

microsystems  
precision medical moulds



# PRODUCT EXAMPLES

Your trusted turnkey ultra-precision  
tooling and injection moulding partner

[www.microsystems.uk.com](http://www.microsystems.uk.com)

# Welcome to Our World of Mould Tooling and Moulding Excellence

With over 20 years of expertise in mould making and injection moulding, Micro Systems offers a wide range of custom services, from mould design, mould manufacture, FAT and validation of prototype to multi-cavity mould systems, through to mass-production supply of moulded components for the **Medical & Pharmaceutical, Ophthalmic, Biotech, Diagnostic** and other Industrial markets.

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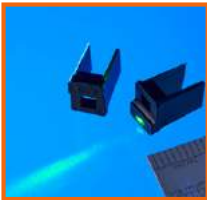


# SECTORS



## MEDICAL & PHARMACEUTICAL

Mould tooling and injection moulding for medical components, in ISO Class 7 cleanrooms and on-site medical injection moulding facility.



## OPHTHALMICS

Ultra-precision ophthalmic micro moulds or moulded parts with high quality consistency for various purposes. Products include lenses, contact lenses, blisters, etc.



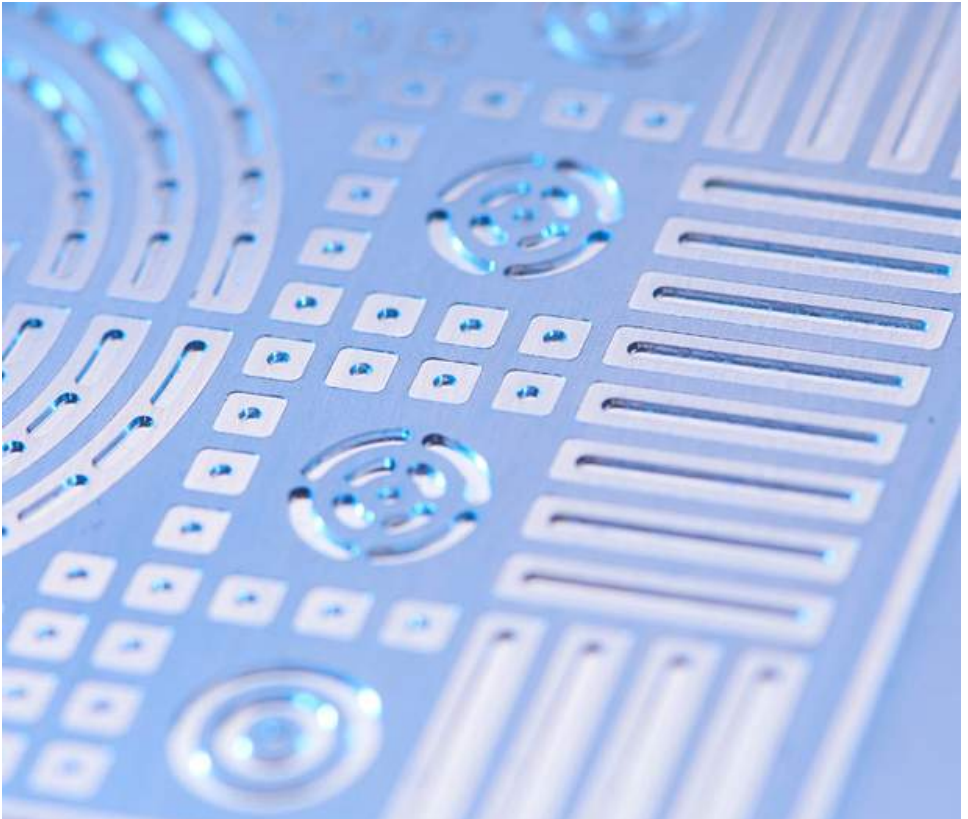
## DIAGNOSTICS

Precision micro moulding for Point-of-Care diagnostic devices, including microfluidics and lab-on-a-chip with channels down to 30 microns.



