TriStar

Engineered Plastic Solutions™

Plasma Cleaning of Metal Substrates

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 ultra-clean applications.

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.

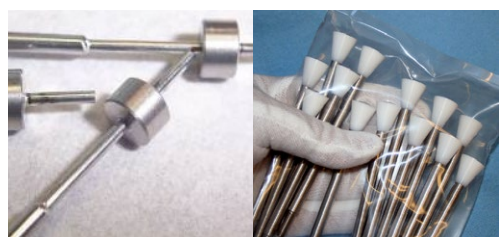
After plasma cleaning, the metal parts are wettable to adhesives, paints, over-molding, and specialty coatings.

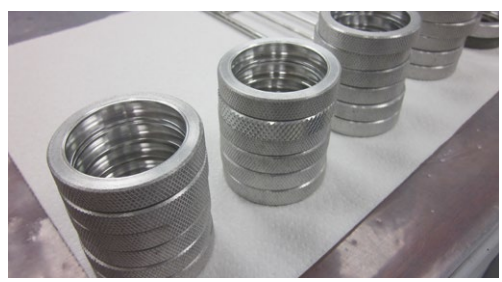
Plasma is the fourth state of matter; following solids, liquids, and gases. Plasma is a condition in which a gas, subjected to an electric field, can be excited on an atomic level. When excited, the gas can form ions, free radicals, or other reactive species. The excited gas, when in contact with organic contamination (such as residual machining oils and organic film residue from aqueous and/or vapor degreasing), can break bonds for form smaller molecules, which are swept away by the flowing plasma gas.

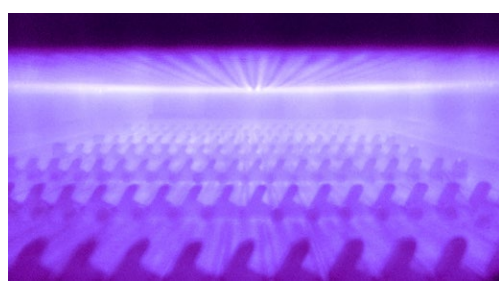
Under vacuum, the gas can be excited at room temperature and below, so that heat build damage to parts from a hot environment is not a problem. Argon plasma is commonly used in the industry to clean complex metal assemblies although other gases may also be used.

Plasma treatments are three-dimensional, uniform, and there are never any (wet) chemicals involved. Plasma treatments are 100% safe and environmentally-friendly.

To explore if the technique it right for your bonding process, fill out and submit a Plasma Treatment Worksheet and we can conduct a sample trial.







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- Chemical Resistance
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TriSteel™

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- 100% Lead Free

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- Low Coefficient of Friction
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