# ZETASIZER CELLS AND CUVETTES: DESCRIPTIONS AND USES

A wide selection of cells is available for use with the Zetasizer range of instruments. This technical note lists all of the cells currently available from Malvern Panalytical. Each has qualities and advantages that suit particular applications. The following tables describe the available cells and show which instruments from the Zetasizer range that the cells can be used with.

Table 1 gives a description of the cells.

Table 2 shows which of the cells are compatible with size measurements.

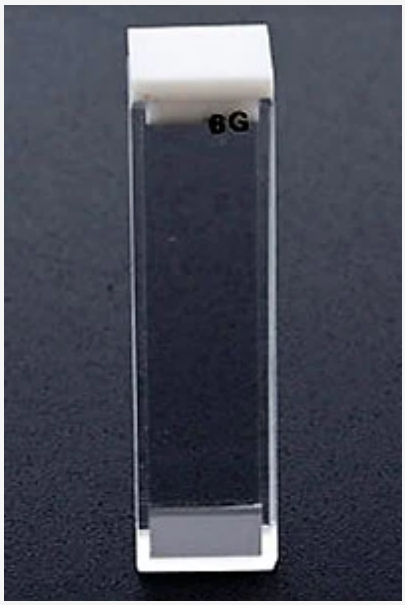
Table 3 shows which of the cells are compatible with zeta potential measurements.

Table 4 shows which of the cells are compatible with molecular weight measurements.

Table 1: Size, molecular weight and zeta potential cells available with the Zetasizer range.

| Part number | Description | Picture |
| --- | --- | --- |
| DTS0012 | Disposable polystyrene cuvette, pack of 100 with 100 caps, minimum volume 1mL, suitable for all systems that measure size. Compatible with: Zetasizer 1000/3000, HPPS, Zetasizer Nano series |  |
| ZEN0118 | Disposable low volume cuvette for size measurement, pack of 100 with 100 caps, minimum volume 50µL, suitable for all systems that measure size at 90 degree scattering angles only. Can be used with aqueous dispersants. Compatible with:  Zetasizer Nano series and Zetasizer µV |  |

| Part number | Description | Picture |
| --- | --- | --- |
| ZEN0040 | Disposable, solvent resistant micro cuvette, for size measurement at a 173 degree scattering angle, pack of 100 with 100 caps, minimum volume 40µL, suitable for Zetasizer Nano S and ZS. Not suitable for measurements at a 90 degree scattering angle. (Resistant to Acetone, Benzaldehyde, Butanone, Dioxane, DMF, Ethyl acetate, Isopropanol, various acids and bases) |  |
| PCS8501 | Square glass cuvette for size and molecular weight measurements. For the Zetasizer 1000/3000/3000HS, HPPS, Nano series and Zetasizer µV. With circular aperture and stopper. Not suitable for use with the 'dip' cells for electrophoresis measurement |  |

| Part number | Description | Picture |
| --- | --- | --- |
| PCS1115 | Square glass cuvette with cap for 'dip cell' electrophoresis measurement and size and molecular weight measurements. Compatible with the Nano series universal dip cell (ZEN1002) and the Zetasizer 2000 and 3000 Series aqueous and non-aqueous 'dip' cells (DTS5001/5002). With square aperture and cap |  |
| ZEN0023 | Quartz flow cell for size, intensity and molecular weight measurement. Compatible with MPT-2 autotitrator and Zetasizer Nano S, ZS, S90. (S90 for Size and Intensity only). Complete with connecting tubing. |  |

| Part number | Description | Picture |
| --- | --- | --- |
| ZEN0116 | Quartz flow cell to enable the use of the Zetasizer Nano as a detector when connected to an SEC system. Connections compatible with standard SEC tubing 1/16inch o.d. Includes, ZEN0023 quartz flow cell, connections for cell, 1.5m PEEK tubing, 1/16inch o.d. 0.1mm i.d. |  |
| ZMV1008 | Quartz flow cell to enable the use of the Zetasizer μV as a detector when connected to an SEC system. 8μL volume. Connections compatible with standard SEC tubing 1/16inch o.d. Includes, quartz flow cell, connections for cell, 1.5m PEEK tubing, 1/16inch o.d. 0.1mm i.d. |  |

