victrex

FLUID & GAS MANAGEMENT WITH CONFIDENCE

TAILORED VICTREX™ PEEK SOLUTIONS FOR HARSH APPLICATION ENVIRONMENTS

NAVIGATING THE CHALLENGES IN FLUID & GAS MANAGEMENT APPLICATIONS

In fluid & gas management, the margin for error is razor-thin. Whether you're dealing with aggressive chemicals, extreme temperatures, or high-pressure environments, the materials you choose can make all the difference between seamless operation and costly failures.

HARSH CHEMICAL ENVIRONMENTS: Exposure to aggressive chemicals, fuels, and solvents that can lead to corrosion or degradation.

HIGH-PRESSURE SYSTEMS: Components must withstand significant mechanical stress without deformation or failure.

WIDE TEMPERATURE RANGES: Operations often occur at both high and cryogenic temperatures, requiring materials that maintain performance across this spectrum.

RELIABLE PERFORMANCE: Components must perform reliably over extended periods, reducing the need for frequent maintenance and replacements.

REGULATORY COMPLIANCE: Industries like food processing require materials that meet strict safety and hygiene standards, such as FDA and ISO certifications.

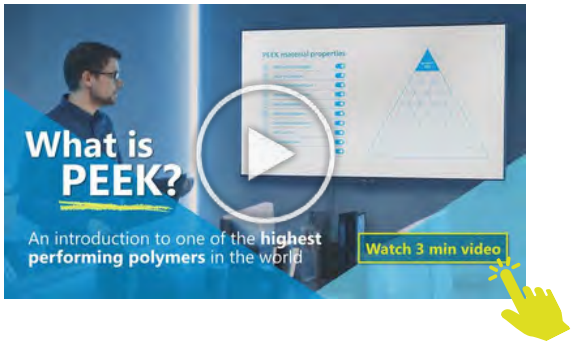
These challenges demand materials that can not only survive but thrive in extreme conditions. VICTREX PEEK polymers have a proven track record in addressing these issues, offering a combination of properties that are ideally suited to the rigorous demands in these application spaces.

VICTREX PEEK: A PROVEN MATERIAL FOR DEMANDING FLUID & GAS MANAGEMENT APPLICATIONS

VICTREX PEEK polymer is regarded as one of the highest-performing thermoplastic polymers in the world.

In fluid and gas management, PEEK is recognised for its dependable performance across a range of demanding conditions. Its resistance against chemical exposure, temperature extremes, and mechanical pressures makes it a solid option for engineers seeking to improve system reliability. VICTREX PEEK offers a unique combination of properties that help maintain efficiency and durability in critical applications.

Not familiar with PEEK?
Learn more in this video!



OPTIMISED SEALING PERFORMANCE WITH TIGHT TOLERANCES

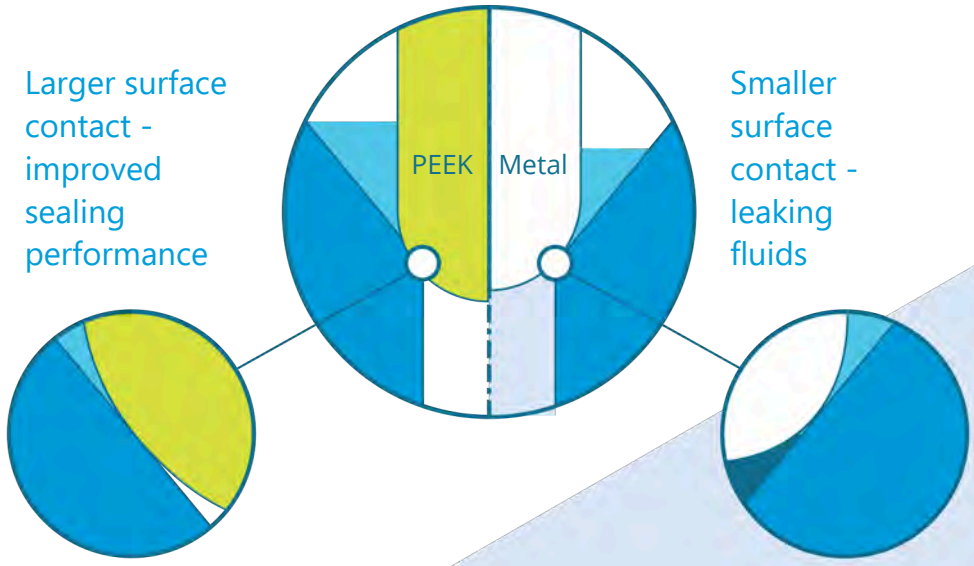
Cost saving potential
vs. machined stainless/carbon steel (applying closed loop sprue reusage)

Consistent sealing performance over a wide range of temperatures
from as low as cryogenic -269°C to as hot as 260°C

Excellent compressive strength and wear properties
enabling high pressure on a wider sealing surface and a large number of leak-tight open-close cycles - combined with dimensional accuracy and thermal expansion similar to corrosive metals / aluminum

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



VICTREX™ PEEK - A VERSATILE PORTFOLIO FOR ALL YOUR APPLICATION NEEDS

To address the full spectrum of requirements in fluid & gas management, Victrex offers a comprehensive product portfolio designed to provide the right solution for every application.

