



Chemical Processing



- ✓ FDA compliant
- ✓ Temperatures up to 500°F
- ✓ Full vacuum rating

SermaShield™ coatings provide advanced PFA resins for the ultimate protection in corrosion management

Ideal for the harshest chemicals at high temperatures

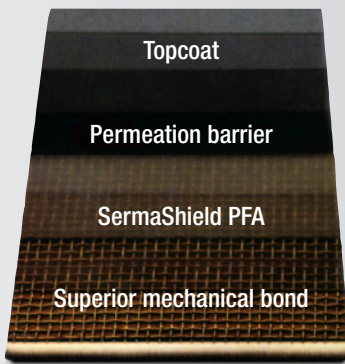


Superior corrosion protection in aggressive c

SermaShield advanced lining systems are designed for extreme conditions

Made from fully fluorinated PFA and FEP resins, the SermaShield system is designed to protect against the harshest chemicals at the highest temperatures—as high as 500°F. More than a simple coating, it is a complete system that combines mechanical bonding and permeation barrier technology for the ultimate corrosion protection.

The SermaShield System

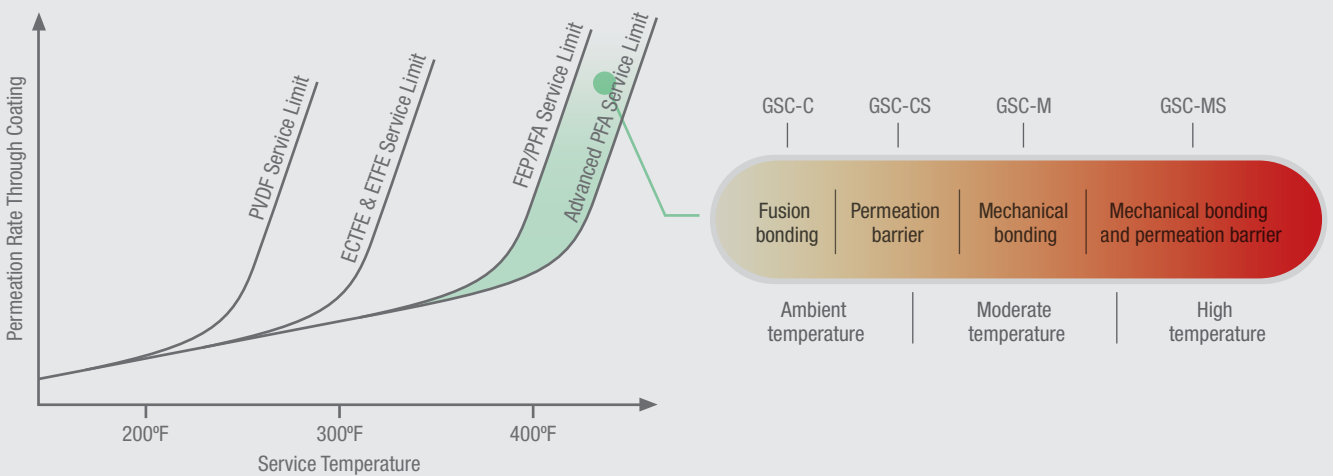


How it works

Because they're applied as an aqueous dispersion at room temperature, SermaShield Advanced PFA coatings easily line large vessels up to 30,000 gallons and complex components that can't be coated with traditional powder coatings.

- **The bond:** We use a superior bonding technology and a proprietary welding procedure—using stainless steel or nickel superalloy mesh—to create an extremely tenacious bond between the metal substrate and the lining. This reduces or even eliminates the effects of chemical permeation in extreme environments.
- **The barrier:** An intermediate layer of either activated carbon or ceramic is added to create a permeation barrier to further resist permeation from aggressive chemistries such as HF, HCl or even nitric acid.
- **The finish:** For improved performance, we also can add static-dissipating, wear-resistant or gloss coats.

Protection even in elevated temperatures

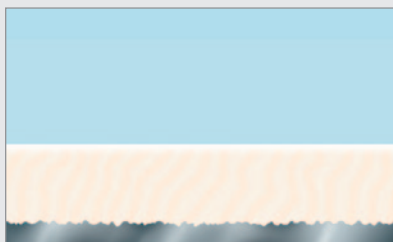


Partially fluorinated resins can provide good protection, but only fully fluorinated resins like PFA and FEP can provide protection at elevated temperatures.

