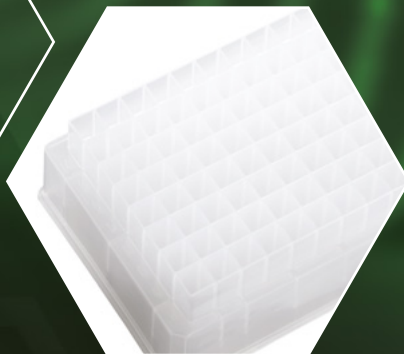
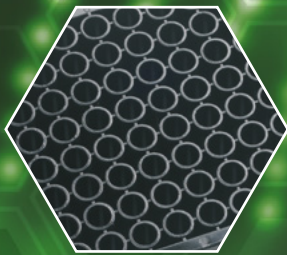
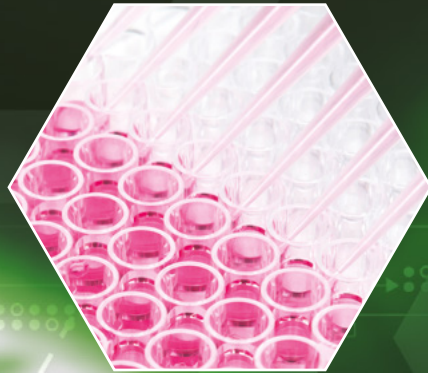


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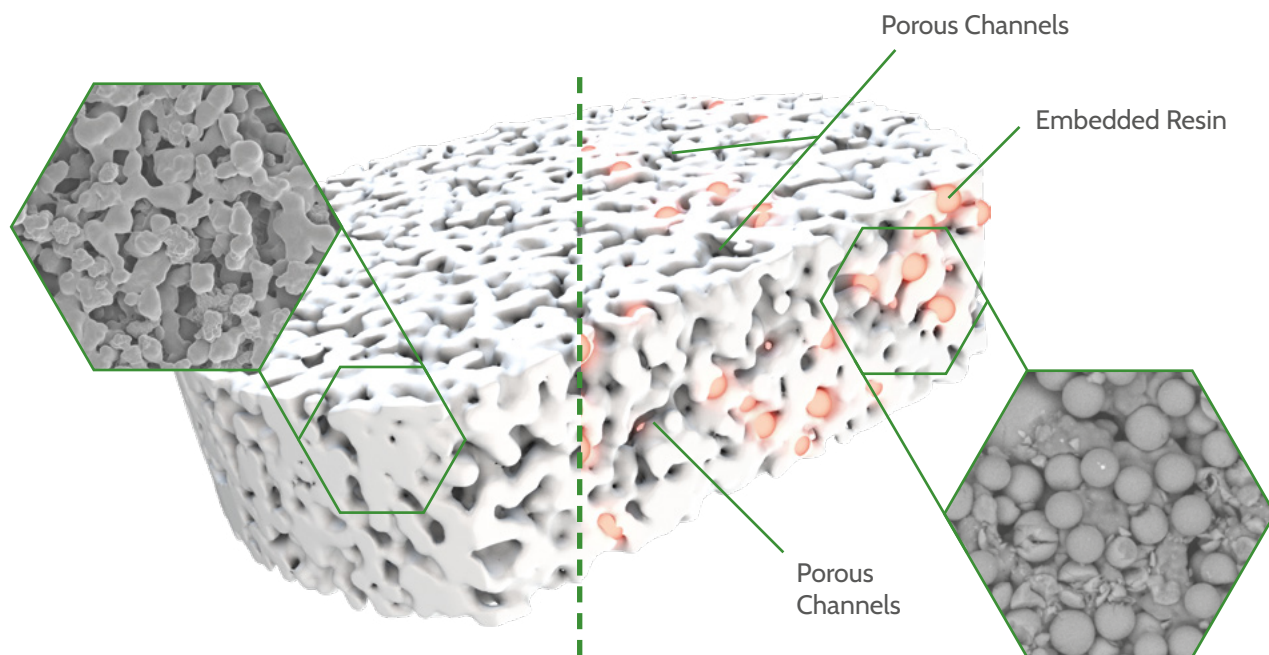
# Microlute<sup>®</sup> CSi



# Microlute® Composite Technology

The Microlute® technology features a robust porous plastic structure that contains chromatographically active media immobilised within uniformly distributed pores. This porous hybrid structure allows for greater controlled flow of samples when performing cleanup methods such as SPE. Controlled flow of sample through the active media maximises removal of contaminants, recovery of analytes with greater reproducibility. Microlute® gives you consistency and confidence in your sample preparation method each and every time.