Whether you're working with extreme temperatures, high-pressure environments, or have the need for precise sealing, our range of high-performance PEEK polymer solutions is engineered to meet the specific demands of each component.

Our goal is to help you achieve improved efficiency, reliability, and durability in your systems - no matter the challenge.

VICTREX CT™ Polymers

Improved sealing in cryogenic conditions

The custom sealing material solution, designed and tested for performance in cryogenic environments offering more consistent and reliable sealing across a broad temperature range compared to fluoropolymers.

- Higher thermal conductivity permits a faster reaction to temperature changes allowing the seat seal to keep interference with the steel counter-surface at all time – contributing to more consistent sealing.
- Lower and constant coefficient of thermal expansion ensures more dimensional stability and minimises the shrinkage at low temperatures.
- Higher elongation vs. PCTFE coupled with comparable modulus results in more ductility across a wider range of temperatures; testing at -269°C to +150°C indicates better sealing capabilities which could also extend to higher temperatures in the range of +260°C depending on service conditions.
- VICTREX CT™ polymers meet the CRYO-PEEK specification for cryogenic ball valves in the latest Material and Equipment Standards and Code (MESC) by Shell

A dedicated product family that combines all the benefits of VICTREX PEEK, specifically designed to improve your cryogenic sealing

LEARN MORE ABOUT VICTREX CT POLYMERS

VICTREX™ PEEK AS110 Polymer

Precision sealing for controlled leakage performance

Key engineering requirements for sealing applications have become increasingly demanding. Selecting the right material is critical to cost-effectively ensure reliable operation in high-load, high-temperature spaces, improve efficiency and enable smooth assembly.

- The non-fibre filled, low melt viscosity VICTREX PEEK grade, designed to meet requirements in small to large diameter seal ring applications.
- Easy flow, low melt viscosity polymer, e.g. to allow for easy production of delicate designs and complex shapes
- Outstanding high, spring-like twisting flexibility, e.g. to reduce the risk of brittle fracture upon assembling
- Chemically resistant against a wide range of chemicals including ATFs.
- Excellent wear and frictional performance, even with low lubrication

All the common benefits of VICTREX PEEK, specifically designed to improve assembly and sealing performance - while being PFAS-free

