

NIST Traceable

Polydisperse Particle Standard

10-100 μ m

Part Number: PS415

Batch Number: 3

Nominal Weight: 1.0g x 10 bottles

Notes:

(1) Traceability –

NIST primary reference calibrated stage reference graticule, ref. 821/263573-00 and National Physical Laboratory (Teddington, UK) stage reference graticule, ref. 08A038/970127/106-66 have been used during the primary calibration of both sieving and image analysis methods.

(2) Whitehouse Scientific Ltd operates to the principles of ISO17025 with all business operations covered by a comprehensive Quality system and supporting documentation.

(3) This certificate is only valid if a complete single-shot bottle is used in the analysis.

(4) Whitehouse Scientific Ltd does not accept responsibility for losses, financial or otherwise which may occur as a result of the interpretation or use of the information contained within this certificate.

Certificate of Analysis

NIST TRACEABLE

POLYDISPERSE PARTICLE STANDARD

SODA-LIME GLASS MICROSPHERES



Whitehouse Scientific
 Whatever the particle sizing method...we have the perfect solution! www.WhitehouseScientific.com

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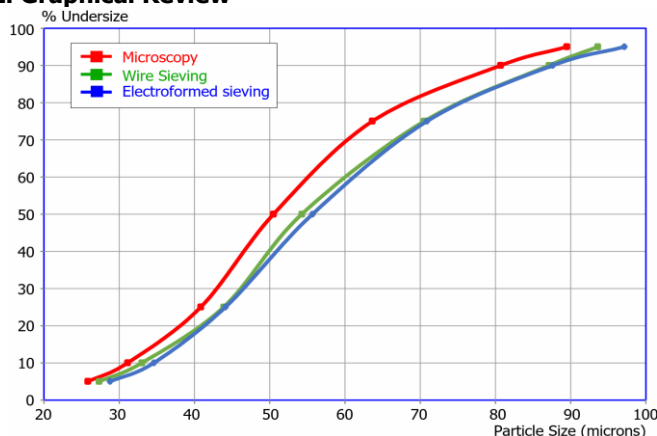
1. Detailed Review

(sieve analyses performed in dry state)

(all results by weight/volume, total of 13 individual tests)

		Percentile						
Method		5	10	25	50	75	90	95
5 x Electroformed Sieve (by weight)	Mean	28.8	34.60	44.1	55.7	70.9	87.6	97.2
	SD	0.7	0.7	0.4	0.3	0.4	0.6	0.5
5 x Wire Woven Sieve (by weight)	Mean	27.3	33.0	43.9	54.3	70.5	87.1	93.6
	SD	0.6	0.6	0.3	0.4	0.6	0.6	0.2
3 x Microscopy (by volume)	Mean	25.8	31.10	40.8	50.5	63.7	80.7	89.5
	SD	0.5	0.5	0.5	0.4	0.5	0.6	0.9

2. Graphical Review



2. Tabular Summary

Cumulative percent undersize	10	25	50	75	90
Final Mean Size - microns	33.2	43.3	53.9	69.1	85.8
Uncertainty – microns (95% confidence)	3.0	2.9	4.2	6.3	6.0

Issued by:

Mr J A Miles, Laboratory Manager

PRIMARY METHODS OF PARTICLE SIZE ANALYSIS FOR WHITEHOUSE SCIENTIFIC POLYDISPERSE STANDARDS

ACCURATE SUB-DIVISION

– Dr G R Rideal, Whitehouse Scientific, UK

All polydisperse particle size standards are produced using specially designed 100 stage spinning riffles. The method ensures each bottle of standard is, within experimental error, identical in particle size distribution. All weights are nominal with a standard deviation of approximately 5% (uncertainty 10%).

ELECTROFORMED SIEVE ANALYSIS

– Mr J A Miles, Mr K G Brocklehurst, Mr E C Dizon, Whitehouse Scientific, UK

Electroformed nickel sieves accurate to ± 2 microns were used for this method.

WIRE WOVEN SIEVE ANALYSIS

– Mr J A Miles, Mr K G Brocklehurst, Mr E C Dizon, Whitehouse Scientific, UK

Where quoted, ASTM E11 stainless steel wire woven sieves have also been used to give an indication of the spread of sieve data that is likely to be observed.

MICROSCOPY AND IMAGE ANALYSIS

– Mr J A Miles, Mr K G Brocklehurst, Mr E C Dizon, Whitehouse Scientific, UK

A combination of light microscopy and image analysis has been used to enable the identification and analysis of a statistically robust number of particles.

ALL MEASUREMENTS

Sieve analyses have been performed in the dry state.

Both Sieving and Microscopy measurements refer to the MINIMUM dimension of the glass beads.

All results are reported on a volume/weight basis.

For further information details see 'Literature' in www.WhitehouseScientific.com.