## One Structure, Multiple Advantages



## Features & Advantages

### Rigid Structure

The composite filter is made from sintered porous plastic to form a rigid, inert structure, an ideal foundation for sample clean-up and extraction.

### Porous Channels

The interconnected pores form pathways that are evenly distributed across the composite to allow controlled flow of liquids and gases throughout the material.

### Embedded Resin

Chromatographically active resins are embedded evenly throughout the porous structure to maximise interactions between analytes and capture media.

Enhanced Reproducibility and Reliability

# Microlute® CSi | Composite Silica SPE

Silica-based solid phase extraction (SPE) is an established and widely-used form of SPE used in analytical laboratories. Due to its unique selectivity, silica SPE has emerged as the predominant technique for a diverse array of applications over the years. This familiarity and understanding are in part due to the similarities between the silica SPE process and High Performance Liquid Chromatography (HPLC). In essence, the SPE procedure employing silica mirrors that of an HPLC column, thus making it an ideal and coherent choice for sample preparation prior to HPLC analysis.

## Phases:

Reversed Phase (RP)

Strong Cation Exchange (SCX)

Strong Anion Exchange (SAX)

Weak Cation Exchange (WCX) - Coming Soon

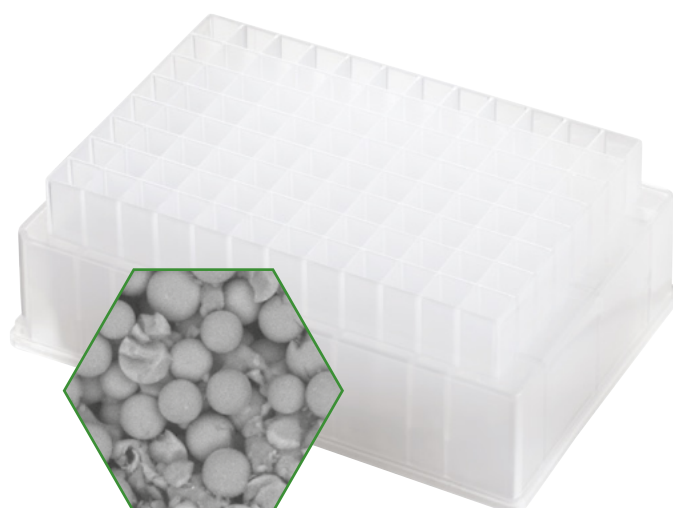
Weak Anion Exchange (WAX) - Coming Soon

**Formats:** 96 well microplates

**Bed Weight:** 2 mg/well, 10 mg/well

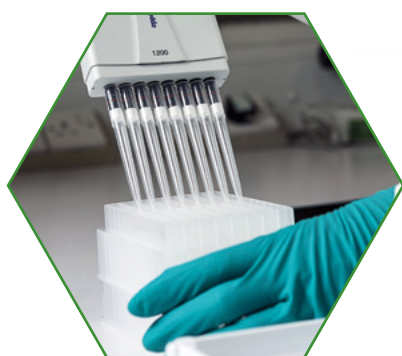
**Analysis:** UHPLC, HPLC, GC, LCMS, GCMS

**Applications:** Drug discovery, drugs of abuse, forensic testing, genomics & proteomics, soil and water analysis, cosmetic quality control.



