

POETON

High Specification Coatings

Automotive Industry

Apticote Coatings for the Automotive Industry

Poeton offer a wide range of engineering coatings for the automotive industry, for both volume production cars and high performance sports sector.

- Corrosion protection coatings, including nickel and zinc
- Engine cylinder bore coatings, including cylinder liners, with unrivalled lubricant retention and low friction
- Anti-fretting coatings
- Surface treatments for lightweight alloys, providing low wear, low friction and corrosion protection
- Thermal barrier systems
- Anti-scuffing coatings
- Wear resistant coatings like hard chrome and electroless nickel



Typical Apticote Automotive Applications

- Universal couplings and CV joints
- Spark plug central electrodes
- Manifolds, heat-shields and exhausts
- Turbochargers
- Cylinder liners, steel or aluminium alloy
- Cylinder blocks and motorcycle housings
- Gasket surfaces
- Fasteners
- Tyre valves
- Pulleys, drives and clutches
- Splines and couplings
- Callipers and forks

Poeton offer a comprehensive coating service for the automotive industry, from volume production for the mass market to the highly specialised world of competitive motor-sport. We work to KANBAN, PPAP and RUNRATES production systems, and our unrivalled laboratory underpins the quality control and quality assurance procedures demanded by the industry.

We can provide precision, high quality coatings that meet all the friction, wear and corrosion requirements of the automotive sector, including surface treatments for lightweight materials like aluminium and magnesium. We are at the forefront of new technology, with Poeton coatings being applied to the emerging generation of electric cars, and it won't be long before we can offer Zn/Ni electroplate - the very best in corrosion protection systems.

A case-history

Spark Plugs

Problem - When the ceramic body of the plug is fired at high temperature and pressure, the central steel electrode must be protected from oxidation, including the terminal cap which forms the contact with the high tension lead.



Solution - Poeton solved the problem with a specially brightened **sulphamate nickel**, barrel plated in batches of 100,000, with statistical process control to ensure a consistent thickness over the whole part. Our laboratory devised a quality assurance procedure based on weighing batches of pins before and after plating, accurately relating the change to the coating thickness, determined by random metallographic sections.

Which Apticote coating do I specify?

Apticote Coating	Features	Application areas and benefits
Apticote 100	Precision hard chrome	We specialise in precision plating, using jiggling and subsidiary anodes custom designed in our workshop, avoiding the need for expensive post-grinding or finishing. Parts include manifolds, housings, callipers, forks and heat-shields.
Apticote 300	Hard anodising and sulphuric acid anodising of aluminium	Our sulphuric acid anodising gives more than 1500 salt spray protection, and we can rack plate in large batches, ideal for corrosion protection of aluminium castings and brackets. Our Apticote 300 hard anodising provides exceptional wear resistance, and is suitable for pulleys and housings
Apticote 350 & Apticote 355/356	Composite hard anodising of aluminium	A range of anodic processes with polymer infusion, providing combined wear and corrosion protection (up to 15,000 hours salt spray) for aluminium alloys parts subject to more demanding environments
Apticote 400	High quality electroless nickel coatings	Ideal for precision parts needing anti-fretting and corrosion protection, on parts such as splines, couplings and gasket faces.
Apticote 450	An electroless nickel/polymer composite	Providing very low friction, wear resistance and anti-fretting. Good for gasket faces where there is the risk of relative thermal expansion.
Apticote 460	Ultimate corrosion protection	The ultimate corrosion protection and low friction system, based on electroless nickel and a very advanced polymer infusion. Suitable for low volume, larger parts, rather than mass-produced small items.
Apticote 800	Thermally sprayed coatings	We offer a wide range of metals, cermets and ceramics. For thermal barriers on manifolds, turbochargers and heat shields, we recommend Apticote 800/55P . For anti-scuffing on bearing surfaces, choose Apticote 800/17 .
Apticote Ceramic 2000	The supreme nickel/ceramic cylinder bore coating	For the ultimate engine performance, providing increased power, anti-scuffing and zero wear, at up to 18,000rpm. We can coat and hone liners, blocks and housings, including two-strokes.
Apticote Keronite 3000	An electro-ceramic coating for aluminium and magnesium alloys.	The ultimate wear protection for aluminium pulleys, brake discs and clutches. For magnesium housings, Apticote Keronite 3000 provides exceptional corrosion protection (> 300 hours salt spray) and is the ideal post-treatment before painting.

Two more case-histories

Tyre Valves

Problem - A customer was using a new alloy for his remote tyre pressure monitoring valves, but conventional sulphuric acid anodising was failing to provide the specified 1000hrs cyclic corrosion endurance.

Solution - Working with the customer, Poeton solved the problem in our laboratory, making proprietary modifications to the process and the racking, and producing a coating that now provides for 1500hrs protection. The parts are now rack sulphuric acid anodised in batches of 10,000, and our laboratory has developed a unique accelerated corrosion procedure that can provide a weekly quality assurance test.



Protean Electric Wheel Drives

Problem - Corrosion of aluminium components of Protean Electric Wheel drives. Protean Electric is a leading clean technology company that designs, develops and manufactures the Protean Drive™; the most advanced in-wheel electric drive system for hybrid and battery electric vehicles.



Solution - Poeton solved all the corrosion and tribological problems with their unique **Apticote 350** and **Apticote 355** composite anodising, working closely with the customer on a project basis.

"Poeton is one of the world's leading companies in the field of coatings and surface treatments, and is responsible for dealing with all the anodised components of the Protean Drive™. Protean Electric is both proud to have Poeton as its specialist partner and extremely grateful for Poeton's expertise and experience in this area."

Andrew Vallance, Protean Electric

Disclaimer

The information contained in this leaflet is intended for guidance. Whilst every effort is made to understand the environment in which the coating is designed to work, success can only be determined by trials and in-service testing.



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NADCAP Accreditation is held by Poeton Industries Ltd with Poeton (Gloucester) Ltd Accredited for Plasma Spray (coatings) and Chemical processing, and Poeton (Cardiff) Ltd Accredited for Chemical Processing and NDT

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