

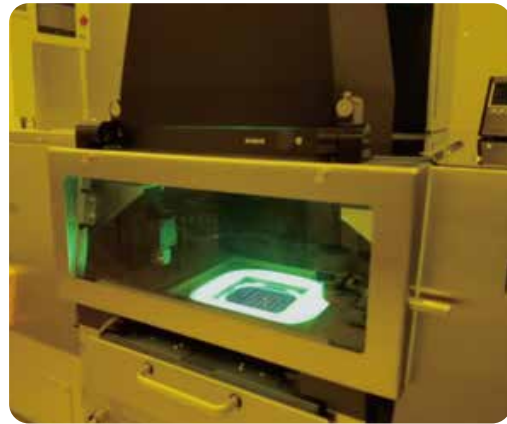
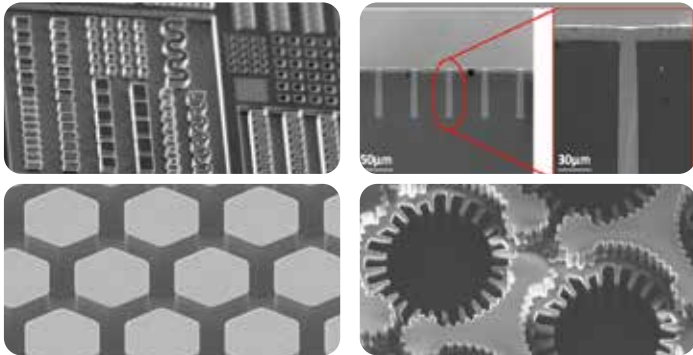
MEMS

Technology Summary

Designed for science
 Made for accuracy

Hicomp's MEMS business specializes in combining MEMS technology with microfluidics, multi-material micromachining, and the use of various materials such as polymer, silicon, glass and metals to produce high-precision devices with micron scale features and nanoscale surface roughness. We offer advanced technologies like silicon deep etching, Through-Silicon-Via (TSV), SU8 photoetching and flim coating, providing comprehensive MEMS solutions to meet different industry needs.

Show Case



Process Capability

Photolithography	Substrate (4/6/8Inch Wafer)	Glass Silicon Polymer
	Positive photoresist	Critical Dimension: 1µm
	Negative photoresist	Critical Dimension: 1µm
	SU8 thickness	2-500µm
	SU8 aspect ratio	20: 1
	Single side alignment accuracy	±1µm
	Backside side alignment accuracy: 3µm	±3µm
Etching	Material	glass silicon
	Aspect ratio	Glass :5:1
		Silicon 15:1
Film Deposition	Sputter ation	Al,Al(Cu),Cu,Ti,TiN,Ta,TaN,W,Pt,Au,Pre clean
	Evaporation	Al,Pt,Ti,Cr,Au,Ag,Sn
TSV	Diameter	20-30µm
	Aspect ratio	10:1
	Material	Copper Glass

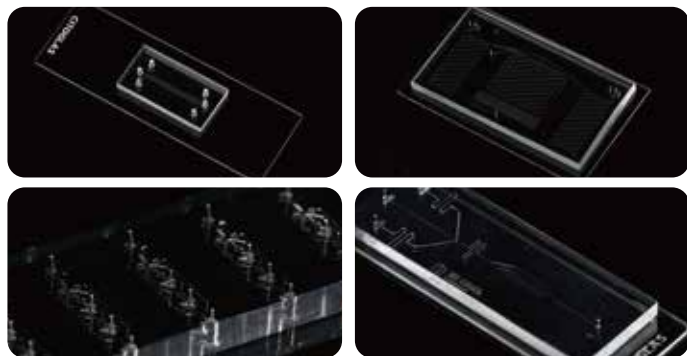
PDMS

Technology Summary

Designed for science
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Hicomp has expertise in mass manufacturing PDMS chips for microfluidic and biochip applications. PDMS chips are popular due to their easy processability, good chemical resistance, high optical transparency, and low cost. Hicomp can produce multi-structure chips with high precision and can meet the demand for mass production up to 20,000 pieces per month. Hicomp ensures the highest quality and consistency in PDMS chip manufacturing for applications such as organ-on-a-chip, gene sequencing, liquid biopsy and droplet microfluidics.

