

SermaLon® Coating for Turbomachinery

PRODUCT DESCRIPTION

The patented three-part SermaLon coating system was developed primarily to provide anti-fouling and corrosion protection to driven compressor components and industrial gas turbine components exposed to wet chloride attack, as well as steam turbine components.

The SermaLon coating system consists of:

- An aluminum-filled chromate/phosphate bond coat.
- An intermediate high temperature polymeric inhibitive coating.
- A PTFE impregnated topcoat that provides a barrier against corrosion and excellent resistance to fouling.

The coating system provides excellent protection to 403 and 410 stainless substrates when exposed to corrosive steam conditions or low pH wet chloride environments.

ADVANTAGES

The benefits of using SermaLon include:

- Smooth surface finish and PTFE impregnated topcoat contribute to performance recovery and reduced fouling rate.
- Superior resistance to acid rain, deicing fluids, decontamination fluids, hydraulic fluids, lube oils, and jet fuels.
- Excellent bond strength.
- Continuous protection against relative humidity to 100 percent, and with continuous salt/mist in air.
- Excellent coating ductility.
- No hydrogen embrittlement problems.
- High resistance to corrosion fatigue.

APPLICATIONS

SermaLon is designed to be used on ferrous substrates such as:

- Centrifugal compressors exposed to wet chlorides or excessive fouling.
- Steam turbine components exposed to corrosive steam; e.g., nozzles, diaphragms, blades, wheels, packing areas, rotors and cases. (Note: Not intended to resist water droplet erosion.)
- IGV's of industrial gas turbines.

SermaLon is covered by US Patents 5,985,454; 6,159,547 and foreign patents.



Centrifugal compressor rotor coated with SermaLon.

Physical Properties

Typical Thickness Range	0.004-0.006 inches (100-150 µm)
Maximum Continuous Operating Temperature	500°F (260°C)
Peak Operating Temperature/Time	600°F (315°C)/ 1 hour
pH Operating Range	3-9

Performance Data

TEST	RESULTS
Salt spray (ASTM B117) On 410 Stainless steel	>3000 hours with no red rust
Adhesion (ASTM D3359)	5B, No pickoff, Excellent
100% Humidity (ASTM D2247)	3000 hours- no effect
Surface Finish (On new machined external surfaces)	<40 microinches R _a at .030" cutoff <1.0 microns R _a at 0.8 mm cutoff