## Key Advantages of Microlute® CSi

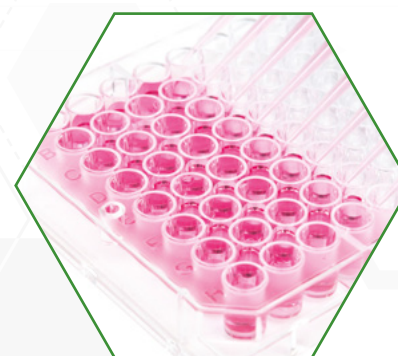
The Microlute® CSi uses a unique composite technology designed to streamline and enhance sample clean-up, ensuring both efficiency and reliability throughout sample preparation. This exciting and innovative technology combines a robust yet porous polymer structure with the versatile properties of silica, resulting in an SPE method that is effortless and reliable.



**Improved Reliability and Reproducibility**



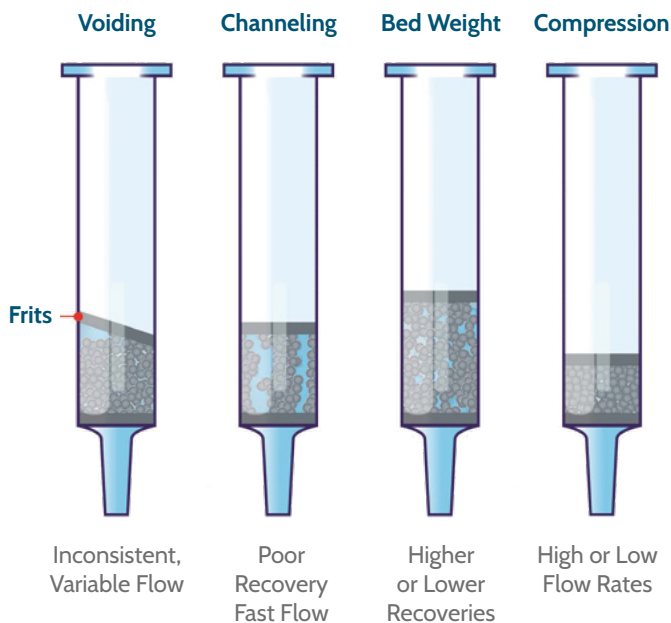
**Enhanced Selectivity and Specificity**



**Perfect for microSPE**

## Challenges with Loose-packed Methods

In SPE, loose-packed formats are traditionally used for sample preparation and are often associated with poor and inconsistent flow rates. This is largely due to the inherent problems with packing of loose particles (over-compression, under-compression, inconsistent bed weight, and voiding) in wells and cartridges.

