

PETRALITE

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PETRALITE™

A Division of Calvary Automation, Inc.

**Surface
Technology
That Rocks**

Improve your bottom line by improving your surface coating technology.



PETRALITE™

Transforming Surface Technology.

Petralite™ is a revolutionary new surface treatment for **Aluminum, Magnesium, Titanium** and other light metals, alloys and intermetallides.

The Petralite™ process of surface coating is the most advanced technology on the market today, leading the industry in **wear resistance, corrosion resistance & thermal protection**. Unlike anodizing or ceramic surface spray applications, Petralite™ is materialized by *transforming* the metal surface at the molecular level using plasma discharge to form a layer of hard, dense and adhesive ceramic material.



Extreme Surface Transformation

The duration of wear resistance with Petralite™ on aluminum alloy is far superior to other methods. Hardness ranges from 400 to 2000HV depending on the type of alloy and depth of coating.



Superior Shock Resistance

Petralite's™ high dielectric strength can withstand voltages in excess of 10 V/μm DC and temperatures of up to 500°C making it an ideal application for mounting electrical components.



Wear Resistance and Reduced Coefficient of Friction

Once polished, Petralite™ has a friction coefficient of less than 0.1 when lubricated and 0.25 when dry. Wear resistance is at least 3 times higher than hard anodizing and far superior to hard chrome plating.



A Natural Heat Shield

Combined with the heat resistance qualities of Petralite™, treated products can withstand up to several seconds of exposure to temperatures up to 2000°C without affecting the surface or part. This means even base aluminum can withstand thermal shocks for brief periods.



Resists Corrosion

Tests carried out in salt fog chamber following ASTM standard B117 demonstrates that alloys with a Petralite™ layer are unaffected by corrosion for up to 5,000 hours.

Application Depth Ranges

Typical hard coats range from 10 to 150 microns. Coatings can be as deep as 200-400 microns to provide extreme corrosion resistance and excellent thermal and electrical insulation.

Atomic Adhesion

The actual surface of the metal itself is transformed in the Petralite™ process at the molecular level creating a bond which provides more adhesion than an externally applied coating such as plasma spray coating.

Create Complex Compounds

For maximum versatility Petralite™ can be impregnated with a variety of other materials such as PTFE. By creating a custom compound using Petralite™ the applications for this surface treatment are virtually unlimited.

Retains Dimensional Integrity of Parts

Far superior to a plasma spray coating, Petralite™ forms a completely uniform surface layer of predictable thickness every time. Finished surfaces of even the most complex parts can be treated and polished while never compromising their originally specified dimensions.

Green Technology

Petralite™ layer is inert and does not react with food stuffs or a variety of other chemicals.