

**CHEMICAL PROCESSING DEPARTMENT**

Process	Thickness	Comments
<p><b>Ultrasonic Cleaning</b></p> <p>Used in conjunction with solvents or alkaline cleaner to loosen or remove contaminants from deep recesses and other difficult to reach areas.</p>	No dimensional change	<p>Alkaline used to remove oily, semi-solid, and solid contaminants from metals. Performed at elevated temperatures.</p> <p>Parts immersed in solvent at or slightly above room temperature unless otherwise specified.</p>
<p><b>Vapor Degreasing</b></p> <p>Used on extremely soiled parts</p>	No dimensional change	Hot vapors of a non-chlorinated halogenated solvent removes grease, oils, and waxes
<p><b>Nitric Acid Passivation</b></p> <p>Process to improve the corrosion resistance of austenitic, ferritic, martensitic, and precipitation hardening stainless steels</p>	No dimensional change	Various concentrations and temperature ranges of Nitric Acid with or without additives
<p><b>Pre-Penetrant Etch</b></p> <p>Surface removal of the part to reveal grain structure for penetrant inspection</p>	0.0001"-0.0002" stock loss	<p>Used on any alloy i.e., Titanium, Magnesium, Inconel, Aluminum</p> <p>Acidic or Caustic solution at varying temperatures. Part may be immersed, sprayed, or swabbed with etchant</p>
<p><b>Humidity Testing</b></p> <p>Environmental Testing</p>	No dimensional loss	<p>Typically conducted for 24-26 hours at 99% relative humidity.</p> <p>May also be used for passivation verification.</p>
<p><b>Copper Sulfate Testing</b></p>	No dimensional loss	Same day passivation verification.