

Calibration Samples

For accurate test sieve calibration

Test sieve calibration samples supplied by Endecotts are microspheres formed of soda-lime glass that range from 3.35 mm down to 20 micron sizes. Because of the precise nature and extent of the range of spheres, samples can be supplied to enable the accurate calibration of individual sieves to an accuracy of approx. 1 μm . The microspheres pass over almost, the total surface of the sieve enabling more apertures to be examined than with any other method. Consequently, calibration samples are one of the most accurate methods of sieve calibration available.

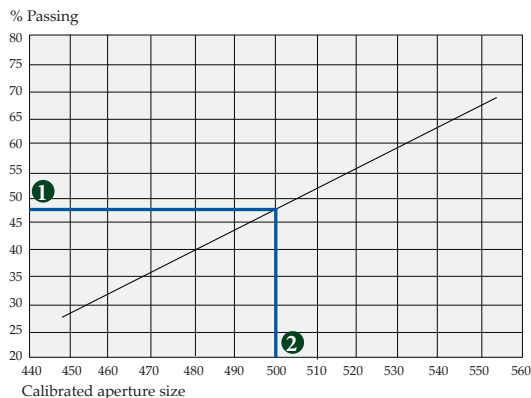
The glass microspheres are calibrated by an external laboratory who are recognised as one of the leading particle analysis laboratories by the BCR, and by 20 other leading European particle size analysis laboratories.

The table on the right lists the nominal aperture size of a specific sieve and the appropriate Calibration Sample required.

The samples are supplied in 'Single Use' vials complete with calibration certificate.



**Traceable to the National
Physical Laboratory**



How to accurately calibrate test sieves in a matter of minutes

- 1) Select the calibration sample size that matches the aperture size of the sieve.
- 2) Place a weighed sample on the sieve under test and shake for 2 minutes.
- 3) Weigh the sample again and calculate the percentage passing through the sieve.
- 4) Simply read off the percentage passing along the graph supplied with every Calibration Sample. ①
- 5) The mean average aperture size in microns can be read off against the graph. ②

Calibration Samples

Nominal Aperture	Aperture Range	No. of Vials	Nominal Weight
20 μm	15 - 25 μm	5 vials	0.8 g each
25 μm	20 - 32 μm	5 vials	0.8 g each
32 μm	25 - 38 μm	5 vials	1.0 g each
38 μm	32 - 45 μm	5 vials	1.0 g each
45 μm	38 - 53 μm	5 vials	1.0 g each
53 μm	45 - 63 μm	5 vials	1.0 g each
63 μm	53 - 75 μm	5 vials	1.0 g each
75 μm	63 - 90 μm	5 vials	1.0 g each
90 μm	75 - 106 μm	5 vials	1.0 g each
106 μm	90 - 125 μm	5 vials	1.0 g each
125 μm	106 - 150 μm	5 vials	1.0 g each
150 μm	125 - 180 μm	5 vials	1.5 g each
180 μm	150 - 212 μm	5 vials	1.5 g each
212 μm	180 - 250 μm	5 vials	1.5 g each
250 μm	212 - 300 μm	5 vials	2.5 g each
300 μm	250 - 355 μm	5 vials	2.5 g each
355 μm	300 - 425 μm	5 vials	2.5 g each
425 μm	355 - 500 μm	5 vials	2.5 g each
500 μm	425 - 600 μm	5 vials	2.5 g each
600 μm	500 - 710 μm	5 vials	2.5 g each
710 μm	600 - 850 μm	5 vials	2.5 g each
850 μm	710 μm - 1 mm	5 vials	2.5 g each
1 mm	850 μm - 1.18 mm	5 vials	7.0 g each
1.18 mm	1.0 - 1.4 mm	5 vials	10.0 g each
1.4 mm	1.18 - 1.7 mm	5 vials	15.0 g each
1.7 mm	1.4 - 2.0 mm	5 vials	15.0 g each
2 mm	1.7 - 2.36 mm	5 vials	20.0 g each
2.36 mm	2.0 - 2.8 mm	5 vials	20.0 g each
2.8 mm	2.36 - 3.35 mm	5 vials	25.0 g each
3.35 mm	2.84 - 4.0 mm	5 vials	25.0 g each

NIST TRACEABLE SIEVE CALIBRATION STANDARDS

0011

- Unique microsphere method of sieve calibration
- Applicable to all sieves from 20 - 3350 micron
- Mean aperture sizes traceable to NIST and NPL
- Measure over 1 million apertures per minute
- Typical calibration time of about 1 minute
- Method analyses over 80% of the sieve surface
- Accuracies and repeatabilities better than $1\mu\text{m}$
- Results independent of sieve shaking method
- Single-shot bottles remove operator bias
- No need to send sieves away for calibration



Microsphere Certification

Individual sieve calibration standards have been produced for every sieve manufactured between 20 and $3350\mu\text{m}$. The particle size distribution of the microspheres is designed to peak at the sieve in question and fall one sieve size either side in the ISO or ASTM series. Thus, for the $63\mu\text{m}$ standard, the size distribution is between $53\mu\text{m}$ and $75\mu\text{m}$. Having constructed the size distributions, the microspheres are initially certified by high precision electroformed sieves calibrated against NIST and NPL standards.

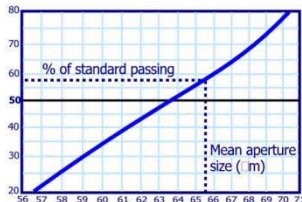
Electroformed sieves are exceptionally uniform and apertures rarely vary by more than $1\mu\text{m}$. Because the size distributions are so narrow, only 3 electroformed sieves can be used for analysis. To ensure that the distributions are uniform and can be interpolated with confidence, the sieving data is supported by optical microscopy. The certificate calibration graph can then be drawn.

Quick and Simple to Use

Empty the complete contents of a bottle of the appropriate standard onto the sieve and shake evenly over the surface for 1 minute.



Calculate the percentage passing and read off the mean aperture size from the calibration graph.



Narrow size distributions mean that a 5% weight difference is only equivalent to 1 micron size difference.

Sieve Aperture Size Calculator

To determine the mean aperture size, the operator simply selects the nominal rating of the sieve to be calibrated, enters the initial weight and the weight of the beads passing through. Then click 'Calculate' for an instant result!

The program will be provided free of charge to customers purchasing Sieve Standards.

Which Standard Should I Use?

The aperture size of every sieve manufactured from 20 to $3350\mu\text{m}$ can be certified to NIST traceability.

Our standards are named after the 30 most popular sieves (R40/3) but can also be used for the 28 intermediate sizes, shown in grey below.