



Production Plating, Inc.

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ANODIZE: HARD		MIL - A - 8 6 2 5	
Hardcoat produces a heavy, dense coating that provides greater wear resistance and corrosion protection than other anodic coatings. Color will vary from light tan to almost black depending on alloy and thickness. Abrasion resistance will vary with alloy and thickness of coating.	Type III	-	Coating penetrates the substrate as much as it builds up on the surface. The term "thickness" includes both the build up and penetration. *RoHS compliant coating depending upon seal
	Class 1 Class 2	non-dyed dyed	

Fasteners: aluminum; all others must be installed after finishing

ANODIZE: SULFURIC		MIL - A - 8 6 2 5	
Conventional Type II anodic coatings are intended to improve surface corrosion protection. Clear in appearance, a sulfuric acid anodized coating can be colored with a large variety of dyes and pigments.	Type II	-	Type III processes may be used to produce Type II coatings. *RoHS compliant coating depending upon seal
	Class 1 Class 2	non-dyed dyed	

Fasteners: aluminum; all others must be installed after finishing

CADMIUM		QQ - P - 4 1 6	
Plating is bright, silvery white. Corrosion resistance is very good, especially with Type II coatings. Supplementary treatments for Type II coatings can be yellow or olive drab.	Type I Type II	as plated chromated	*NOT RoHS compliant
	Class 1 Class 2 Class 3	.0005" .0003" .0002"	

Fasteners: carbon steel is recommended on all but aluminum; aluminum is recommended on aluminum; stainless steel must be activated prior to plating

CHEMFILM		MIL - DTL - 5 5 4 1	
Chemical conversion coatings can range in color from clear to dark brown. Chemical conversion coatings can be decorative and enhance corrosion resistance and also provide added paint and/or powder coat adhesion. This coating is usually applied by immersion, but can be applied manually on large parts or localized areas.	Class 1a Class 3		provides most corrosion protection thinner coating w/ less electrical resistance - customer must specify clear or yellow *RoHS compliant coatings available

Fasteners: all except steel; steel hardware must be installed after finish or without etch and deox resulting in a non-cosmetic coating

CHEM FINISH: BLACK		MIL - F - 4 9 5	
A uniform black, corrosion retardant for copper. Coating has no abrasion resistance.			*RoHS compliant

Fasteners: must be copper or copper plated; all others must be installed after coating

CLEAN & ETCH			
Cleaning and etching aluminum provides a surface suitable for spot welding and preparation for additional finishes.			*RoHS compliant

Fasteners: all except steel; steel hardware must be installed after finish

GOLD		MIL - G - 4 5 2 0 4	
Gold plating has good corrosion resistance and high tarnish resistance. It provides a low contact resistance, is a good conductor, and has excellent solderability.	Type I Type II Type III	99.70% 99.00% 99.90%	*RoHS compliant

Fasteners: carbon steel is recommended on all but aluminum; aluminum is recommended on aluminum; stainless steel must be activated prior to plating

NICKEL: ELECTROLESS		AMS 2 4 0 4	
Electroless nickel plates uniformly in recesses and cavities (does not build up on edges). Corrosion resistance is good for coatings over .001" thick.	Class 1 Class 2 Class 3 Class 4	as plated heat treated sp. alloys heat treatable	*RoHS compliant

Fasteners: carbon steel is recommended on carbon steel; aluminum is recommended on aluminum; stainless steel must be activated prior to plating

NICKEL: ELECTROPLATED		QQ - N - 2 9 0	
Decorative nickel is used to coat steel, stainless steel, brass, copper, aluminum, and zinc alloys. Corrosion protection is a function of thickness. This finish is typical for the high tech and electronics industries.	Class 1 Class 2		For corrosion protection For engineering applications *RoHS compliant
	Grade A Grade B Grade C Grade D Grade E Grade F Grade G	.0016" .0012" .0010" .0008" .0006" .0004" .0002"	

Fasteners: carbon steel is recommended on carbon steel; aluminum is recommended on aluminum; stainless steel must be activated prior to plating

PASSIVATE		ASTM - A 9 6 7	
Passivation removes foreign materials and deposits a transparent film of metal oxide that provides excellent corrosion resistance.	Nitric 1		medium temperature nitric w/ sodium dichromate additive low temperature nitric *RoHS compliant
	Nitric 2		

Fasteners: stainless steel; all others must be installed after finishing

PHOSPHATE: HEAVY		DOD - P - 1 6 2 3 2	
Manganese phosphate conversion coatings range from grey to black in color, provide moderate corrosion resistance, and prevent wear. Substrate typically needs to be media blasted prior to coating.	Type M	Manganese	
	Class 1 Class 2 Class 3	preserved oiled as coated	
Zinc phosphate conversion coatings have a grey crystalline appearance. It provides minimal (although greater than iron phosphate) corrosion protection and is a good base for organic coatings (powder coat).	Type Z	Zinc	
	Class 1 Class 2 Class 3	preserved preserved as coated	

Fasteners: carbon or stainless steel recommended; aluminum must be installed after finishing

PHOSPHATE: LIGHT		TT - C - 4 9 0	
Iron phosphate coatings provide minimal corrosion protection, but are good bases for organic coatings (powder coat) and range from light to dark grey in color.	Type II	Iron	Immersion or spray application available *RoHS compliant

Fasteners: carbon or stainless steel recommended; aluminum must be installed after finishing

POWDER COAT			
Powder coat is a process which applies charged powder onto a grounded part. Cured to its melting point it can form a variety of desired finish textures from smooth to textured, to wrinkled and hammertone finishes. Powder coat is an extremely durable finish that is environmentally friendly.			*RoHS compliant

Fasteners: all; hardware should be masked to prevent powder coat build up in threads

RHODIUM		MIL - R - 4 6 0 8 5	
Rhodium plating has excellent corrosion resistance, good abrasion resistance, is almost as hard as chromium, and is highly reflective.	Type I		over nickel, silver, gold, or platinum over other metals - requires nickel undercoat *RoHS compliant
	Type II		

Fasteners: carbon steel is recommended on all but aluminum; aluminum is recommended on aluminum; stainless steel must be activated prior to plating

SILVER		QQ - S - 3 6 5	
Silver plating has good corrosion resistance, excellent solderability, excellent lubricity, and is a good conductor, but tends to tarnish easily.	Type I	Matte	*RoHS compliant
	Grade A Grade B	chromated as plated	

Fasteners: carbon steel is recommended on all but aluminum; aluminum is recommended on aluminum; stainless steel must be activated prior to plating

TIN		ASTM - B 5 4 5	
Tin's non-toxic nature, softness, ductility, and solderability make it a very versatile coating. Although less appealing to the eye than bright acid tin plating, matte tin is more resistant to tarnishing.	Class A Class B Class C Class D Class E Class F	.0001" .0002" .0003" .0006" .0012" .00006"	*RoHS compliant

Fasteners: carbon steel is recommended on all but aluminum; aluminum is recommended on aluminum; stainless steel must be activated prior to plating

ZINC		ASTM - B 6 3 3	
Zinc plating is used to provide protection from corrosion, a decorative finish, or a base for paint and powder coating. This finish is typical for the electronics, high-tech, recreational, and trucking industries. Supplementary treatments for Type II coatings can be yellow, black, or olive drab.	Type I Type II Type III Type IV	as plated colored clear phosphated	*RoHS compliant coatings available
	SC1 SC2 SC3 SC4	.0002" .0003" .0005" .001"	

Fasteners: carbon steel is recommended on all but aluminum; aluminum is recommended on aluminum; stainless steel must be activated prior to plating