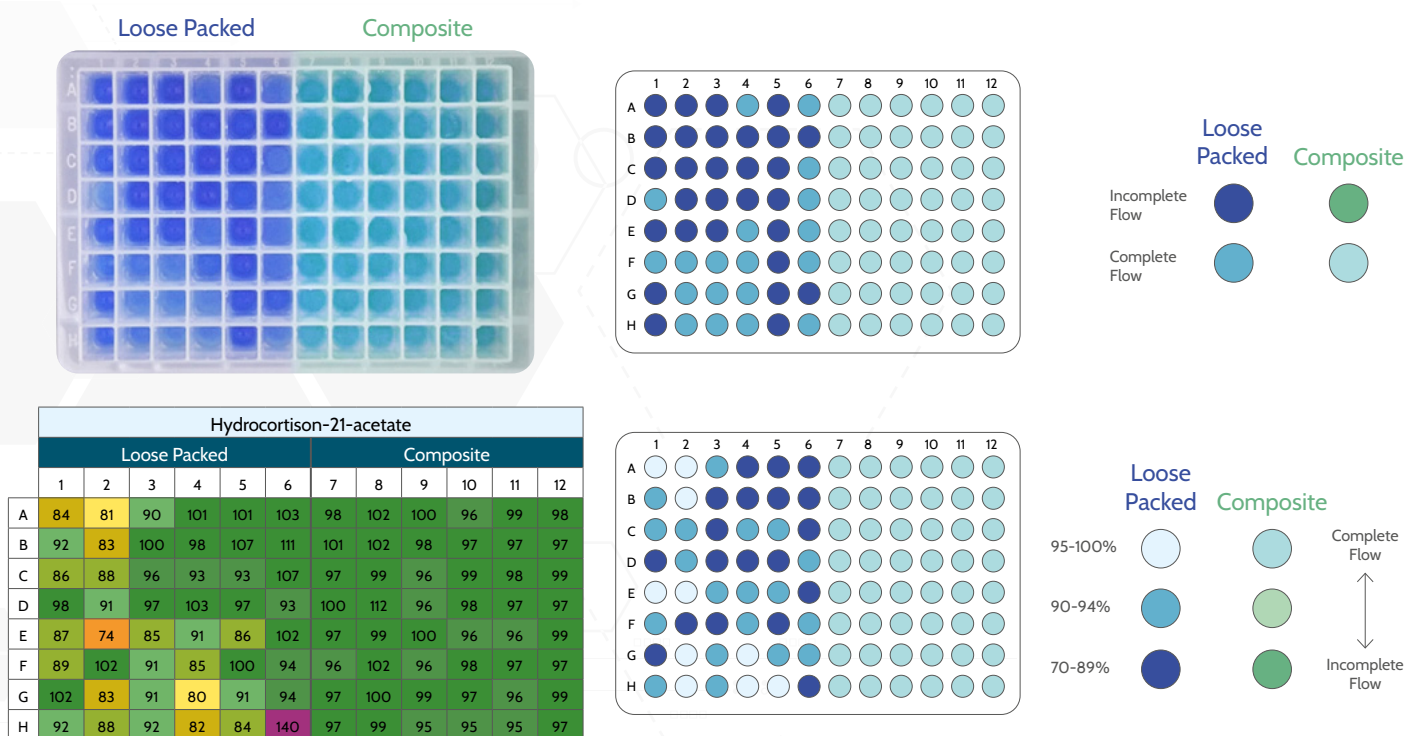


Replacing loose particles with a single hybrid structure is a key step forward in improving performance of sample preparation methods. The interconnected network of evenly distributed pores allows liquids to flow smoothly and consistently through the filter.

For methods such as SPE, this open structure enhances interactions between the active solid phase and samples for maximum removal or retention of analytes.

## Uniform Flow Through

The image below illustrates a key advantage of composite-based silica SPE, the consistent and uninterrupted flow of samples. In this example, the Microlute® CSI C18 96-well plate ensures that samples flow seamlessly and consistently through every well compared to the loose-packed method. Achieving uniformity and complete sample flow across either partially filled or fully loaded plate enhances analyte recoveries, reduces processing time, and optimises use of reagent resources.



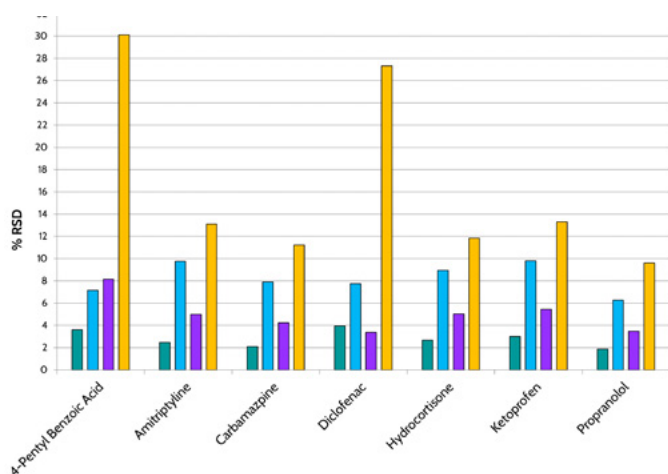
## Enhanced Reproducibility & Reliability

The Microlute® composite technology improves the consistency of analyte-media interactions and therefore reduces the need for repetitive preparations, without altering the parameters or performance.

The data below shows an improvement in reproducibility compared to popular loose-packed methods, and the effective recovery of analytes. This improved reproducibility also allows lower elution volumes (less solvent use) to be used to obtain a representative sample preparation.