DOWNLOAD OUR SEALING SOLUTIONS FLYER TO LEARN MORE

VICTREX FG™ 200 Polymer

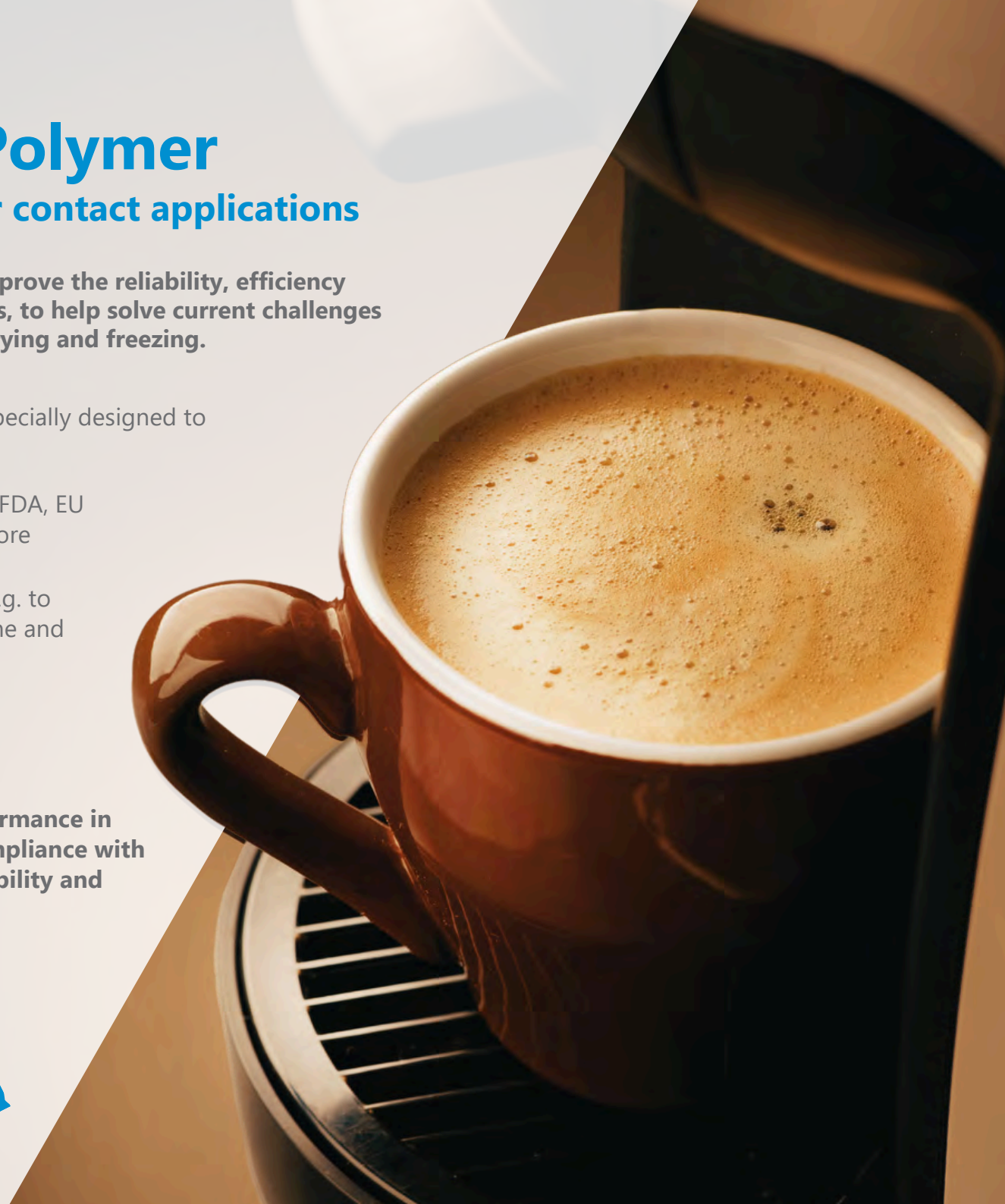
Trusted safety for food and water contact applications

Delivering high-performance solutions that can improve the reliability, efficiency and cost-effectiveness of food contact components, to help solve current challenges in processes from milling and mixing, to boiling, frying and freezing.

- Unfilled, food contact approved PEEK grade, especially designed to meet requirements in food contact applications
- Broad Food Contact Approval Certification, e.g. FDA, EU 10/2011, CN GB, SA Mercusor, JP MHLW and more
- High ductility, toughness and wear resistance, e.g. to minimise risk of brittle failure, machine downtime and product contamination
- VICTREX FG 200 polymers are PFAS-free

VICTREX FG Polymers offer safe and reliable performance in food and water contact applications, ensuring compliance with stringent safety standards while maintaining durability and effectiveness

LEARN MORE ABOUT VICTREX FG POLYMERS



VICTREX ABV™ 300 Polymer

Precision and reliability in the most critical application spaces

Some hydraulic applications call for well balanced material properties that offer reduced stiffness while maintaining dimensional integrity, temperature resistance and mechanical strength.

- VICTREX ABV 300 polymer is a reinforced PEEK, designed for use in applications that operate across a wide temperature range and require a combination of high strength and compressive creep resistance at lower stiffness compared to 30% reinforced carbon grades
- Proven track record in some of the most critical application spaces, e.g. solenoid valves in automotive ABS systems
- VICTREX ABV 300 polymer is PFAS-free

VICTREX ABV 300 fills the gap in between unfilled VICTREX 450G™ PEEK and carbon-fibre filled VICTREX PEEK 450CA30 for demanding hydraulic applications.