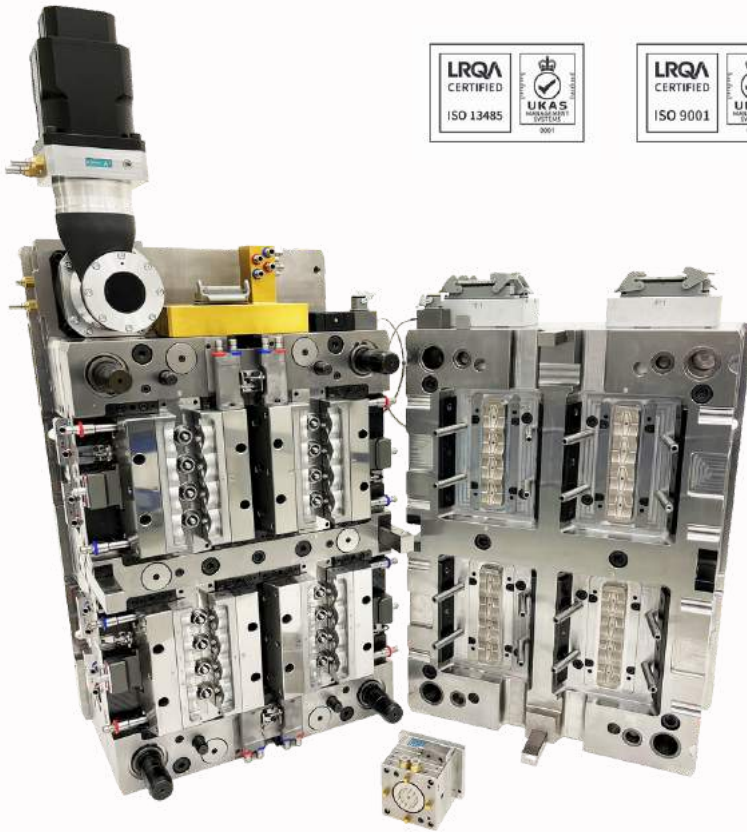
## OTHER SECTORS

Customised mould tooling and injection moulding solutions, from design development to delivery, for other markets including Packaging, Automotive, Aerospace, FCMG, etc.



## MOULD TOOLING

**Micro Systems** has more than 20 years of experiences in the design, manufacture and validation of ultra-precision mould tooling. We have clean, temperature-controlled facilities with advanced technologies in the UK and Singapore to meet the growing global demand for the production of fully-validated ultra-precision components and complex tooling for moulding facilities.



## MEDICAL DEVICE MOULD TOOLING

Micro Systems provides turnkey solutions for ultra-precision medical mould design and manufacture, pilot to full production mould validation. Typical component sizes range from 0.0003g - 2.5g for micro components, or up to few hundred grams for medical device components. On-site production in clean, temperature-controlled manufacturing environment. ISO Class 7 cleanrooms available.

*Product:* **Drug delivery system** (micro needle, injector pen, auto injector pen, soft mist inhaler), **Medical Micro** (PEEK bone implants), **Surgical components**, etc.



## Ophthalmics & Lens moulds

Single-cavity to multi-cavity optical moulds with demanding toricity tolerances, nanometer scale features, and high volume.

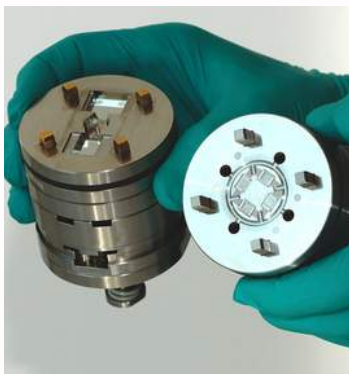
*Product: IOL lens casts, Contact lens casts, Blister packaging, Micro fresnel lens, etc.*



## Diagnostic device moulds

Ultra-precision moulds for microfluidic channels down to micro-/nano- scale. 10 - 50 microns in size.

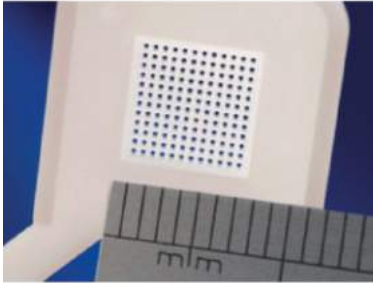
*Product: Droplet Generation chips, Microfluidics chips, etc.*



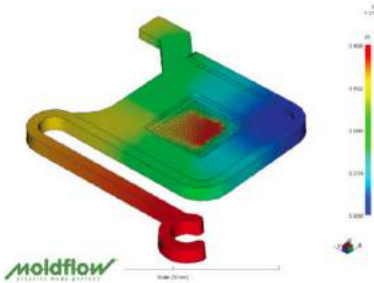
## Customised mould tooling

Mould tooling design, manufacture and validation for bespoke complex applications such as 2-shot and micro moulding.

