PTFE & Polymer Solutions

For critical bridge bearing applications & other infrastructure needs

Our innovative PTFE and bonding technologies provide exceptional friction control performance and critical durability in some of the most demanding construction and infrastructure applications on earth. From bridges to pipelines to dams, wherever components move in relation to each other, our solutions offer unparalleled safety and reliability through extreme weather, loads and shocks. Common applications include slide bearings and rubber laminations where anti-stick properties are needed during harsh conditions.

PROVIDING VALUE THROUGH VERTICAL INTEGRATION

Our vertically integrated processes allow us to produce PTFE and polymer solutions that are of the highest quality and able to meet your most stringent requirements while reducing cost of ownership.

MATERIAL SELECTION

All of our products are available in a variety of PTFE formulations including customized fillers and reinforcements to suit individual applications. Some of our standard formulations include:

- **Style 8764 - Premium Virgin PTFE:** manufactured from only the highest quality PTFE resins
- **Style 8765 - Virgin PTFE:** for those challenging applications that demand material that can withstand a broad temperature range and provide excellent chemical resistance
- **Style 8534 - Carbon Graphite-Filled PTFE:** for increased comprehensive strength, hardness, and wear resistance
- **Style 8790 - Modified PTFE:** for enhanced sealing, weldability, permeation resistance, and a better machined surface finish
- **Style 9008 - Bronze-Filled PTFE:** for increased comprehensive strength, hardness, wear resistance, as well as improved thermal conductivity and reduced cold flow
- **Style 9405 - Premium 25% Glass Filled:** formulated with the highest quality resins and fillers for use where increased wear, creep and cold flow resistance are important requirements
- **Style 9406 - General Purpose 25% Glass Filled:** for applications where enhanced rigidity and wear are required

STANDARD FILLER FEATURES

Glass Fiber	• Increases compressive strength, rigidity and wear • Reduces creep and cold flow • Minimal effect on chemical and electrical properties
Carbon	• Increases compressive strength, hardness, wear, and load properties • Good chemical resistance • Various types and amounts of carbon can be added to alter conductivity
Graphite	• Reduces coefficient of friction • Reduces initial wear • Increases strength
Molybdenum Disulfide	• Increases hardness, stiffness, and wear • Minimal effect on chemical and electrical properties
Bronze	• Increases hardness and wear resistance • Increases dimensional stability and compressive strength • Not suitable for corrosive or electrical applications
Pigments	• Identification, visibility or branding

TECHNETICS PTFE & POLYMER SOLUTIONS
EnPro Industries companies

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Technetics GROUP
EnPro Industries companies

FLUOROPOLYMER ETCHING SOLUTIONS

Our customized fluoropolymer etching services are designed to give you the bondable surfaces you need on any fluoropolymer quickly and efficiently. With over 45 years experience and the use of our proprietary sodium ammonia fluoropolymer etching process, we will ensure you receive the long lasting, durable, uniform surface modification you require for moving components on bridges and other critical applications.

SHEAR ADHESIVE TESTING

Below are the results of a shear adhesive test comparing the performance of our sodium ammonia process against that of a sodium naphthalene process. The data shows that the sodium naphthalene process fails comparably quicker and our sodium ammonia process performs substantially better overall, making it the preferred solution.

Gauge length: 2.5”
Crosshead speed: 0.05”/ min
Temperature: 23°C
Instrument: Instron 1114 Floor Model
Cure time: 7 Days
Adhesive: Thermoset Hardener 66, Lord 600 Resin Adhesive, Part A

ETCHING CAPABILITIES

We can treat one or more surfaces — including 1 sided or 2 sided etching on continuous skived rolls and flat sheets, full immersion selective spot etching on compound contours of three-dimensional parts. Our equipment can accommodate most commonly used formats, including:

- Flat sheets up to 48” x 96”
- Film rolls up to 50” wide
- Narrow tapes and thin-walled tubing
- Irregularly shaped items as large as 5 cubic ft in volume, up to 48” x 96” x 3/4”

DOCUMENTATION

- Water Wettability Testing
- AMS 2491-E Certification
- Certificate of Compliance
- Sheer Strength Testing
- ISO 9001:2008 Certified

TECHNETICS PTFE & POLYMER SOLUTIONS SODIUM AMMONIA PROCESS

Specimen Thickness (in)	Adhesive Thickness (in)	Overlap Length (in)	Overlap Width (in)	Failing Load (lb·f)	Failing Load (lb·f/sq in)	% Failure Adhesion to PTFE
0.010	0.020	0.509	1.004	823.10	1610.6	75
0.010	0.029	0.584	1.025	828.34	1683.8	25
0.010	0.037	0.507	1.008	739.04	1446.1	60
0.010	0.033	0.549	1.007	708.70	1281.9	65
0.010	0.035	0.506	1.011	797.64	1559.2	50
					AV=1456 ±132	

SODIUM NAPHTHALENE PROCESS

Specimen Thickness (in)	Adhesive Thickness (in)	Overlap Length (in)	Overlap Width (in)	Failing Load (lb·f)	Failing Load (lb·f/sq in)	% Failure Adhesion to PTFE
0.010	0.014	0.535	1.011	390.60	722.1	15
0.010	0.016	0.548	1.010	435.68	787.2	25
0.010	0.013	0.522	1.013	481.12	909.9	15
0.010	0.017	0.520	1.012	382.07	726.0	10
0.010	0.018	0.515	1.009	516.57	994.1	15
					AV=828 ±120	

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