► Show Case



► Process Capability

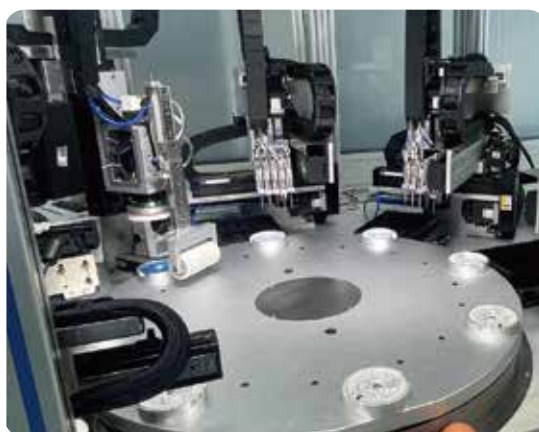
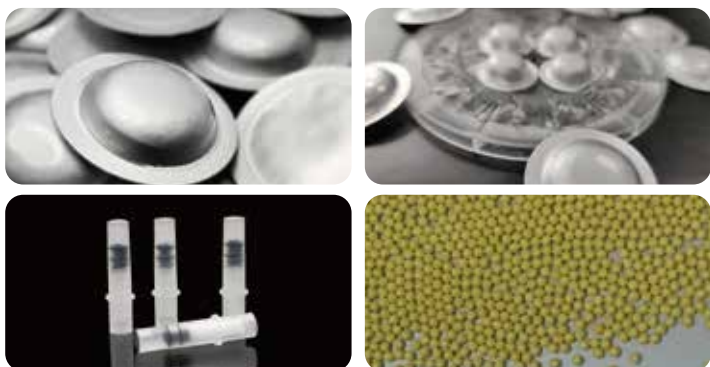
Size	< 30cm*30cm
Thickness	15μm-100mm
Bonding strength	0.5Mpa
Multi-layer bonding	2-5 layers
Colored PDMS	Customizable
Surface Flatness	< 2μm
Hole Diameter	> 0.8mm(Vertical and smooth)
Chanel width	> 10μm
Chanel depth/width Ratio	< 5
Tolerance	±5%
Maximum capacity of production	20000pcs/month

REAGENT STORAGE

Designed for science
Made for accuracy

Hicomp offers two solutions for storing reagents in microfluidic chips. One method is to store liquid reagents in liquid bags, and the other is to store reagents directly on the chip after lyophilization. This helps to ensure the quality and stability of the reagents while also providing convenience and ease of use.

► Show Case



► Process Capability

Blister Pouches for Liquid Storage		Reagent Lyophilization	
Material	PP/AL/PP or OPA/AL/PVC	Shape	Globular or powdery
Dimension and shape	Customizable	Volume	5-25µl (Globular)
Fringe width	2mm	Volume accuracy	±1%
Sealing method	Heat Welding	Reagent type	Biochemical reagent
Filling volume	> 50µl	Storage condition	2-8°C
Volume accuracy	< ±5%	Period of validity	> 1 year
Liquid storage time	12 months (Volume Loss < 1%)	Environment humidity	< 3%
Production capacity	10000 pcs/day	Production capacity	20000 pcs/day