DOWNLOAD THE VICTREX ABV 300 DATASHEET

VICTREX™ PEEK 90HMF40 Polymer

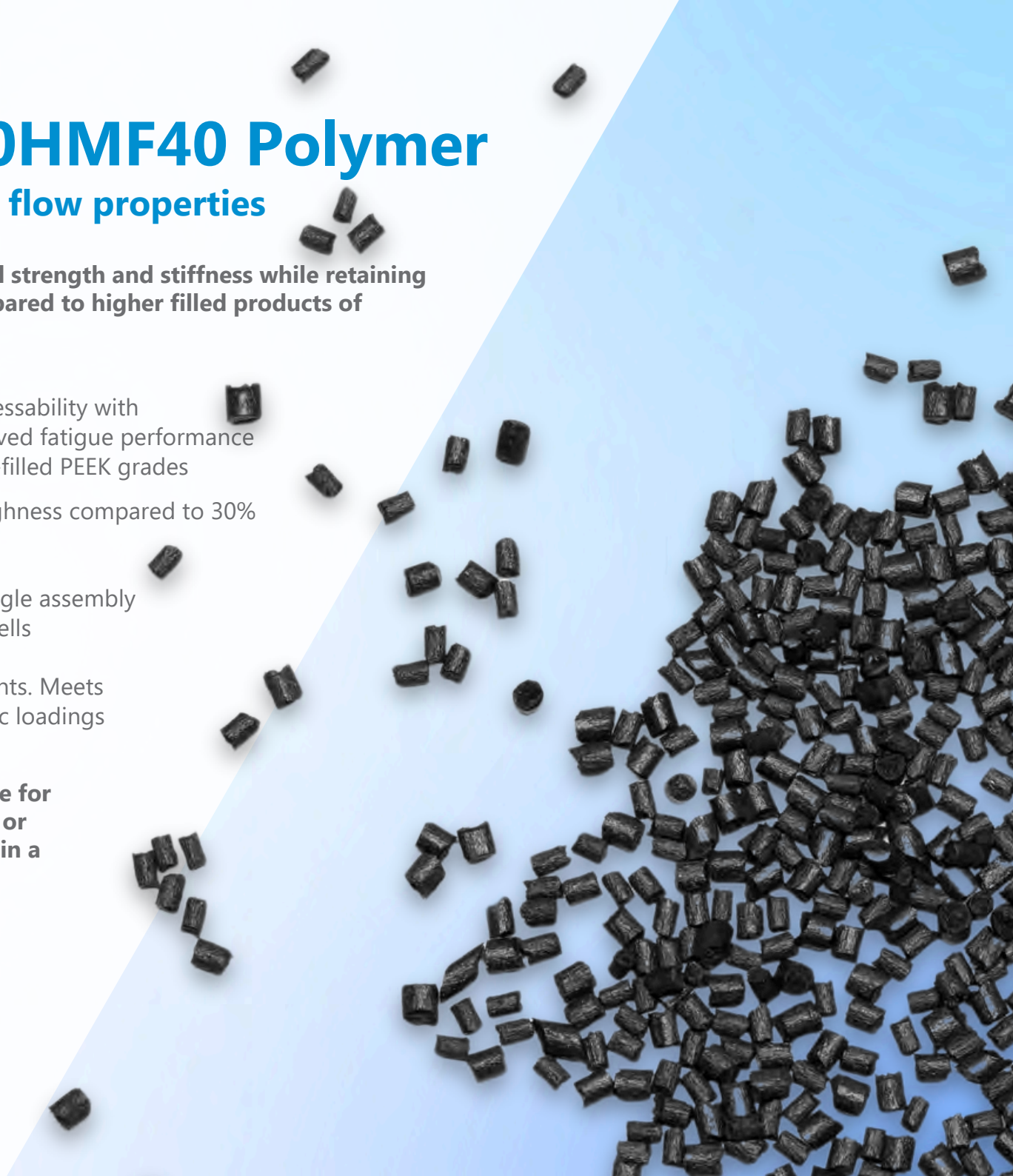
The strong performer with easy flow properties

Designed for applications that require improved strength and stiffness while retaining easy processability and improved ductility compared to higher filled products of equivalent performance

- VICTREX PEEK 90HMF40 combines easy processability with excellent mechanical performance and improved fatigue performance compared to standard high-strength, carbon-filled PEEK grades
- ~ 50% increase in strength, stiffness and toughness compared to 30% carbon filled standard grade
- Improved ductility, i.e. large strains during single assembly procedures as in split seal rings or bearing shells
- Chemically resistant to aggressive environments. Meets requirements for extended endurance in cyclic loadings

VICTREX PEEK 90HMF40 is the material of choice for complex geometries with thinner cross sections or longer flow length and offers superior strength in a static or dynamic systems.

DOWNLOAD THE 90HMF40 DATASHEET



FINDING THE RIGHT MATERIAL - QUICKLY AND EASILY

In the Technical Datasheet section on our website you can compare up to five different grades with their material properties side-by-side. This helps you find the right VICTREX polymer for your needs - quickly and easily.

COMPARE NOW!

