Supplementary information for Lab on a Chip
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NEW FAMILY OF FLUORINATED POLYMER CHIPS FOR DROPLET AND ORGANIC SOLVENT MICROFLUIDICS

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Swelling ratios of THV500 in representative organic solvents.

Solvent	Swelling Ratio for THV500 [a]	Swelling Ratio for PDMS [b]
water	1.00	1.00
ethanol	1.00	1.04
toluene	1.00	1.31
hexadecane	1.00	$\sim$1.3 [c]
chloroform	1.01	1.39
FC-40	1.00	1.00

Each measure was obtained by cutting a 2x2x3mm block of THV500. The block was then put for 24 hours in a flask containing the solvent to be studied. Measures of the block were taken before (D_0) and after (D) the contact with the solvent using a caliper (accuracy 0.01mm). The second measure was performed while the block was inside the solvent, in order to avoid errors due to evaporation. The Swelling ratio (S) was calculated using the formula proposed by Lee *et al.* (2003):

$$S = \frac{D}{D_0} \tag{1}$$

and averaging three measures for each solvent.

References

J. N. Lee, C. Park and G. M. Whitesides, *Analytical Chemistry*, 2003, **75**, 6544–6554.

[a] Mean value of the swelling ratios calculated for 3 samples

[b] As reported by Lee *et al.* (2003)

[c] Data not available. This value corresponds the order of magnitude of swelling ratio for PDMS in alkanes