



# VICTREX™ PEEK FOR USE IN FLUID MANAGEMENT

ENABLING STABLE OPERATION AND  
IMPROVED EFFICIENCY IN  
HYDRAULIC APPLICATIONS

# VICTREX™ PEEK IN HYDRAULIC APPLICATIONS — FLUID MANAGEMENT WITH CONFIDENCE

Making the right choice in material selection can be a game changer to ensure cost-effective and reliable operation in high-pressure hydraulic fluid exposed environment. VICTREX PEEK polymer is regarded as one of the highest-performing engineering plastics in the world and has successfully been used by industry leaders for more than 40 years in valves, poppets and plungers to meet ever-increasing requirements and help enhance hydraulics reliability, even under tough conditions.

Tight dimensional tolerances are a key requirement to ensure controlled leakage and reliable performance in demanding valve seat applications. With a proven track record in hydraulics and fluid control components, VICTREX PEEK polymer has been found to offer various benefits.

## OPTIMISED SEALING PERFORMANCE WITH TIGHT TOLERANCES



### Cost saving potential

up to 80% vs. machined stainless/carbon steel  
(applying closed loop sprue reusage)



### Consistent sealing performance over wide range of temperatures

stable material properties (e.g. ageing 5,000 hrs at 250°C) at a  
typical hydraulic temperature range of -40°C to 120°C



### Excellent compressive strength and wear properties

dimensional accuracy like metal – no swelling and thermal  
expansion similar to corrosive metals / aluminum housings



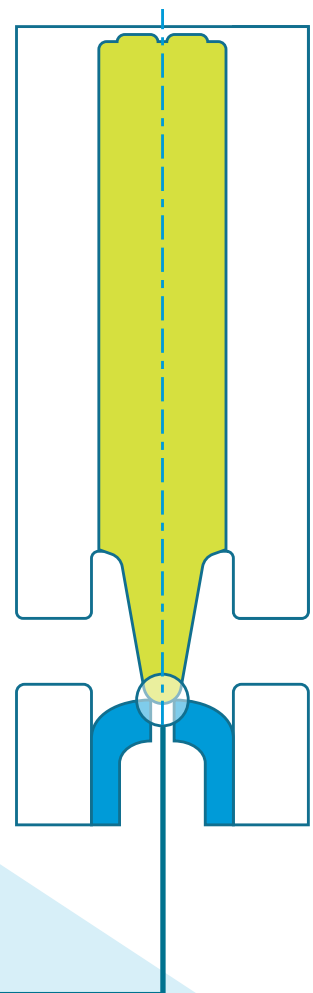
### Stable fluid management

within tight tolerances through increased contact  
surface vs metal, thus reduced sensitivity on surface defects /  
tolerances

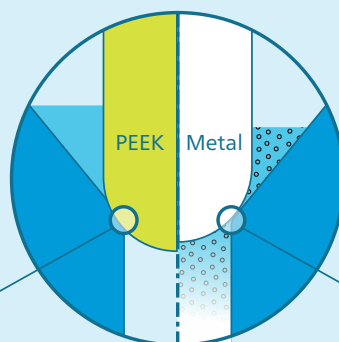
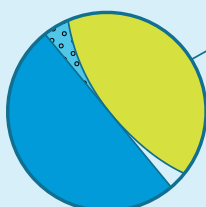


### Chemical resistance

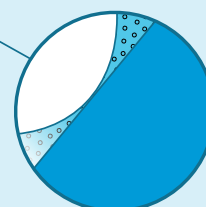
VICTREX PEEK is resistant to most hydraulic fluids\*  
and brake fluids



larger surface contact -  
improved sealing performance



smaller surface contact -  
leaking fluids



# VICTREX™ PEEK PRODUCT RANGE FOR USE IN HYDRAULIC APPLICATIONS



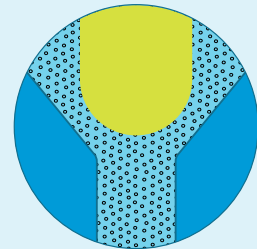
Every hydraulic application is different as the requirements for it vary. VICTREX PEEK polymers help achieve accurate and reliable flow rates for your valve system over a wide temperature and pressure range. Whether using a reinforced PEEK in a tappet or an unfilled grade in a valve seat – the Hertzian pressure in combination with the material’s mechanical strength and low water absorption allows for best-in-class performance over the component lifetime. With a stable performance in the most aggressive environments, Victrex products are dimensionally stable and a cost-effective solution to meet your needs and help you go the extra mile in hydraulic applications.

Whether your system uses normal open or normal closed valves, with its unique combination of properties the VICTREX PEEK product range allows the freedom to design an optimised, efficient and reliable system.

In addition, our team are the #1 experts in PEEK and happy to work with you from early concept stage to identify the right material for your application and maximise the value for you as a customer.

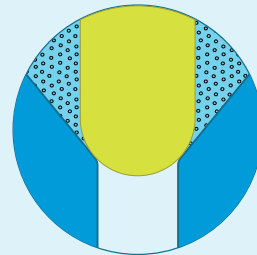
## VALVE NORMAL OPEN

Benefit from the high impact strength and wear resistance in a normal open valve. Constantly fast response times combined with very strong sealing properties even in a harsh environment.

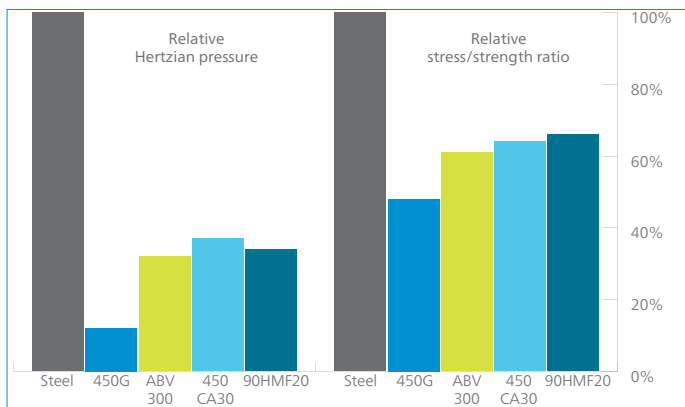


## VALVE NORMAL CLOSED

Very good compressive strength and long-term creep resistance will allow your system to constantly seal the fluid by applying a constant force.



	Compressive Strength (MPa) ISO640 Break 23°C	Tensile Modulus (GPa) ISO 570 23°C	Poisson ratio
Steel	520	210,000	0.3
VICTREX™ PEEK 450G™	125	4,000	0.38
VICTREX ABV™300	275	20,000	0.38
VICTREX™ PEEK 450CA30	300	25,000	0.38
VICTREX™ PEEK 90HMF20	270	22,000	0.38



## WHAT IS YOUR NEXT CHALLENGE?

[Contact us](#) to discuss your next hydraulic application development. Our team would be more than happy to support you.

Build Confidence Through Reliable, Proven  
and Cost-Effective PEEK-Based Solutions  
in Polymers, Forms and Parts

#1  
PEEK  
expert

40+  
years

of collaboration  
with market  
leaders along  
the value  
chain



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As a global high-performance polymer solutions provider, Victrex serves more than 40 geographies worldwide across the automotive, aerospace, medical, electronics, industrial and energy markets.

VICTREX™ PEEK is regarded as one of the highest-performing engineering thermoplastics in the world, and is used by leading companies to develop fuel-efficient automobiles and aeroplanes, advanced medical devices, next generation technology and tools for the harshest environments.

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