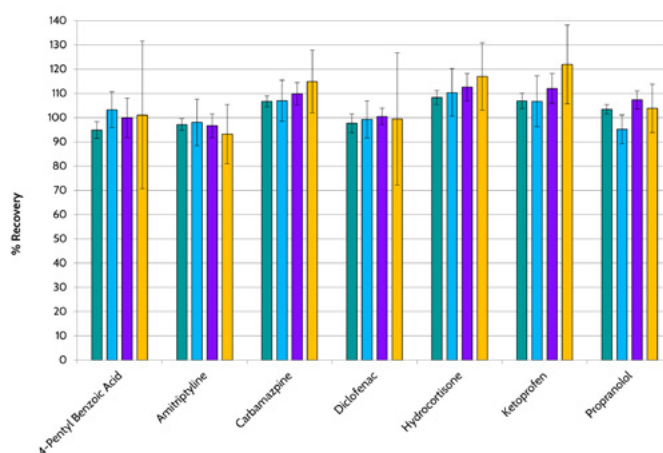
Legend ■ Microlute® Composite ■ Competitor A ■ Competitor B ■ Competitor C

### Market Leading Reproducibility



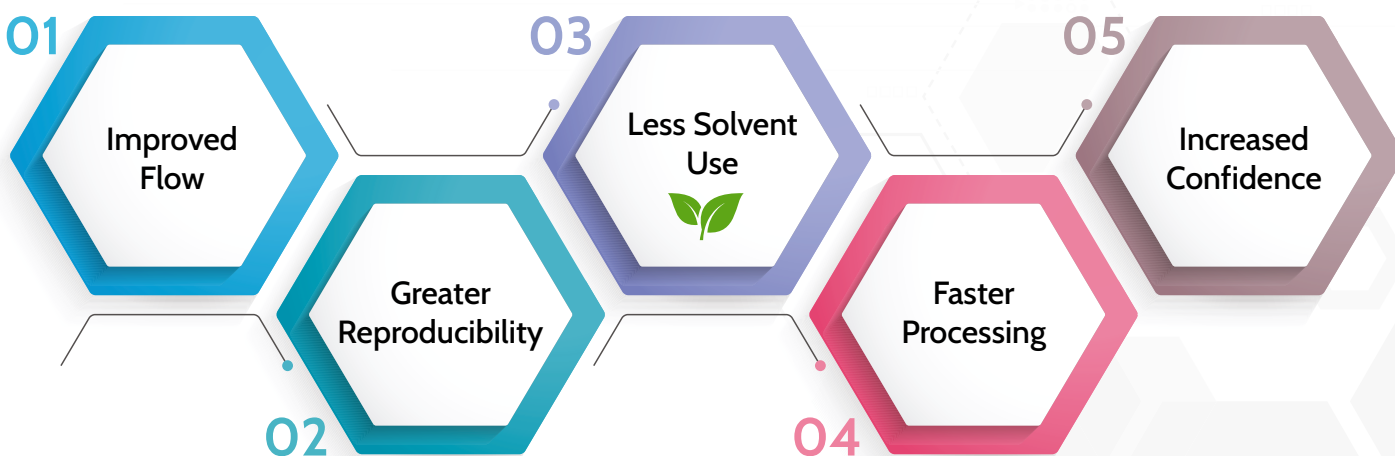
Less than 4% RSD for reliable contaminant removal (eg. phospholipids) and analyte recovery first time and every time.

### Maximum Recovery



Greater than 90% recovery with high levels of reproducibility for a wide range of acidic, basic or neutral analytes.