Chemical environments at elevated temperatures

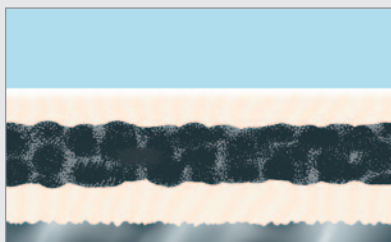
SermaShield advanced PFA coating options

SermaShield GSC-C



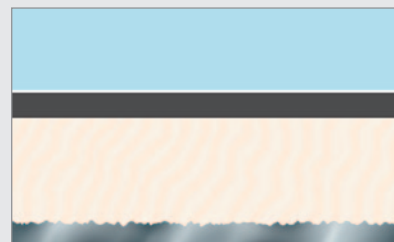
- Chemically bonded coating
- Available thickness: 40-60 mils

SermaShield GSC-CS



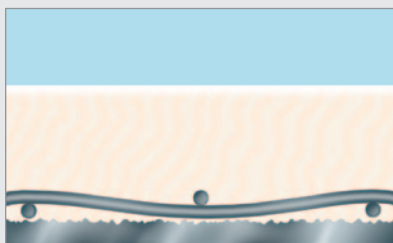
- Chemically bonded coating
- Available thickness: up to 60 mils
- Activated carbon barrier

SermaShield GSC-CE



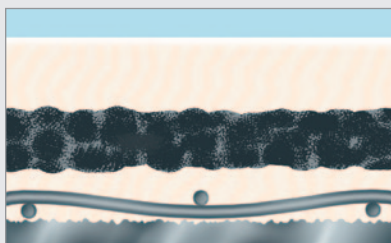
- Graphite barrier
- Static dissipating
- Available for use in SermaShield GSC-C, GSC-M and GSC-MS systems

SermaShield GSC-M



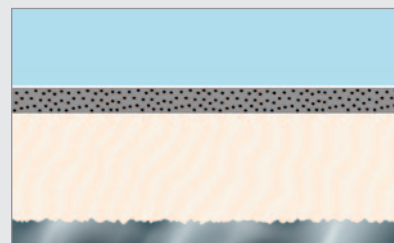
- Mechanically bonded coating
- Available thickness: 60-80 mils

SermaShield GSC-MS



- Mechanically bonded coating
- Available thickness: up to 80 mils
- Activated carbon barrier

SermaShield GSC-HC



- Carbide-reinforced topcoat
- Abrasion resistant
- Available for use in SermaShield GSC-C, GSC-M and GSC-MS systems

C: Chemical bond CS: Chemical bond with permeation CE: Static-dissipating layer M: Mesh MS: Mesh with permeation layer HC: Hard coat

SermaShield coating selection guide

	Inorganic acids: HCl, HF, H ₂ SO ₄	Alkalies: NaOH, Ca(OH) ₂	Halogenated organics	Oxygenated organics: Ethers, esters, acids
Jacketed reactors >200°F	GSC-MS	GSC-M	GSC-M	GSC-MS
Jacketed reactors <200°F	GSC-M	GSC-M	GSC-M	GSC-M
High temperatures >300°F	GSC-MS	GSC-M	GSC-M	GSC-MS
Moderate temperatures ~200°F to ~300°F	GSC-M	GSC-CS GSC-M (vacuum)	GSC-CS	GSC-M
General corrosion ~100°F to ~200°F	GSC-C	GSC-C	GSC-C	GSC-C
Ambient temperatures <100°F	GSC-C	GSC-C	GSC-C	GSC-C

Contact a Praxair application engineer for a FREE consultation.

Praxair Surface Technologies

Industry-leading services for chemical processing

> Signature solutions

Praxair Surface Technologies can create custom answers to your unique coating problems, adapting our application techniques to match your operating environment—so you can be assured you've got protection that fits.

> Experience and expertise

For more than half a century, we've been innovating and growing the ways we coat high-performance parts. Our innovative research teams developed many of the materials and processes in use today throughout the industry.

> Praxair's exclusive Coat2Go™ turnkey services

When you're ready to add additional processing equipment to your operation, let us do the work for you. Our exclusive Coat2Go turnkey services will:

- Purchase all parts and accessories
- Coat each part for maximum protection in your operating environment
- Inspect, test, deliver and assemble the new parts

Common applications

- Agitators
- Baffles
- Centrifuges
- Chutes
- Coat tanks
- Column sections
- Conical blenders
- Covers
- Dip tanks/pipes
- Distillation columns
- Dryers
- Drum filters
- Electrolytic cells
- Extension pieces
- Fans
- Filter housings
- Fittings
- Flush outlet valves
- Glass vessel accessories
- Heat exchanger coils
- Impellers
- ISO containers
- Kettles
- Knockout pots
- Manway covers
- Mist eliminators
- Mixing equipment
- Pipework
- Pressure filters
- Protector rings
- Pumps
- Reactor vessels
- Reducing flanges
- Scrubber sections
- Spool pieces
- Storage tanks
- Tank and rail cars
- Thermowells
- Vacuum filters
- Valves
- Ventures

To learn more about SermaShield coatings or our Coat2Go turnkey services, contact one of our custom coating engineers:

United States

Houston, Texas

+1 (713) 849-9474

Italy

Monte Marenzo

+39 (034) 160-1111



© Copyright 2012 Praxair S.T. Technology, Inc. All rights reserved.

Praxair, the *Flowing Airstream* design, SermaShield, and Coat2Go are trademarks or registered trademarks of Praxair S.T. Technology, Inc. in the United States and in other countries.

Other trademarks used herein are the registered trademarks of their respective owners.

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

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
02-12
Printed on recycled paper
P-10453

Telephone: +1.317.240.2500
Fax: +1.317.240.2255

www.praxairsurfacetechologies.com
info@praxair.com