid)
✗ Concentrated acids (e.g. sulphuric acid, hydrochloric acid)
✗ Diluted bases (e.g. diluted sodium hydroxide)
✗ Oxidizing bases (e.g. sodium hypochlorite)
✗ Concentrated bases (e.g. concentrated sodium hydroxide)

Approximate values of compatibility with the coating environment only, they do not indicate corrosion protection of the base material. The overall performance of the coated piece depends to a large extent also on the type and quality of the base material. The actual resistance to the environment must in any case be tested in the field.

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