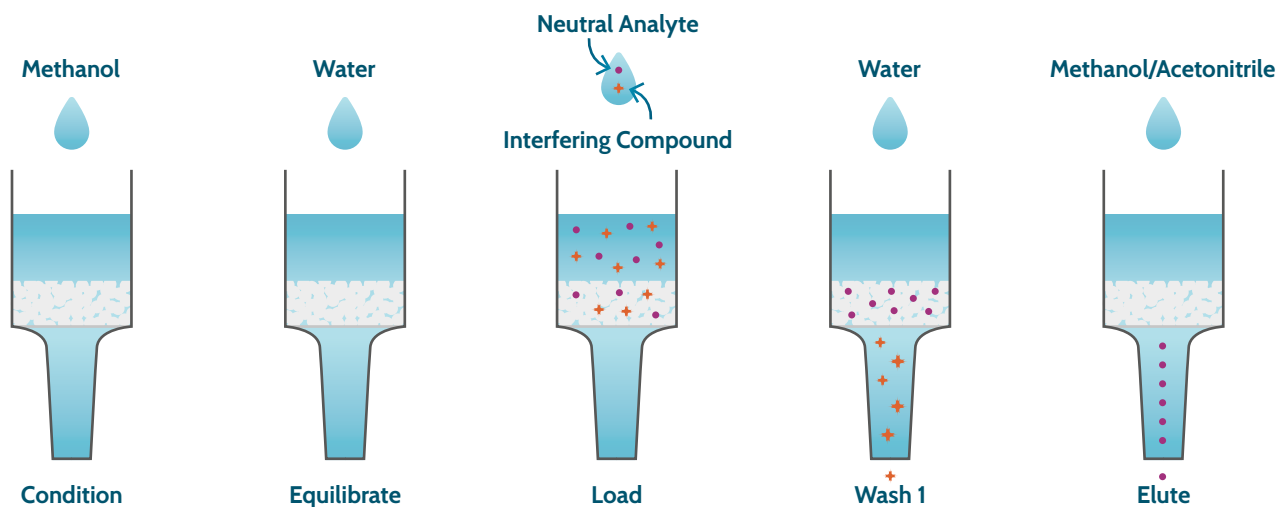
## Workflow Advantages



### Did You Know?

The silica composite not only enhances the efficiency of sample clean-up methods but also contributes to a reduction in solvent usage. The Microlute® technology ensures optimal analyte recoveries while eliminating unnecessary repetition that leads to wasteful practices. Start your sample preparation workflow with an environmentally conscious approach with Microlute® composite technology for a greener and more efficient process!

## Effortless Switch to Composite



Transferring your existing method from loose-packed to the composite is easy. Simply continue to use your existing method with Microlute® CSi products.

## Microlute® CSi Chemistries

	Microlute® CSi		
	C18	SCX	SAX
Retention Mechanism	Reversed Phased	Strong Cation Exchange	Strong Anion Exchange
Analyte Retention	Non-ionic, nonpolar to moderately polar analytes	Ionic, basic analytes	Ionic, acidic analytes
Base	Silica	Silica	Silica
Ligand	C18	Aromatic sulphonic acid	Quaternary amine

Whether you're new to SPE or looking to improve your method, we will be there to support you!  
*Get in touch with our chromatographers by emailing [technical@porvairsciences.com](mailto:technical@porvairsciences.com).*

## Sample Preparation Collection

- Microlute® PLR for phospholipid removal
- Microlute® PPP for protein precipitation
- Microlute® SLE for supported liquid extraction
- Deep well microplates for sample collection, handling and storage
- Ultraseal™ range of adhesive and heat sealers for sample protection and storage
- Ultravap® range of blowdown evaporators for sample concentration

See ordering table on page 8 for more information or check out [www.microplates.com](http://www.microplates.com) to learn more.

## OEM & Custom Manufacturing

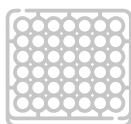
Partner with us to turn your idea into innovation. As manufacturers with over 70 years experience collaborating and creating products and technologies for our customers, we invite you to get in touch to discuss your requirements with us. Our expertise in microplate technologies, porous plastic manufacturing and instrumentation allows us to offer you a wide range of capabilities including our very own Microlute® composite technology, all in one place.

