



## NICKEL COMPOSITES

The Apticote 460 family of coatings add the protective benefits of low friction polymers to the natural hardness and corrosion resistance of nickel. When applied to any ferrous alloy (including stainless steel), copper alloys, aluminium alloys or titanium, Apticote 460 coatings impart particularly high levels of wear resistance, permanent lubricity and non-stick properties. Investing in Apticote 460 coatings can add considerable value to your product and, in many cases, enable you to reduce costs.

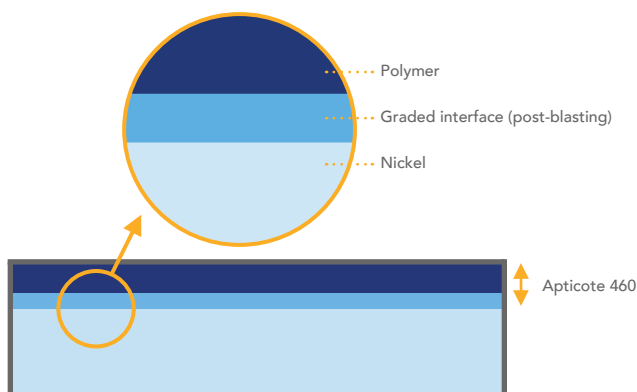
APTICOTE 460 OPTIONS	
Apticote 460H	For best wear resistance. The hardness of the coating can be varied for specific requirements
Apticote 460C	For optimum wear resistance with maximum corrosion resistance. FDA approved & compliant
Apticote 460G	For high hardness (1,000 Hv) combined with lubricity (low friction). FDA approved & compliant
Apticote 460M	For heavy duty, non-stick applications with aggressive products. FDA approved & compliant

### KEY FEATURES

Primary features of Apticote 460 coatings include:

- High hardness - up to 900 - 1,000Hv
- Excellent mould-release and non-stick properties
- Graded, high integrity nickel/polymer interface
- Superior adhesive wear resistance
- Low dynamic friction - 0.10 to 0.15
- Low static friction - 0.06 under high loads
- Applied thickness of 12 - 50µm
- USDA and FDA approved (compliant)
- Easy wash-down

HIGH INTEGRITY NICKEL/POLYMER INTERFACE



### HIGH ADHESIVE WEAR RESISTANCE

Apticote 460 low friction coatings achieve four times the adhesive wear resistance of electroless nickel in pin-on-disc sliding tests, with hardness values in the range 750-1000 Hv. Since the outer surface is a polymer, Apticote 460 coatings are not suitable for harsh abrasion situations.

### CORROSION RESISTANCE

Depending on the formulation, Apticote 460 exceeds 1500 hours in salt mist tests, and demonstrates greatly improved corrosion resistance over standard electroless nickel plating. Apticote 460 also exhibits significant resistance to many commonly used chemicals.

### PERMANENT LUBRICITY

The surface of Apticote 460 is smooth and slippery, using low friction polymers. In many cases, static friction is decreased (as low as 0.06) as the load is increased, thus eliminating "stick-slip" and undesirable vibration. For non-stick, mould-release applications, Apticote 460 utilises polymers with low surface energy.

### SUBSTRATES

Apticote 460 can be applied to a wide range of base materials, including aluminium, steels (including stainless steels), copper alloys and titanium. Finished tolerances and surface finish are normally related to the conditions of components before processing. Some post heat-treatment is often required and may involve temperatures up to 400°C, depending on material and parameters. Apticote 460 coatings will operate from -115°C to 260°C, depending on the formulation.

### COST ADVANTAGES

Apticote 460 can also substantially cut costs by opening up profitable new materials options. For example, a part manufactured from low carbon steel protected by the appropriate Apticote 460 corrosion resisting coating can often replace a more expensive alloy metal component, and with better performance.

#### 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.