

# ADVANCE. MATERIALLY.

**Victrex** offers the world's most versatile structural polymer available enabling innovative hardware designs for the **ultimate user experience**



## Consumer Electronics

**VICTREX® PAEK high performance polymers offer greater versatility, reliability and design freedom for next generation electronic devices.**

Material advancement is critical in today's fast-paced electronics market. Technology continues to push the limits of extreme engineering, especially in mobile devices, to get **thinner, lighter and smarter**. Demands for higher structural integrity, reliability, and mobility as well as concerns about the environment, are all shaping the way electronic components are designed. OEMs and brand owners are specifying Victrex high performance polymers including VICTREX® PEEK and APTIV® films to reach new levels of performance and differentiate their products with innovative solutions.

## Lightweight polymers for high-tech solutions

Victrex products provide an exceptional combination of benefits including high stiffness- and strength-to-weight ratio, wear, chemical and creep resistance, and processing flexibility as well as dimensional stability, low outgassing, radio transparency, low moisture absorption, and high temperature resistance. They also provide environmental and regulatory advantages as they readily meet the demands of lead-free solder processes while being fully recyclable and naturally flame retardant without the need for toxic additives.

From mobile device enclosures, switches, circuit boards, batteries and audio speakers to printers, copiers, sensors and connectors, Victrex PAEK-based products are increasingly being specified by leading electronics companies as a metal replacement or hybrid solution for enhanced performance and design.

## TRENDS IN MOBILE DEVICES



Portable media devices getting **thinner, lighter, smarter**

**Increased daily use** of portable products demands reliability

**Premium, clean look**  
Anodising enables bold new look (colours) and feel along with durability of the chemical process-treated surface.

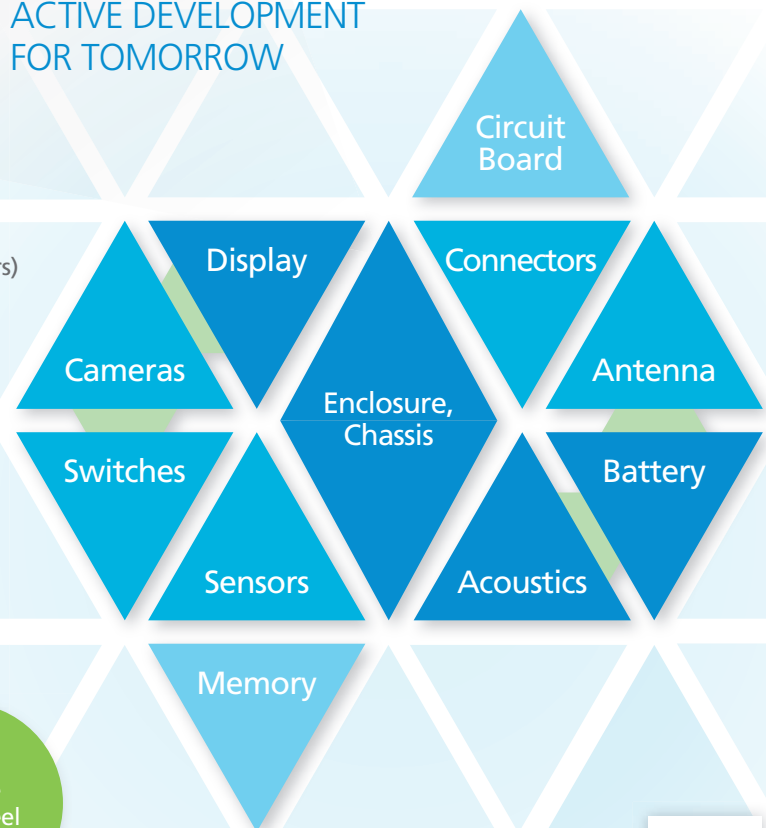
Sound **quality** and **clarity** enhances user experience and drives satisfaction

**Ultimate sensory experience**  
sight, sound, touch... context based apps

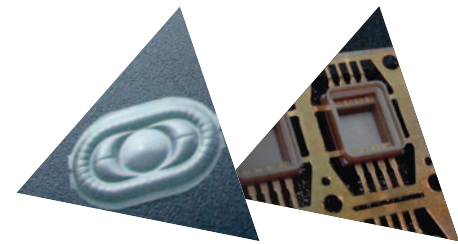
**Pace of innovation**  
rapid development and shorter lifecycles require quicker response from supply chain

## PROVEN SUCCESSES TODAY...

### ACTIVE DEVELOPMENT FOR TOMORROW



PROVEN SOLUTION



**Acoustics**

APTIV® acoustic film technology for mobile devices offers excellent acoustic performance with unparalleled reliability. The nature and range of APTIV® acoustic products offers acoustic engineers design flexibility where high quality sound is required in small space applications.

**Electromechanical Components**

Metal enhancement: VICTREX® PAEK overmoulded designs enable intricate geometries with watertight sealing for long term durability

**Requirements**

- Superior modulus and strength
- Adhere to metals, survive anodising
- Dielectric stability, radio translucent

**Victrex benefits**

- Match metal rigidity with less weight
- Durable in extreme environments
- Stronger antenna signals

FROM CHALLENGES TO BENEFITS

	PPA	PPS	PBT	VICTREX® PAEK
High Strength and Stiffness	●	●		●
Metal Adhesion	●	●	●	●
Impact Strength	●			●
Anodising Resistance		●	●	●
Hot Runner Moulding	●		●	●

**Enable new look and feel**

- Polymer withstands anodising and dye process for durable metal colours
- Black color film and tapes with matte/gloss options

**Streamline manufacturing**

- Fast cycling, hot-runner or closed-loop recycle to minimise waste
- Multi-part overmoulding onto metals for uni-body construction
- Adhesiveless joining with laser weld (moulded part-to-film)

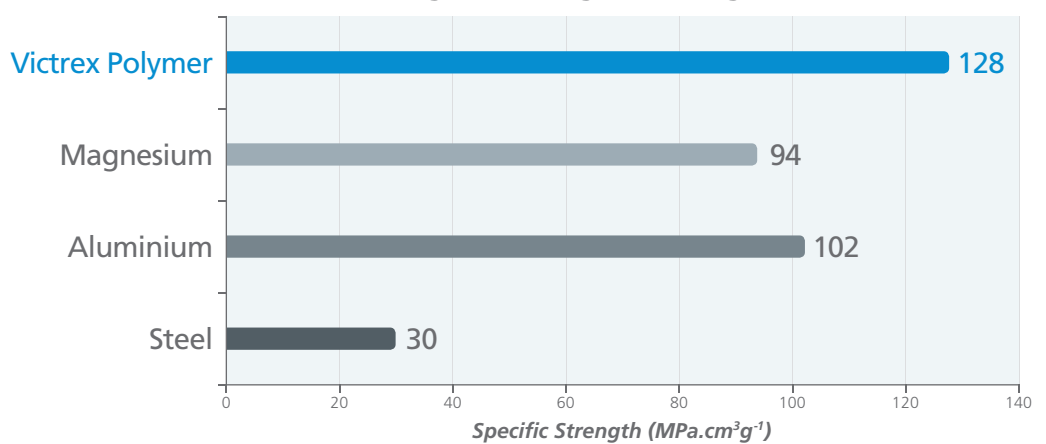
**Design to the extreme**

- Optimise design, synergise with metal, then anodise after
- Hybrid structures with localised reinforcements
- Best combination of stiffness, strength and toughness for thin-wall moulding

METAL HYBRID SOLUTION



**Highest strength-to-weight ratio**



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