Start your journey by emailing us at [hello@porvairsciences.com](mailto:hello@porvairsciences.com)

## Our Technologies



Porous Plastics



Microplates



Instrumentation & Automation



## Our Expertise



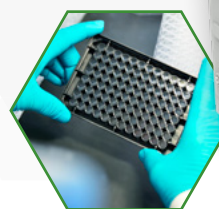
Research & Development

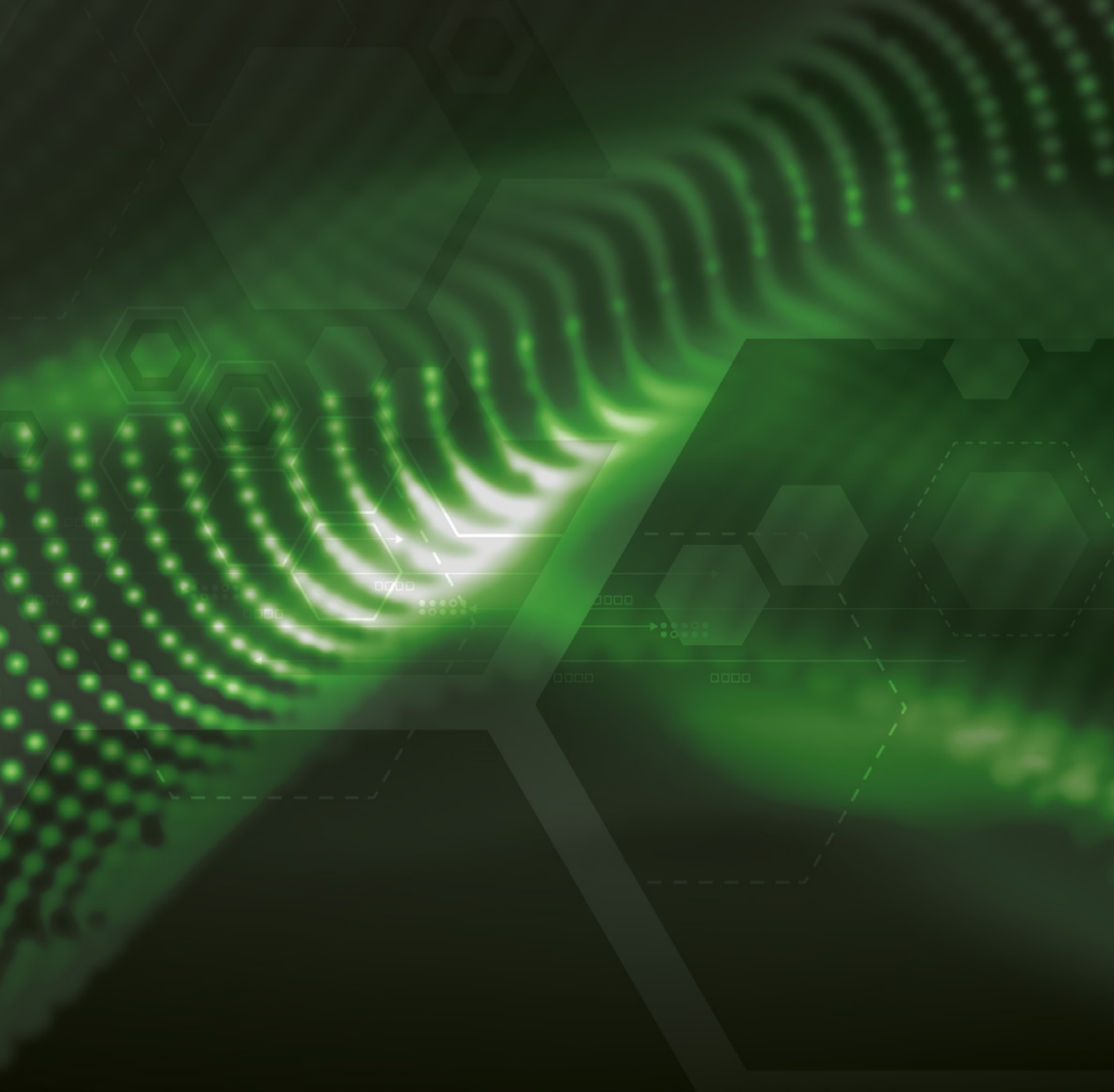


Design & Engineering



Customer Service





**porvair**  
sciences

**qm**<sub>x</sub>

**QMX Laboratories Limited Thaxted Essex CM6 2PY +44 (0)1371 831611 sales@qmx.com**

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