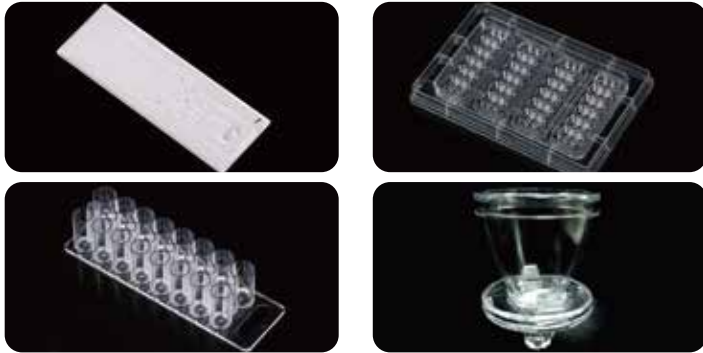
Cleanroom Injection Molding

Designed for science
Made for accuracy



Hicomp's cleanroom injection molding technology is dedicated to the production of high-precision microfluidic and lab consumables. With expertise in precision injection molding, they can produce parts as small as 1 micron, including microcolumns, micropores, and microfluidic devices. We also provide low-temperature bonding and surface treatment for microfluidic devices, ensuring stable performance under various conditions.

► Show Case



► Process Capability

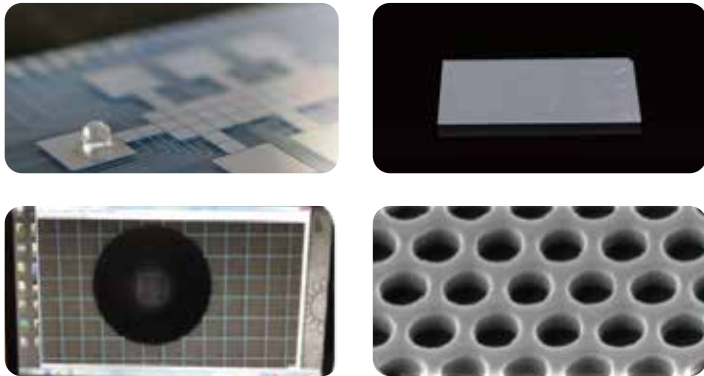
Chip	Material	Thermal plastics(PP\PS\PP\PMMA\COC\COP)
	Size	Customizable
	Radius	2-20μm
	Through-hole diameter	> 0.05mm
Channel	Channel width	> 2μm
	Channel aspect ratio	< 5
	Channel dimension tolerance	±5%
	Channel surface roughness	5-10nm
	Resolution/min feature size(um)	2um
	Complex feature size multiple channel depths on one layer	Available
Micro pillar array	Micro pillar diameter	>20μm
	Micro pillar aspect ratio	< 3
	Micro pillar dimension tolerance	±10%
Chip bonding	Chip bonding process	Ultrasonic welding
		Thermal-compression bonding
		Laser welding
		Adhesive membrane
		Solvent bonding
Surface treatment	Hydrophilic treatment	Multiple hydrophilic treatment
		Contact angel ranged from 10 to 30°
		Duration up to 2 years
Assembly	Electronic connectors or electrode embedded in a chip	Available
	Surface polishing	Available

GLASS CHIPS

Designed for science
 Made for accuracy

Hicomp specializes in the production of cutting-edge glass microfluidic chips, particularly Flow Cell for NGS and Digital Drop-let Microfluidics. We excel in microstructure fabrication, microwell production, glass drilling, laser bonding, adhesive bonding, and more. Our advanced manufacturing processes enable us to deliver high-quality glass chips that meet the demanding requirements of biotechnology and life sciences industries.

► Show Case



► Process Capability

Glass Chip		
Microstructure	Thickness	0.1-2mm
	Thickness Uniformity	±5µm
	Surface Roughness	<2nm
	Channel Size	Length ≥ 50µm Width ≥ 10µm
Microwell	Aperture Diameter	> 0.1µm
	Aperture Uniformity	CV < 5%
	Aspect Ratio	< 10
	Tilt Angle	80°-90°
	Hole Pitch	> 0.1µm
Glass Drilling	Aperture Diameter	0.1-10mm
	Edge-chipping Size	<100µm
	Upper and lower aperture difference	<10%
	Position Accuracy	±50µm
Bonding	Alignment Accuracy	50-200µm
	Bonding Process	Laser/UV bonding