MANAGE YOUR FLUIDS AND GASES WITH CONFIDENCE

TAILORED SOLUTIONS:
A comprehensive portfolio designed to meet diverse application needs, from high to cryogenic temperatures, from chemical to corrosion resistance, ensuring you get the right material for every project.

PROVEN PERFORMANCE:
Our PEEK and PAEK polymers have a demonstrated history of success in demanding industries, providing durable, reliable solutions that stand the test of time.

UNMATCHED EXPERTISE:
With 40+ years of experience in high-performance polymers, Victrex brings unparalleled knowledge and technical support to help you solve even the toughest material challenges.

SECURITY OF SUPPLY:
With the largest worldwide capacity in PEEK and a robust and reliable global supply chain, we ensure consistent access to the materials you need, minimising downtime and keeping your operations on track.

victrex

VICTREX IS COMMITTED TO SUSTAINABILITY

52% **Revenues from sustainable products**
(products offering a quantifiable environmental or societal benefit)

88% **R&D project investment focused on sustainable products**

100% **Renewable electricity across all Victrex global locations**

38% **Reduction in hazardous waste disposed to landfill (after treatment) vs FY2023**

4% **Reduction in Scope 1, 2 CO_2 emissions vs FY2023**

Aligned to UN Sustainable Development Goals 2030

LEARN MORE ABOUT OUR SUSTAINABILITY STRATEGY

WHAT IS YOUR NEXT CHALLENGE?

Contact us to discuss your next fluid or gas application development.

Our team is just a click away and would be more than happy to discuss your requirements and support you.

CONTACT US DIRECTLY!



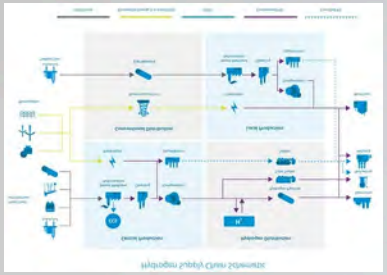





MORE INFORMATION RIGHT AT YOUR FINGERTIPS

If you want to learn more, here's some more information you may find useful - tap or click to explore

WHITEPAPER: Improving cryogenic valve performance with VICTREX CT™ 100 polymer sealing systems



BLOG: The future of hydrogen: Why VICTREX PEEK is anticipated to support energy transition to hydrogen

WHITEPAPER: 3 things to consider for reliable, regulatory-compliant food contact applications

BLOG: Tribology – The science of friction and wear and why VICTREX PEEK is wear-resistant

WHITEPAPER: Accelerating the energy transition: Applications of VICTREX PEEK Polymers in hydrogen infrastructure

BLOG: 5 factors to consider when moulding PEEK

EXPLORE MORE RESOURCES

victrex

WORLD HEADQUARTERS

Victrex plc
Hillhouse International
Thornton Cleveleys
Lancashire FY5 4QD
United Kingdom

TEL + (44) 1253 897700

AMERICAS

Victrex USA Inc
300 Conshohocken State Road
Suite 120 West Conshohocken,
PA 19428 USA

TEL + (1) 800-VICTREX
TEL + (1) 484 342 6001

EUROPE

Victrex Europa GmbH
Langgasse 16
65719 Hofheim/Ts.
Germany

TEL + (49) 6192 96490

JAPAN

Victrex Japan, Inc.
Mita Kokusai Building
Annex 4-28, Mita 1-chome
Minato-ku
Tokyo 108-0073
Japan

TEL + 81 (0)3 5427 4650

CHINA

Victrex High-Performance
Materials (Shanghai) Co Ltd
Part B Building G
No. 1688 Zhuanxing Road
Xinzhuang Industry Park
Shanghai 201108
China

TEL + (86) 21 6113 6900

SOUTH KOREA

Victrex Korea
14th floor Superior Tower
528, Teheran-ro
Gangham-gu
Seoul 06181
Korea

TEL +(82) 2 2182 1200

Follow us on social media!

or visit our website: victrex.com

VICTREX™, 450G™, CT™, FG™, ABV™, and the Triangle Device are trademarks of Victrex and its group of companies.

About Victrex
Victrex is an innovative world leader in high performance polymer solutions, focused on the strategic markets of automotive, aerospace, energy (including manufacturing & engineering), electronics and medical. Every day, millions of people use products and applications, which contain our materials – from smart phones, aeroplanes and cars to oil and gas operations and medical devices. With over 40 years' experience, we develop world leading solutions in PEEK and PAEK-based polymers, semi-finished and finished parts which shape future performance for our customers and our markets, and drive value for our shareholders. Find out more at www.victrex.com

© Victrex plc 2025

Victrex-Enterprise-ebook-Fluid&Gas-Management-EN-04-2025