## MOULD DESIGN



Experienced in-house design teams using the latest design softwares like Siemens NX 3D CAD and 3D Moldflow. Our capabilities range from single cavity prototype through to 32-cavity. Design for long mould life. Quick mould change design available.



- Single cavity prototype
- 2-4 cavity pre-production moulds
- 2-material moulds
- 8-32 cavity full production moulds

## MOULD MANUFACTURE

In-house ultra-precision machining for complex, moulds, from prototyping to multi-cavity moulds:

- Micro Milling
- Grinding
- Micro EDM & Wire EDM
- Advanced machining techniques



# PLASTIC INJECTION MOULDING

Micro Systems specialises in plastic injection moulding for extremely small and precise parts, with accuracy down to a fraction of a micron, and surface finish of less than 10 nm. We work with various types of materials, including PEEK, COC, COP, PMMA, PBT, from prototype to small and mass production.

- 2-shot Moulding
- Micro Moulding
- Implantable/Bioabsorbable Material Moulding
- Insert Moulding
- Over Moulding





# MICRO MOULDING SPECIALIST

We utilise many ground breaking techniques to solve complex micro-manufacturing problems and significant progress is being made as we move from micro to nano manufacturing.



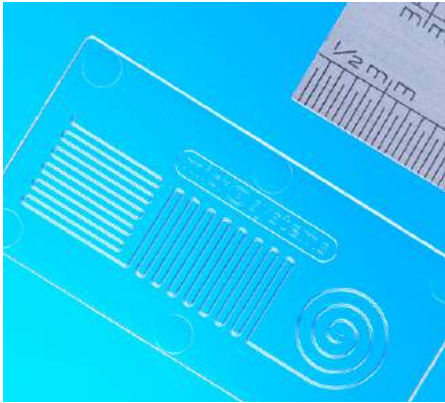


## MICROFLUIDIC CHIPS

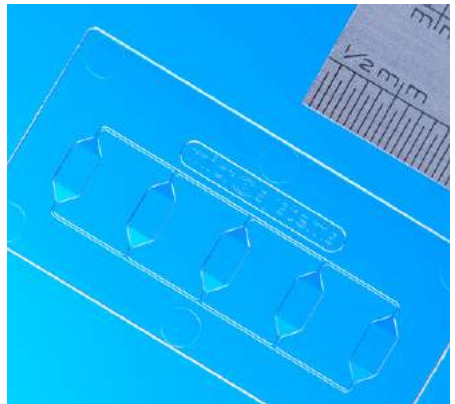
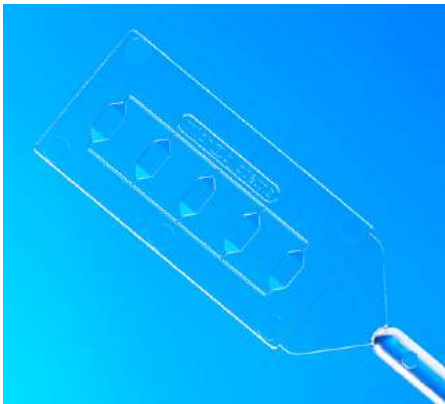


## SMALL CHANNELS MICRO FEATURES INTEGRATED OPTICS

- Filtration, Mixing, Droplet Generation features
- Low, Medium, High-volume production moulding
- Optical chambers  $< 20 \text{ nm Ra}$
- 10-50 micron typical feature size, 0.5 micron repeatable accuracy
- ISO Class 7 Cleanrooms



