



The Best Customer is an Educated Customer

- Please allow us to assist your company prior to new product design by reviewing existing product specifications. There could be appreciable time and money to be saved. Contact us at info@aerospacemetalsllc.com

- (7) Before you send your parts out, be sure parts are not damaged, count is correct all the paperwork and specifications are in order when packaging your parts. Use white gloves. Some people have more acid in their system than others, which can leave deep finger-prints on your finished parts, which means re-working your parts before plating – especially steel, aluminum and magnesium parts.

PROCESS	TYPE CLASS	THICKNESS	COMMENTS & SPEC NO.
---------	------------	-----------	---------------------

PROCESS		THICK- CLASS	THICK- NESS	COMMENTS & SPEC NO.
CHEMICAL FILMS			MIL-DTL-5541	
Materials qualified produce coatings that range in color from clear to iridescent yellow or brown, inspection difficulties may arise with clear coatings because visual inspection does not reveal the presence of a coating.	Class 1A		For maximum protection against corrosion, painted or unpainted	
	Class 3 Type I only		For protection against corrosion where low electrical resistance is required.	
CHROME			QQ-C-320	
Corrosion Protective Plating	Type I Type II	Bright Finish Satin Finish	CL1 .00001	
COPPER			MIL-C-14550	
Copper in color and matte to very shiny finish. Good corrosion resistance when used as undercoat. A number of copper processes are available, each designed for a specific purpose. Brightness (to eliminate the need for buffing; High speed (for electroforming); Fine grain (to prevent casehardening); etc. Stress relief steel parts cold straightened or suspected of having residual tensile stresses (350°F ± 25°F-3 hours). Parts with tensile strength over 210 Ksi bake 24 hours within 4 hours after plating.	Class 0	Unless otherwise specified .001-.005"	For heat treatment stop-off.	
	Class 1	.001"	For carburizing and decarburizing shield, also plated through printed circuit boards.	
	Class 2	.0005"	As an undercoat for nickel and other platings.	
	Class 3	.0002"	To prevent basis metal migration into tin (prevents poisoning solderability).	
	Class 4	.0001"		

DOW PROCESS		MIL-M-3171
<p>#1 A Chrome pickle treatment for magnesium. Color varies from matte gray to yellow-red. Only fair corrosion resistance (less than 24 hours 20% salt spray resistance).</p>	Type I	<p>Removes metal Approx .0006" for wrought-less diecastings. No dimensional change.</p>
<p>#7 A dichromate treatment for magnesium. Color varies from light brown to gray depending on alloy. Only fair corrosion resistance (less than 24 hours 20% salt spray resistance).</p>	Type III	<p>Good paint base and protective qualities for all magnesium alloys except EK30A, EK41A, EZ33A, HK31A, and M1A.</p> <p>NOTE: Precleaning and pickling may result in dimensional changes due to metal loss.</p>
<p>#9 A galvanic anodize treatment for magnesium. Produces a dark brown to black coating. Designed to give a protective film on alloys which do not react to Dow No. 7 treatment. Only fair corrosion resistance (less than 24 hours 20% salt spray resistance).</p>	Type IV	<p>No dimensional change</p> <p>Can be used as a paint base, and is applicable to all magnesium alloys. Used where optical properties (black) are required on close tolerance parts (camera parts, etc.). NOTE: Precleaning and pickling may result in dimensional changes due to metal loss.</p>

ELECTROLESS NICKEL		MIL-C-26074	
<p>Similar to stainless steel in color. Plates uniformly in recesses and cavities (does not build up on edges). Corrosion resistance is good for coatings over .001" thickness. Electroless nickel is used extensively in salvage of mis-machined parts. Also, for inside dimensions and irregular shapes (where assembly tolerances need uniformity provided by "electroless" process). Precoating and postcoating procedures: -Class 1- below RC40. Baking</p>	Unless otherwise specified	<p>* The minimum thickness of the nickel coating shall be 0.0005 inch (grade B) for copper-, nickel-, and cobalt-based titanium and beryllium alloys.</p>	
	Class 1	_____	<p>As plated, no subsequent heat treatment. A bake for hydrogen embrittlement relief is not considered a treatment.</p>
	Class 2	_____	<p>Heat treated to obtain required hardness. May be used on all metals not affected by heating to 500°F and above.</p>
	Class 3	_____	<p>Aluminum alloys non-heat-treatable, and</p>

<p>at 375°F ± 25°F at users option</p> <p>-Class 1-RC40 and above. Bake at 375°F ± 25°F FOR 3 HOURS.</p> <p>Shot peen steel parts designed for unlimited life under dynamic loads prior to plating.</p> <p>Class 2-below RC40. Shot penned parts designed for unlimited life prior to plating.</p> <p>Post plating bake 3 hours min. 350°F.</p> <p>Class 2 coating. Shall have minimum hardness of 850 knoop (100gm load)</p> <p>Class 3. Post bake 1-1½ hours at 375°F ± 25°F</p> <p>Class 4. Post bake heat treatable alloys</p> <p>1-1½ hours at 240°F-260°F</p>	<p>Class 4</p> <hr/> <p>Grade A .001</p> <p>Grade B .0005" min</p> <p>Grade C .0015" min</p>	<p>beryllium alloys processed to improve adhesion of the nickel deposit.</p> <p>Aluminum alloy, heat treatable, processed to improve adhesion of the nickel deposit.</p>
--	--	--

ELECTROPOLISHING		(NO MIL-SPEC NO.)
Process electrolytically removes or diminishes scratches, burrs and unwanted sharp edges from most metals. Finishes from satin to mirror-bright are produced by controlling time, temperature, or both.	Typical Thickness Loss.0002"	Typical dimensional change. Process is not recommended for close tolerance surfaces.