

## Process and application

Ostemer® 322 Crystal Clear	Ostemer® 324 Flex	Ostemer® 325 Spin-on	Ostemer® 220 Litho
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### Process compatibility

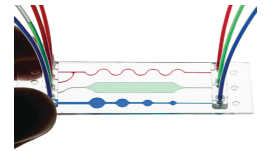
UV-casting/molding	++	++	++	++
(Nano-)imprinting	++	+	+	++
Photolithography (proximity)	+	++	+	++
Reaction injection Molding (RIM)	++	+	+	+
Spincoating	+	+	++	++
Blade coating	+	+	++	++
Roll-to-roll processing	+	+	+	++
Dry bonding	++	++	++	
Surface modification	+	+	+	++

### Preferred applications

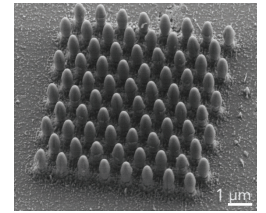
Microfluidic cartridges, Lab-on-chip	++			
Cell studies	++	+	+	
Metallised polymer-MEMS	++	+	+	+
Hybrid-material integration	++	++	++	
Flexible electronics		++		++
Capillary pumping	+			++

### Directly bondable to

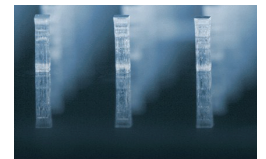
Glass, Si, SiO <sub>2</sub> substrates	++	++	++	
Metal substrates (Ag, Au, Al, Ni, Pt, Cu)	++	++	++	+ (Au, Ni)
PET films	+	+	++	



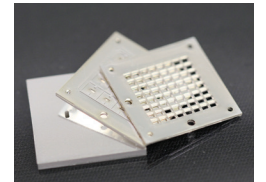
Ostemer® 322 microfluidic chip



Nano-sized features in Ostemer® 322



High aspect-ratio lithography of Ostemer® 220



Metallised Ostemer® 322

## Material specifications

Ostemer® 322 Crystal Clear	Ostemer® 324 Flex	Ostemer® 325 Spin-on	Ostemer® 220 Litho
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### Curing process

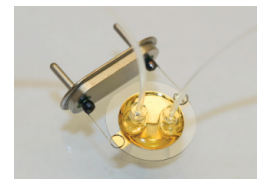
Curing	Two-step	Two-step	Two-step	One-step
First cure	UV	UV	UV	UV
Second cure	Thermal 110 °C	Thermal 110 °C	Thermal 110 °C	

### Liquid material before patterning process

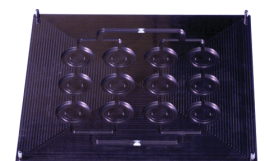
Solvent-free	Yes	Yes	Yes	< 1%
Approximate viscosity (mPaS)	4000	2000	1000	500
Spectral sensitivity	365 nm i-line	365 nm i-line	365 nm i-line	365 nm i-line, 405 nm h-line

### Materials properties

Volume shrinkage during curing	1 %	1%	1%	< 1%
Refractive index	1.58			
Optical property	Clear	Clear	Clear	Clear, slight yellow tint
Autofluorescence	Low > 400 nm	Low > 400 nm	Low > 400 nm	Low > 450 nm
Youngs modulus	1000 Mpa	30 Mpa	1000 Mpa	10 Mpa
Strain until break	2%	30%	2%	
Cell compatibility	Good, several cell lines tested*			
Solvent resistant	Very good	Very good	Very good	Good
Acid resistance	Very good	Very good	Very good	Very good
Surface chemistry after first cure	SH- and epoxy-groups	SH- and epoxy-groups	SH- and epoxy-groups	(see full cure)
Surface chemistry after full cure	OH-groups	OH-groups	OH-groups	SH-groups
Contact angle	65	65	65	70
Lithographic resolution	< 20 µm	< 20 µm	< 20 µm	< 3 µm



Ostemer® 220 packaging bonded to Au



Aluminum mold for batch fabrication

### More information

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