



Although plasma technologies have been used to clean and prepare organic materials (plastics, elastomers, etc.) for decades, the manufacturers of devices that are made from [inorganic materials](#) (metal, ceramic, and glass) have embraced the use of plasma processing for critical cleaning applications or simply to increase the bond-strength of coatings, over-molding, painting, marking, or bonding.

Traditional cleaning methods are sometimes not sufficiently adequate for devices manufactured for aerospace and/or medical device customers; additional cleaning processes are often required. Vacuum, or reactive-gas, plasma treatments are commonly employed for this purpose.

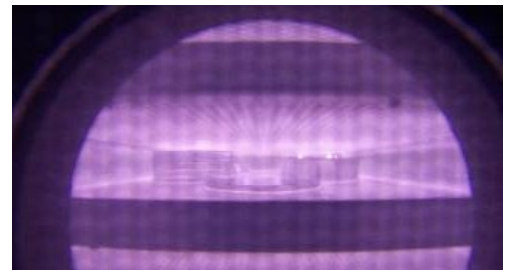
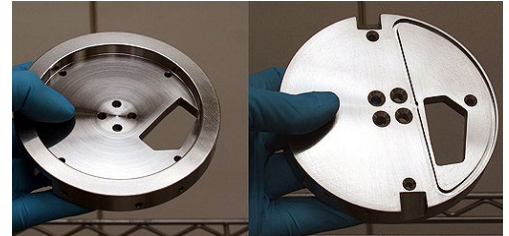
Plasma is the fourth state of matter; following solids, liquids, and gases. Plasma is a condition in which a gas, subjected to an electric field, can be excited on an atomic level. When excited, the gas can form ions, free radicals, or other reactive species.

The excited gas, when in contact with organic contamination (such as residual machining oils and organic film residue from aqueous and/or vapor degreasing), can break chemical bonds for form smaller molecules, which are swept away by the flowing plasma gas. Under vacuum, the gas can be excited at room temperature and below, so that heat build-up or damage to parts from a hot environment is never a concern. Argon plasma is commonly used in the industry to clean complex metal assemblies although other gases may also be used.

[Plasma treatments](#) are three-dimensional, uniform, long-lasting, and there are never any hazardous wet chemicals involved. Plasma treatments are 100% safe and environmentally-friendly.

Typical Processing Procedure:

- Unpack and perform a general cleaning of gross contamination (packing material, dirt, pools of machining oil, etc.).
- Perform the plasma cleaning process.
- Test for uniformity, efficiency, and wettability.
- Apply post treatment chemistry (if requested by customer) such as organo-silane primers, Chemlok, etc.
- Heat-seal in bag and label accordingly.
- Package and ship. Standard turnaround is 24 hours for most jobs.



We're ready to put our engineering expertise to work for you from prototype to production.

Engineering | Custom Fabrication | Manufacturing



CJ Composite

- Self-Lubricating
- Low weight | High Strength
- Chemical Resistance
- Direct replacement for Bronze



Ultracomp[®]

- Self-Lubricating
- High Load | Low Speed
- 54,400 PSI Compressive Strength
- Exceptional Resistance to Vibration and Impact



TriSteel[™]

- Self-Lubricating
- High Load | High Speed
- Metal Backed Bearing System
- 100% Lead Free



Rulon[®]

- Self-Lubricating
- Low weight | High Strength
- Low Coefficient of Friction
- Chemically Resistant



Enhanced Materials Division

- Plasma Surface Treatment
- Specialized Primers & Coatings
- Material ID & Selection
- Process Engineering | Analysis & Testing



TriStar



Engineered Plastic Solutions[™]

tstar.com



1.800.874.7827