

Masters Surface Treatment Coatings

M.S.T.C.

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PVD, TD, Chrome, Nitride, Black Oxide & Anodizing Coatings

	Black Oxide	Hard Anodizing	Zinc Phosphate	Chrome/Nitride	Electroless Nickel	TiN	TiCN	Cromaxx	Duplex Matrix	Supra	Omega	LTD	TRD
Coating Designation	Black	Yellow, red, black	Zinc Plating	Hard Chrome	Silver/Light Grey	Titanium Nitride	Titanium Carbo-Nitride	Chromium Nitride Carbo-Nitride	Titanium Aluminum Carbo-Nitride	Aluminum Titanium Carbo-Nitride	Aluminum Titanium Nitride (w/additions)	Aluminum Chromium Titanium Nitride	Vanadium Carbide
Microhardness (Vickers)	Mil-DTL-13924	Type 1: Chrome Acid Type 2: Sulfuric Acid Type 3: Mil-A-8625		1000HV 70-72 HRC	1000HV	2300±300	3500±500	3200HV	3500±500	4000HV	3600HV	3300±300	3300
Friction Coefficient			0.5	Low Friction	0.4 401-450 HK .01-.02 coefficient	0.6	0.2	0.3	0.2	0.25	0.4	0.5	0.29
Coating Thickness	.0003-.0005	2-2.5 Mil	.0001-.001	.012-.035	04 micron thick	2-4	2-4	4-8	4-6	5-8	4-8	2-4	4-6 micron
Thermal	290 F Hot Black Oxide	36 F	600 C 1100 F	130 F	680 F for 1 hr	500 C 900 F	400 C 750 F	600 F	800 C 1470 F	850F	900F	950 C 1740 F	1875 F
Color	Black	Black, Red , Green, Clear (Gray), Gold	Yellow (Gold), Clear, Black	Silver	Silver	gold	blue gray (anthracite)	Silver-gray	Rose	Old rose	Anthracite, Silver-Gray	dark gray	dark gray
Key Characteristics	Stainless Copper Zinc Must use wax for minimum corrosion	Benefits: Non contaminating Corrosion resistance salt spray test	Decorative color corrosion resistant	Reduce material costs, high hardness, high lubricity	Anti-stick Conductivity Lubricity Corrosion resistance	Standard all-purpose coating	High hardness Good wear	Reduces Build Up High Hardness & Adhesion Strength Reduces Lubrication on Alum Applications	low friction, high oxidation resistance	oxidation resistant, high hardness, increase performance over CVD & TD	Reduces Build Up, High Hardness & Adhesion strength, reduces lubrication on Alum Applications	high warm hardness, very high oxidation resistance, high protection against abrasive wear	High hardness, very good oxidation resistance, low friction
Primary Applications	* Powdered metals	* Mil-DLT-5541	*Steel	* Alum	*Magnetic Response	* Machining/cutting of Iron based materials	*Machining of difficult-to-machine alloy steels	*Alum Applications	* coating for a wide range of carbide cement and high speed steel tooling	*Stainless	*Alum applications	* coating for millin with carbide, cement and high speed steel tools	* Roll forming cutting deep draw welding extrusion
	* Minimal build up	*Alum Applications	*corrosion resistant	* Cast	* Bendability	* metal forming	* high performance cutting where moderate temperatures are generated at the cutting edge	*plastic molds	* machining of all types of steel under dry as well as wet machining conditions	*HSLA 980/590	*plastic molds	*machining order dry condition and high feeds	* Punching
	* Steel	* Electric Properties	*weld parts, fasteners, brackets	* Steel	* Uniformity	* plastic molding	* excellent for metal forming (stainless steel)	*cutting non-ferrous metals	* excellent for drilling in steel	*High Alloy Materials	*castings		* Stamping
	* Corrosion assistance	* Flame resistance	*prevent rust	* Low Alloy materials	* Electric properties			*hot forming	* drawing, stamping, punching, forming tools for processing of high and low alloy steel	*Cast	*deep draws		* Forming
	* All metals	* Increased wear and abrasion		* Large Cast dies	* Al Metals					*cutting	*Hot forming		

For further information and contact details, please check our website: www.masterssurfacetreatmentcoatings.com