

# Physical Properties of Polymer & Silica



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Microsphere matrices confer a range of properties that will impact different aspects of handling, processing and use. The following values are as reported in the literature for the bulk material, and are provided as estimates only.

Composition	Abbreviation	Density (g/cm <sup>3</sup> )	Refractive Index (n <sub>D</sub> at 589 nm)	Glass Transition Temp (Td), °C
Polystyrene	PS	1.05	1.59	95
Polystyrene / Divinylbenzene	P(S/DVB)			
	P(S/2%DVB)	1.062		99
	P(S/10%DVB)	1.067		114
Polymethylmethacrylate	PMMA	1.19	1.49	105
Silica (SiO <sub>2</sub> , silicon dioxide)	Silica	2.0	≈1.43 – 1.46	>>1000

## References

*Polymer Handbook, Fourth Edition.* (2003, J. Brandrup, E.H. Immergut, E.A. Grulke. ISBN: 0471479365)

*Styrene: Its Polymers, Copolymers and Derivatives.* (1952, R.H. Boundy, R.F. Boyer [Reinhold]) ISBN: 0028417003

*The Chemistry of Silica: Solubility, Polymerization, Colloid and Surface Properties, and Biochemistry.* (1979 R.K. Iler, ISBN: 0-471-02404-X)