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NIPLATE® eXtreme
Electroless Nickel

Niplate eXtreme is a chemical nickel coating specifically developed to increase resistance to corrosion, particularly on aluminum alloys.
It is applied both to alloys with high mechanical properties such as the 7000 and 2000 families used in aeronautics and racing (F1 and MotoGP), and to cast and die-cast aluminum alloys with high silicon content.

EXCELLENT CORROSION RESISTANCE

Absence of porosity, excellent adhesion and high chemical resistance give Niplate eXtreme the best resistance to corrosion, especially on aluminum alloys.
It allows to reach 720 hours of neutral salt spray (NSS) without corrosion.

HIGH HARDNESS

The coating has a high hardness that allows to resist to wear and scratches, keeping unchanged the aesthetic aspect and the resistance to corrosion.

METALLIC COATING

Unlike anodizing, the coating consists of a metallic layer that is similar in color to stainless steel.
It maintains its color and luster over time thanks to its high chemical resistance.

TECHNICAL SPECIFICATIONS

COMPOSITION
Ni 87 ÷ 92 %
P 8 ÷ 13 %
Ni-P alloy, high phosphorus electroless nickel plating

APPLICABLE STANDARDS
PRODUCT TECHNICAL STANDARDS
ISO 4527 | NiP
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.

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COATABLE METALS

IRON ALLOYS	PRE-TREATMENT	ADHESION	CORROSION RESISTANCE
Carbon steel	-	★★★★★	★★★★☆
Stainless steel	Sandblasting	★★★★☆	★★★★★
Case-hardened steel	Sandblasting	★★★★☆	★★★☆☆
Nitrided steel	Sandblasting	★★★☆☆	★★★☆☆
COPPER ALLOYS			
Brass, Bronze, Copper	-	★★★★★	★★★★★
ALUMINIUM ALLOYS			
Wrought alloys	-	★★★★★	★★★★★
Foundry and die-casting alloys	-	★★★★☆	★★★★☆
TITANIUM ALLOYS			
Pure titanium and alloys	Sandblasting	★★★★☆	★★★★★

COATING THICKNESS

TIPICAL THICKNESS
15 - 20 µm
Uniform thickness over entire external and internal surface
Absence of point effect typical of galvanic coatings

AESTHETIC APPEARANCE

Bright stainless metal appearance based on the morphology of the machined piece
Matt finish option (sandblasted, shot peened or shotblasted)

HARDNESS

HARDNESS VALUE	HEAT TREATMENT
550±50 HV	Dehydrogenation 160-180°C x 4 hrs

WEAR RESISTANCE

For applications where the part is subject to heavy wear, it is recommended to use Niplate 600 instead of Niplate eXtreme. Niplate eXtreme still has good wear resistance.

APPROXIMATE WEAR VALUE, TWI-CS10	HEAT TREATMENT
20±2 mg / 1000 cycles	Dehydrogenation 160-180°C x 4 hrs

A LOW NUMBER INDICATES A BETTER PERFORMANCE – ASTM B733 X1 – TABER ABRASER WEAR TEST – ABRASIVE WHEELS CS 10 – LOAD 1 KG

FRICTION COEFFICIENT

DYNAMIC DRY FRICTION COEFFICIENT VALUE
0.4 ÷ 0.6 depending on antagonist material

CORROSION RESISTANCE

The corrosion protection of NIPLATE eXtreme on aluminum alloys, as evaluated by salt spray testing, has been shown to be improved over all other electroless nickel coatings.

APPROXIMATE CORROSION RESISTANCE VALUES	BASE MATERIAL
≥1000 hours	Brass
≥240 hours	Carbon steel
≥500 hours	Aluminium 6082

NSS ACCORDING TO ISO 9227 – THICKNESS 20 µm – CORRODED SURFACE < 5%

CHEMICAL RESISTANCE

Excellent chemical resistance and to oxidization in many aggressive salt environments.
Passes the concentrated nitric acid immersion test (RCA, Nitric acid test – Concentrated nitric acid 42Bé, 30 seconds, room temperature).

✓	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.

WELDABILITY

✓ Easily braze weldable using RMA, RA acid flow agents

MELTING POINT, SOLIDUS

870°C

DENSITY

8 g/cm³

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