| Part number | Description | Picture |
| --- | --- | --- |
| ZEN2112 | Low-volume quartz batch cuvette for size and molecular weight measurements for use with the Zetasizer Nano ZSP, ZS and S. Minimum sample volume is 12µL. |  |
| ZEN1002 | Universal Dip Cell for the zeta potential measurement of low mobility samples such as those in organic solvents. Used in conjunction with DTS0012 and PCS1115. Compatible with the Zetasizer Nano ZSP, ZS, Z and ZS90. |  |

| Part number | Description | Picture |
| --- | --- | --- |
| ZMV1002 | Low-volume quartz batch cuvette for size and molecular weight measurements for use with the Zetasizer µV. Minimum sample volume 2µL |  |
| ZMV1012 | Low-volume quartz batch cuvette for size and molecular weight measurements for use with the Zetasizer µV. Minimum sample volume 12µL. |  |

| Part number | Description | Picture |
| --- | --- | --- |
| ZEN1020 | Surface zeta potential cell for the measurement of the zeta potential of planar surfaces using the Zetasizer Nano ZSP, ZS, Z and ZS90. Used in conjunction with DTS0012 and PCS1115. Samples should be 4-7 mm x 4 mm x ≤1.5 mm thick. |  |
| ZEN1010 | High concentration cell for the measurement of size in the Zetasizer Nano ZSP and ZS, and the measurement of zeta potential in the Zetasizer Nano ZSP, ZS and Z. The quartz cell has a path length of 1.5mm and this cell is compatible with the MPT-2 autotitrator. |  |

| Part number | Description | Picture |
|---|---|---|
| DTS1070 | Completely disposable cuvettes for the measurement of zeta potential with the Zetasizer Nano ZSP, ZS, Z and ZS90. It is also possible to measure size in these cuvettes with the Zetasizer Nano ZSP, ZS and S. These cuvettes are compatible with the diffusion barrier technique of sample introduction and the MPT-2 autotitrator. Pack of 10 with 25 stoppers.<br><br>Requires version 7.02 or later of the Zetasizer software. |  |

Table 2: Cells capable of size measurements with the different Zetasizers.

| Cuvettes for size measurement | Zetasizer 1000/3000 | HPPS | Zetasizer Nano S90/ZS90 | Zetasizer Nano S/ZS/ZSP | Zetasizer µV |
|---|---|---|---|---|---|
| DTS0012 | ✓ | ✓ | ✓ | ✓ | ✓ |
| ZEN0118 | ✓ | ✕ | ✓ | ✕ | ✓ |
| ZEN0040 | ✕ | ✕ | ✕ | ✓ | ✕ |
| PCS8501 | ✓ | ✓ | ✓ | ✓ | ✓ |
| PCS1115 | ✓ | ✓ | ✓ | ✓ | ✓ |
| ZEN0023 | ✕ | ✕ | ✓ | ✓ | ✕ |
| ZEN0116 | ✕ | ✕ | ✓ | ✓ | ✕ |
| ZMV1008 | ✕ | ✕ | ✓ | ✕ | ✓ |
| ZEN2112 | ✕ | ✕ | ✕ | ✓ | ✕ |
| ZMV1002 | ✕ | ✕ | ✕ | ✕ | ✓ |
| ZMV1012 | ✕ | ✕ | ✕ | ✕ | ✓ |

Table 3: Cells capable of zeta potential measurements with the different Zetasizers.

| Cuvettes for zeta potential measurement | Zetasizer Nano Z | Zetasizer Nano ZS90 | Zetasizer Nano ZSP/ZS |
|---|---|---|---|
| DTS1070 | ✓ | ✓ | ✓ |
| ZEN1020 | ✓ | ✓ | ✓ |
| ZEN1010 | ✓ | ✕ | ✓ |
| ZEN1002 | ✓ | ✓ | ✓ |

Table 4: Cells capable of molecular weight measurements with the different Zetasizers.

| Cuvettes for molecular weight measurement | Zetasizer Nano ZS90 | Zetasizer Nano ZSP/ZS | Zetasizer µV |
|---|---|---|---|
| PCS8501 | ✓ | ✓ | ✓ |
| PCS1115 | ✓ | ✓ | ✓ |
| ZEN2112 | ✓ | ✓ | ✓ |
| ZMV1002 | ✕ | ✕ | ✓ |
| ZMV1012 | ✕ | ✕ | ✓ |
| ZMV1008 | ✕ | ✕ | ✓ |
| ZEN0116 | ✓ | ✓ | ✓ |

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