

# POETON

High Specification Coatings

## Chemical, Oil and Gas Industries

## Apticote Coatings for the Chemical, Oil and Gas Industries

The Poeton range of engineering coatings for the Chemical and Oil & Gas Industries encompasses:

- Wear resistant coatings, including hard chrome, thermally sprayed coatings and electroless nickel
- Anti-corrosion coatings, including anodic treatments for lightweight alloys of aluminium, titanium and magnesium
- Anti-fretting coatings, e.g. splines and couplings
- Low friction coatings for sliding situations, including drill coring
- Coatings to resist hot corrosion and sulphur corrosion
- Anti-galling coatings
- Surfaces requiring electrical insulation, including titanium



### Typical Apticote Applications in the Chemical, Oil and Gas Industries

- Titanium flex tubes and cases
- Rope termination plates
- Potting frames
- Gate valves
- Coring tubes
- Sub-sea systems (towed arrays, cameras, robots, etc.)
- Fibre optic connectors
- Actuator mandrels
- Gripper trees and housings
- Titanium enclosures and threads
- Seal faces
- Pump parts, splines and couplings
- Connectors and mandrels

Poeton offer a comprehensive coating service for the chemical and oil & gas industries, meeting the challenge provided by the very harsh and demanding environments.

These include sea water corrosion problems, aggressive chemicals, galling and seizure of threads, often in titanium alloys, wear protection of seal faces and valve surfaces, and providing low friction on connectors and mandrels. We even have treatments to electrically insulate surfaces, often the most effective way to reduce galvanic corrosion, including surfaces in contact with titanium.

We are at the forefront of surface coating and treatment suppliers to some of the world's leading chemical and oil & gas companies, and one of our crucial advantages is our technical support and laboratory backup. Using our expertise in characterising and understanding wear and corrosion processes, we work with our customers on a project basis, ensuring that the most effective coating solution is identified.

### A case-history

#### Sub-sea Array

**Problem** - Our customer had a requirement to protect large aluminium electronic housings from the extremely hostile environment found in sub-sea surveying. Traditional anodising treatments could not withstand the constant insertion and extraction from sea water



**Solution** - Poeton undertook a laboratory research project, simulating the service conditions and evaluating a range of coating options. With some proprietary improvements, our **Apticote 355** advanced anodic composite was shown to solve the problem, giving up to 15,000 hours of salt spray protection (MIL-A-8625 & ASTM B-117), which is 44 times higher than the 336 hours specified in the customer's Mil specification.

## Which Apticote coating do I specify?

Apticote Coating	Features	Application areas and benefits
Apticote 100	Precision hard chrome	We specialise in precision plating, using jigging and robbers custom designed in our workshop, avoiding the need for expensive post-grinding or finishing. Parts include seal faces, mandrels, pump plates and shafts. We can provide an undercoat of <b>thin-dense chrome</b> for ensured corrosion protection.
Apticote 200	Polymer coatings	A family of polymer coatings offering corrosion protection, low friction and wear prevention. Parts include rope termination plates, potting frames and gate valves.
Apticote 300	Hard anodising and sulphuric acid anodising of aluminium, and titanium anodising	Our <b>sulphuric acid anodising</b> 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 <b>Apticote 300</b> 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 specialised processes with polymer infusion, providing exceptional wear and corrosion protection (up to 15,000 hours salt spray) for aluminium alloys. Parts include sub-sea systems, as well as towed arrays, cameras and robots
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. The <b>Apticote 400P</b> variant gives exceptional corrosion protection, for instance on fibre optic connectors
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, and for anti-galling on threads, including titanium.
Apticote 460	An electroless nickel/polymer composite	Providing more wear resistance than the A450 variety, with low friction and corrosion protection. Used on actuator mandrels, gripper trees and housings
Apticote 800	Thermally sprayed coatings	We offer a wide range of metals, cermets and ceramics for wear resistance on seal faces, valve parts, shafts and housings. Poeton will advise on which of our many coatings is the best choice for your application.
Apticote Keronite 3000	An electro-ceramic coating for aluminium, magnesium and titanium	The ultimate wear protection for parts made in lightweight alloys, and for providing an electrically insulating surface on titanium to prevent galvanic corrosion of mating parts

## A case-history

### Auger

**Problem** - An Auger is a device for mixing and moving liquids. Our customer had a requirement to mix a very sticky resin, resulting in massive build up of the product on the Auger surface, and then jamming. It was costing thousands of pounds in shutdown and cleaning costs.



**Solution** - Poeton looked at the problem in the laboratory, performing adhesion trials between the product and various coatings. It was essential that any coating be food compliant, and Poeton recommended their **Apticote 460M** advanced nickel composite, 25 microns thick. It worked! The customer was able to run the machine for weeks without needing to stop and clean down - saving him those thousands of pounds.

### 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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