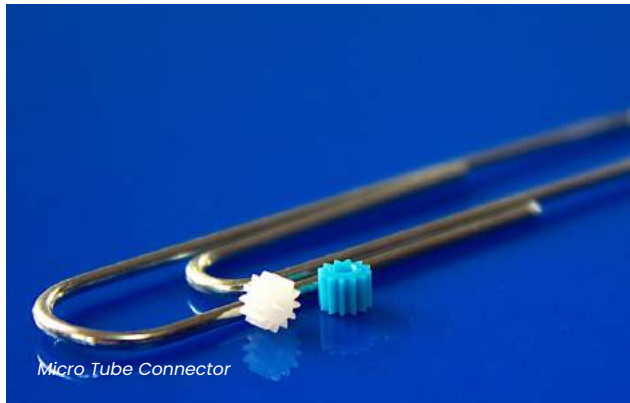
# MICROFLUIDIC CHIPS



# MICRO INJECTION MOULDING



Micro Nozzle



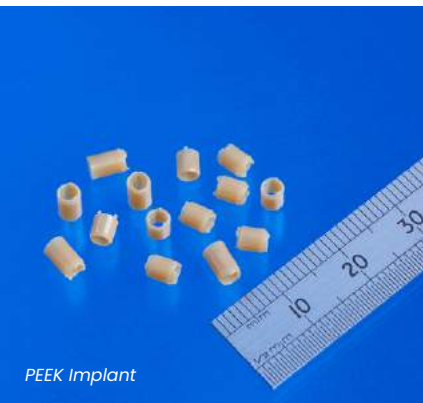
Micro Tube Connector



Electrode housing for pacemaker



PEEK Bone Implant



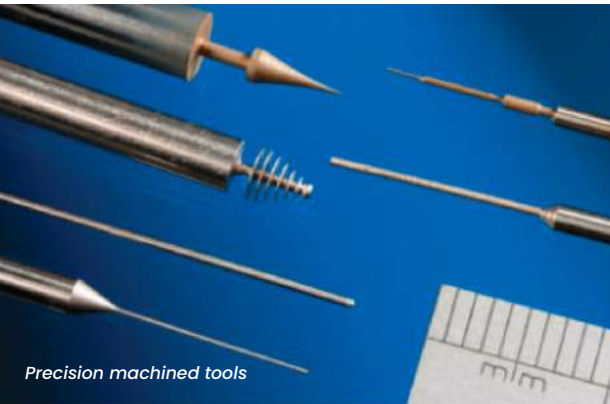
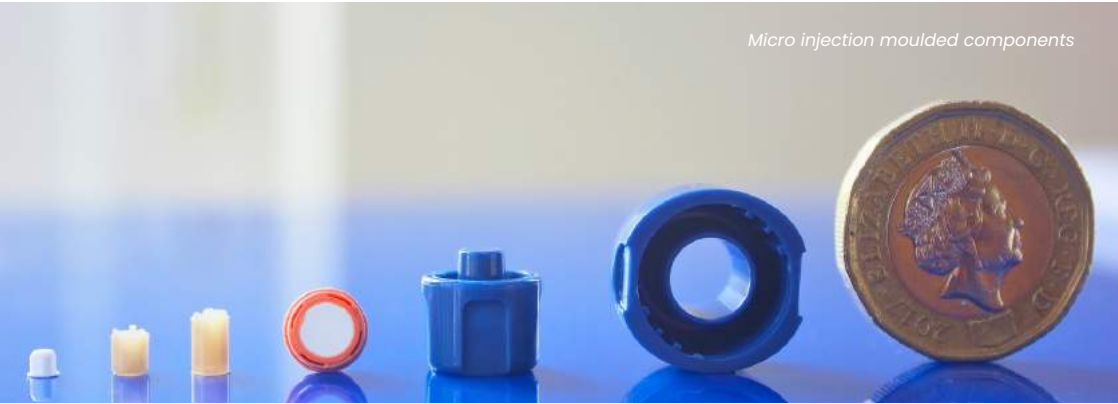
PEEK Implant



