



HIGH PERFORMANCE PEEK POLYMERS

VICTREX® ST™ POLYMER

Improved Mechanical Performance at Demanding Temperatures

Victrex Polymer Solutions has introduced a new proprietary range of products called VICTREX® ST™ polymer. This innovative new product line is part of the VICTREX® polymer family and is designed to perform in the most demanding environments, specifically in applications requiring a combination of high temperature mechanical performance and dimensional stability.

VICTREX ST polymer is a specialty product with three grades:

- STG45 polymer (an unfilled grade),
- ST45GL30 polymer (a glass-filled grade)
- ST45CA30 polymer (a carbon-filled grade)

The unique feature of VICTREX ST polymer is that it can provide improved mechanical performance at higher temperatures while maintaining all of the well known properties of VICTREX PEEK polymer.

- When compared to other unfilled/unreinforced PAEK polymers, VICTREX ST STG45 polymer has improved mechanical performance especially in the temperature range from 150°C (302°F) to 200°C (392°F). Reinforced grades perform up to 383°C (720°F).



VICTREX ST polymer can be used in a variety of oil and gas applications such as downhole connectors.

VICTREX ST polymer offers improved fatigue performance for applications such as dynamic load seals.

FIGURE 1: Flexural Modulus by DMTA of VICTREX ST STG45 Compared to VICTREX PEEK-HT G45 and VICTREX PEEK 450G

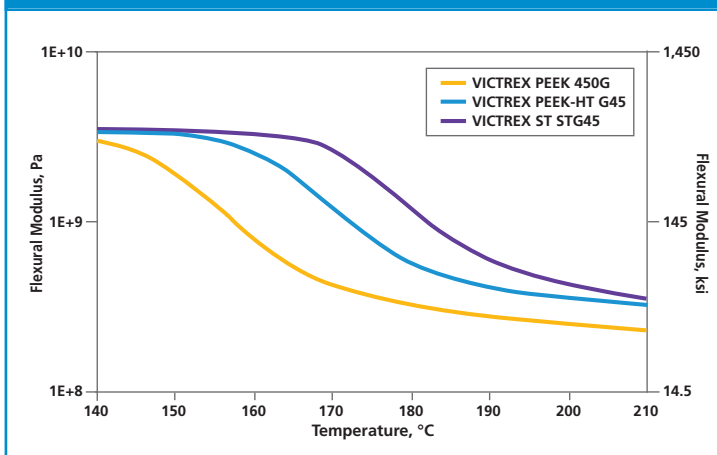


FIGURE 2: Tensile Fatigue Performance (cycles to failure) of Unfilled VICTREX Polymer (23°C, 5Hz)

	VICTREX PEEK 450G	VICTREX PEEK-HT G45	VICTREX ST STG45
115 MPa	—	175	400
110 MPa	—	460	1,800
105 MPa	25	3,000	160,000
100 MPa	70	>1E6	>1E6

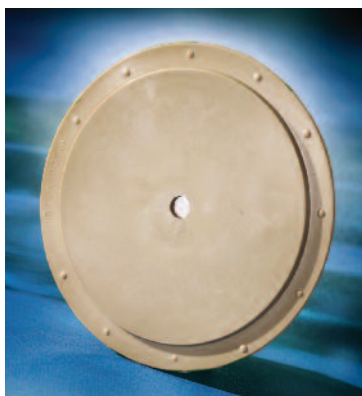
- VICTREX ST polymer features the same benefits as VICTREX PEEK polymer including purity, electrical resistance, chemical resistance, dimensional stability and low permeability/moisture absorption and maintains mechanical performance at higher temperatures.

VICTREX® ST™ POLYMER

VICTREX ST is a semi-crystalline thermoplastic which processes similarly to VICTREX PEEK polymer allowing cost effective production of parts.

This combination of benefits provides customers with another option when placing applications in demanding temperature environments such as the oil and gas, electronics or automotive industry.

- The engineering requirements of applications in these areas are continually demanding higher performance materials.
- Equipment or parts made with VICTREX ST polymer can perform better, last longer and help customers realize long-term cost savings.
- VICTREX ST polymer has the potential to replace metal, or other high performance polymers, for many types of applications such as seals, scrapers, disk drive carriers, connectors, brake wear indicators, test sockets, wire coatings, valve plates or as a filler for high temperature friction pads.



Compressor valve plate made with VICTREX ST ST45GL30 polymer

FIGURE 3: Melting Point and Heat Distortion Temperature (HDT at 1.8 MPa) of 30% Filled VICTREX Compounds

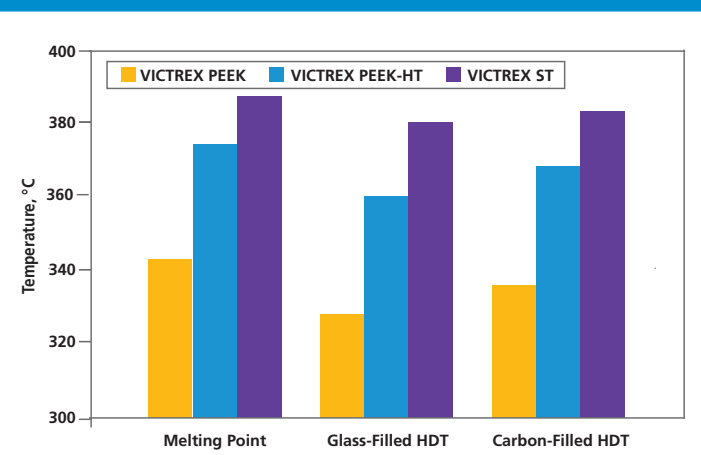
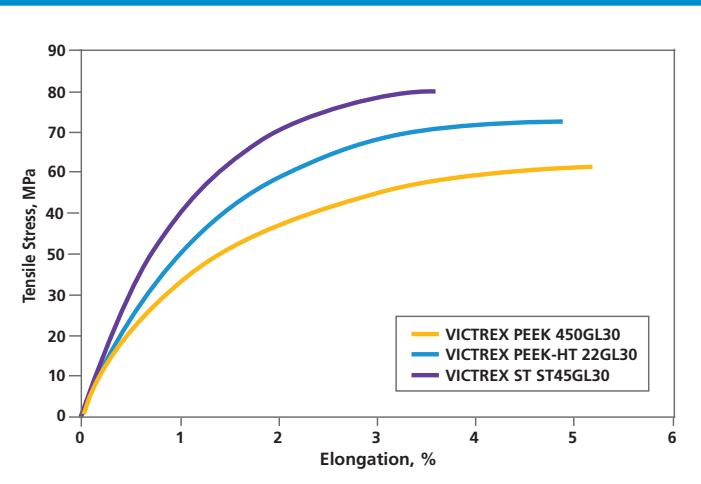


FIGURE 4: Tensile Stress-Strain Curves of VICTREX Glass-Filled Compounds at 175°C



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