

# APTICOTE®

# 100

## Poeton Apticote Hard Chrome Plating

**Apticote 100** is a low temperature electrolytic plating process that deposits a protective coating of hard chrome on to a variety of base materials, to produce an attractive hard wearing, low friction surface.

It out-performs conventional hard chrome plate when combating wear, corrosion and friction, and it can be applied to a precise thickness by the use of Poeton's unique processing method ('**Precision Chrome Plating**'), resulting in a harder coating. In many instances this eliminates the need for final grinding, a step that can reduce hardness and substrate adhesion. This in turn leads to shorter production times and the elimination of grinding reject losses.

Where these characteristics are critical, investing in **Apticote 100** precision chrome plate in preference to ordinary hard chrome adds considerable value to your product and, in many cases, enables you to reduce costs.

**Process control is crucial** – by maintaining optimum bath chemistry and managing the current density, we avoid the pitting and softening that plagues so many hard chrome plates, features that reduce wear resistance, encourage pitting corrosion and impair grinding.



Precision plating

### Primary Application Sectors

**Apticote 100** hard chrome plating is used in a wide variety of industries, including:

- Pharmaceutical
- Chemical
- Oil and Gas
- Textiles
- Printing
- Mining
- Moulding
- Aerospace
- Automotive



Precision Apticote Hard Chrome Plate showing no edge build-up.

(X100 – 50 microns)

### Why is Apticote 100 the best hard chrome plating?

- PC-controlled power supplies – fully programmable
- Accurately controlled chemistry and maintenance
- Bespoke anode design
- Specialist tooling, minimising edge build-up and allowing 'precision' plating
- Monitored and controlled iron and trivalent chrome build-up
- Professional laboratory backup
- Highly trained and skilled operators
- Comprehensive quality inspection
- Rigorous environmental controls, minimal waste rinse water

### Substrates

**Apticote 100** can be applied to a wide range of base materials, including: stainless steels, cast iron, aluminium alloys, titanium alloys, copper alloys, bronzes and nickel alloys. Poeton are particularly skilled in the special processing procedure required to effectively plate titanium alloys, specified as **Apticote 100T**.

### Tolerances and Cost

Poeton have highly skilled operators who can optimise the tooling and jiggling so that you, the customer, can be provided with the most cost-effective coating – precision deposits to tight tolerances; where you want it, with a minimum post-grinding requirement.

## Key Features

- Extreme hardness (1,000 Hv)
- Low coefficient of friction (0.05 oiled)
- Excellent abrasion resistance
- Precision plated (75 microns)
- No final grinding
- Corrosion resistance
- Low adhesive wear



**Apticote 100** controlled deposition on JAS 39 flight actuators

## Primary Benefits

**Apticote 100** provides prolonged service life, reduced finishing costs and lower frictional losses. The specialised crack-free version, **Apticote 100C**, can greatly extend the corrosion life of your product, even under very arduous

**Apticote 100** is ideal as a volume production process; repeatable, zero defect, *just in time*; the ultimate wear-resistant treatment.

## Key Properties

The main performance advantages of **Apticote 100** hard chrome plating are:

### Excellent Adhesive Wear Resistance

**Apticote 100** gives ultra high metal-to-metal sliding wear resistance – 200 times less wear than given by through-hardened, induction-hardened, carburised or nitrided steels, and five times better than conventional hard chrome plate. Under these conditions, **Apticote 100** can only be matched or bettered by the highest quality thermally sprayed ceramics or cermets.

These exceptional characteristics are exploited in such applications as machine tool slideways. The hard, precise coating allows the reciprocating components – the machine bed and saddle – to move easily, without wearing or losing dimensional accuracy, over many years of arduous use.

### High Abrasion Resistance

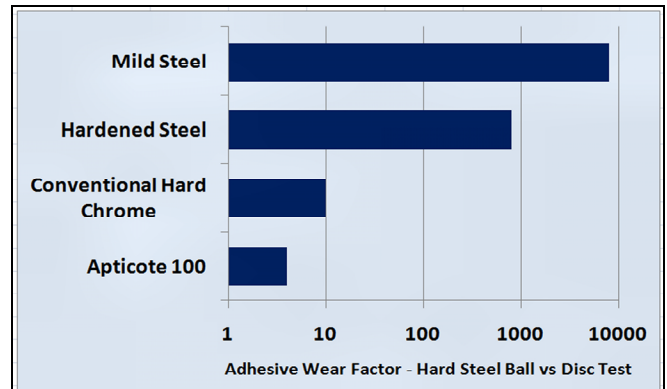
**Apticote 100** gives superb abrasion resistance, even under high contact stresses, providing a very low wear rate. It is many times better than that of ordinary hard chrome, hardened steel or electroless nickel in abrasive applications like textiles, paper and food products.

Also, thick deposits provide excellent wear resistance under high stress contact against sand, coal, cement, limestone, glass fibre, etc.

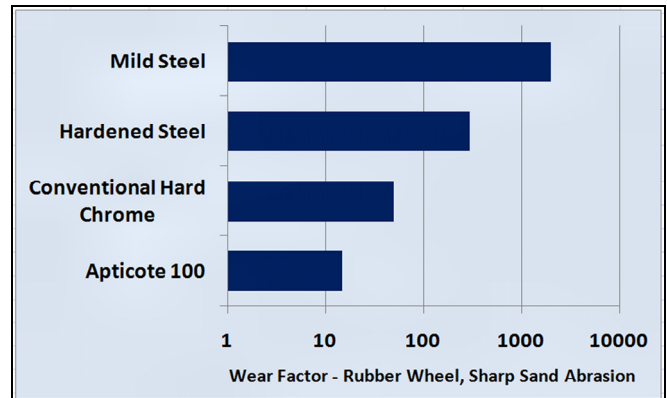
With abrasion being the most common and destructive industrial wear process, **Apticote 100** has the potential to solve many problems in pumps, valves and bearings.

### Low Friction

**Apticote 100** produces very low friction against polymers, carbons and graphite, making it ideal for textile applications or for seal faces. It also gives low friction against hardened steels, bronzes and other surface-treated counterfaces (e.g. nitrided steel), making it a perfect coating for a shaft in a journal bearing, both lubricated or dry.



In lubricated applications, such as cylinder bores, **Apticote 100** provides unsurpassed qualities. It responds superbly to honing and, with a crack network, its ability to hold a lubricant and prevent scuffing is excellent.



### Disclaimer

The information contained in this leaflet is intended for guidance only. 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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