

Product Data Sheet



Diamonite™ The Hard Chrome Replacement

For Outstanding Hardness *and* Increased Lubricity

Description: *Diamonite*™ is a proprietary aqueous autocatalytic plating system that produces a very hard wear resistant surface with a low coefficient of friction. Diamonite is ideal for depositing a very smooth and uniform plating barrier on inside diameters and on complex configurations of parts. The plating is heat treated after application to increase the hardness to over 1000 Vickers microhardness.

Diamonite plating outwears hard chrome and nickel plating and in some instances can out perform tungsten carbide because of its hardness and low coefficient of friction. Diamonite can be used in numerous areas to reduce wear and improve performance, including all types of bearing applications, automotive, aerospace, manufacturing, textile equipment, and military applications.



Plating Thickness: .0001 to .003

Properties:

- Excellent adhesion on most alloys including titanium
- Ductile at high hardness levels
- Outwears hard chrome 1.5 -3 times
- Outwears electroless nickel phosphorous 6-10 times
- Re-workable and solderable with no effect to most alloys
- Good impact resistance
- Non-fatiguing on high strength alloys
- Reduction in fretting and galling
- Non-embrittling
- Cost competitive with hard chrome

Hardness:	As plated	58 to 64 Rc	690 to 825 HK	650 to 800 HV
	Heat treated	68-72+ Rc	920 to 1000+ HK	940 to 1200+ HV

Dry Static Coefficient of Friction:	Hard Steel	.78	Tool Steel w/ Diamonite	.44
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Effective Operating Temperature Range: -66 to 1000° F

Melting Temperature: 2100-2500° F

Hydrogen Embrittlement: None per ASTM 519

Density: .28 lb./cubic inch

Wear Resistance: Sample evaluated by ASTM D2714 (coated block, hardened steel ring) using 600 lb. load with mineral oil lubrication:

Sample	25,000 cycles	100,000 cycles	1,000,000 cycles
Uncoated Steel Block	300		Fail
Nickel-Phosphorous Alloy Coated	50	Fail	Fail
Hard Chromium Coated	35	45	90
Diamonite	5	10	30

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