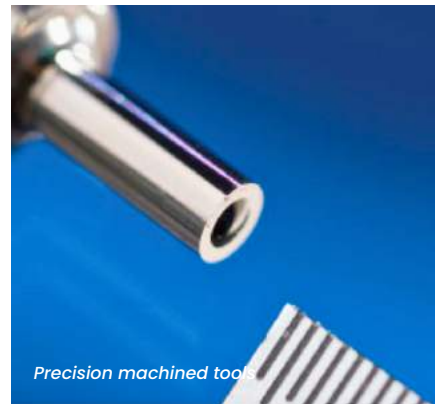
Micro Tube Connector

# MICRO INJECTION MOULDING

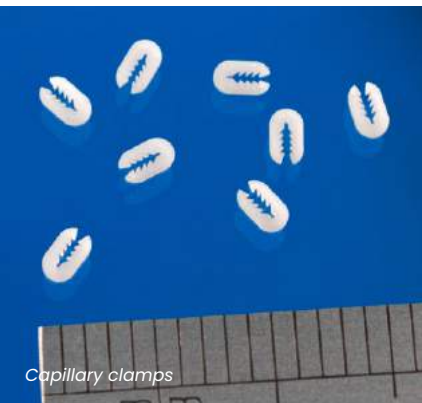
*Micro injection moulded components*



*Precision machined tools*



*Precision machined tools*

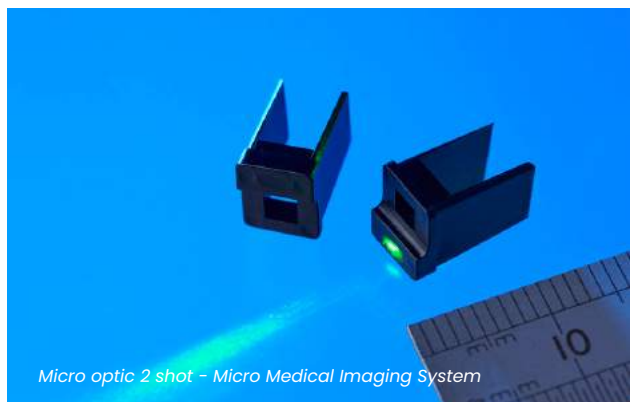
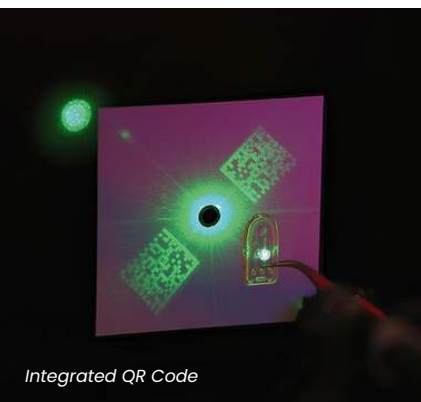
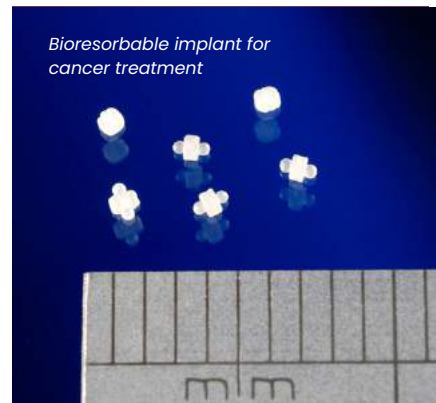
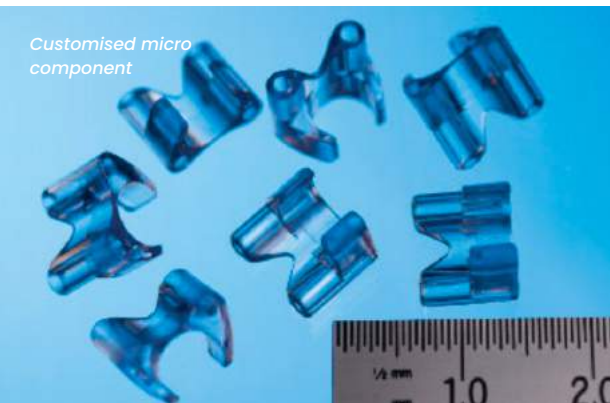
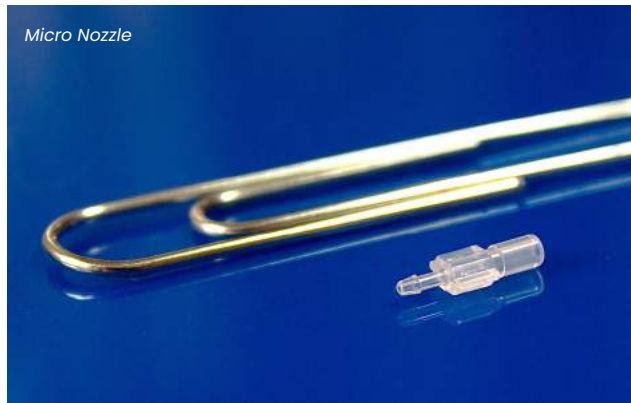
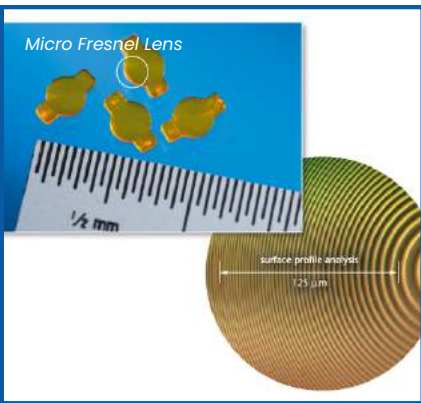


*Capillary clamps*



*Conformal Cooling for Medical Injection Mould*

# MICRO INJECTION MOULDING





# microsystems

precision medical moulds

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