

SermaLon® Coating for Turbomachinery

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 hightemperature 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 carbon and stainless steel substrates when exposed to hydrocarbons, corrosive steam conditions, sour gas or low pH wet chloride environments.

Advantages

The benefits of using SermaLon include:

- Smooth surface finish and PTFEimpregnated 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
- Excellent resistance to hydrocarbon fouling

Applications

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

- Steam turbine components exposed to corrosive steam
- · IGVs of industrial gas turbines



Centrifugal compressor rotor coated with SermaLon

 Centrifugal compressors exposed to sour gas, wet chlorides, or excessive fouling, especially by ethylene and other hydrocarbons

0.004 to 0.006 inches (100 to 150 µm)

Physical Properties

Thickness

Maximum Continuous Operating Temperature	500°F (260°C)
Peak Operating Temperature/Time	600°F (315°C)/1 hour
pH Operating Range	3 to 9
Performance Data (2 mil (50 μm) coating on 1010 steel)	
Test Salt Spray (ASTM B117) On 410 stainless steel	Results > 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 0.8 mm cutoff < 1.0 microns R _a at .030" cutoff

Praxair Surface Technologies, Inc 1500 Polco Street Indianapolis, IN 46222

www.praxairsurfacetechnologies.com psti-info@praxair.com

Telephone: +1 317 240 2500 Fax: +1 317 240 2255 © Copyright 2010 Praxair S.T. Technology, Inc. All rights reserved

Praxair, the Flowing Airstream design, and SermaLon are trademarks of Praxair S.T. Technology, Inc. in the United States and/or other countries.

The information contained herein is offered for use by technically qualified personnel at their discretion and risk without warranty of any kind.

Printed in the United States of America 09-2010

Printed on recycled paper P-10286