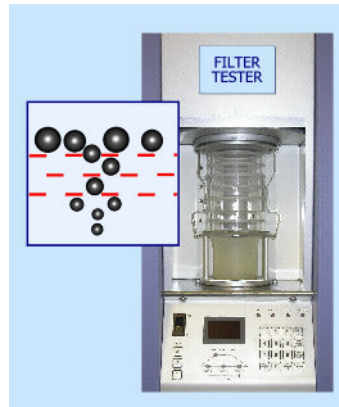


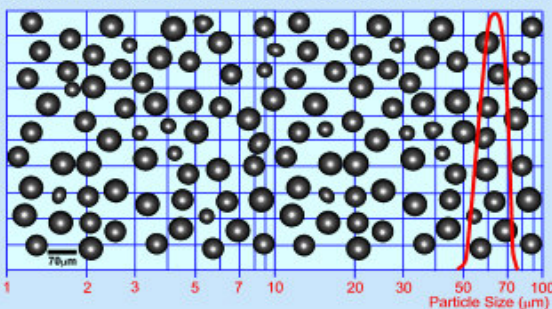
## FILTER CUT POINT DETERMINATION

- the only absolute method

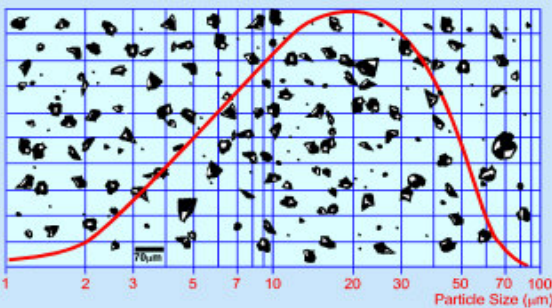
- Unique super-sonic method of calibrating filters
- Wide calibration range - from 5 to over 1000 $\mu\text{m}$
- Filter cut points traceable to NIST and NPL
- Glass microspheres give unambiguous results
- Accurate to 1 $\mu\text{m}$  for the smaller filter apertures
- Maximum pore size can easily be verified
- Single-shot bottles give excellent repeatability



Narrow distribution microspheres give excellent resolution



Broad distribution test dusts give poor resolution



### A Novel Sonic Sifting Approach

20 narrow distribution microsphere standards have been produced and certified by Electroformed sieve analysis and microscopy using a NIST reference. A single-shot vial of the appropriate standard is first fluidized on the filter by a computer controlled Sonic sifting device.

A Calibration graph supplied with each standard is then used to relate the percentage passing to the filter cut point. Because the particle size distributions are so narrow, a 10% weight difference passing a filter only equates to a 2 $\mu\text{m}$  change in pore size. The graphs below show the construction and use of the filter calibration graphs.

### Certifying the Standards

Each of the filter calibration standards have been analysed 5 times using Electroformed sieves traceable to NIST and NPL. To give confidence in interpolation, the data is supported by microscopy.

### Application

This unique method of filter calibration may be used on all forms of complex woven and non-woven materials that are impossible to calibrate by other means.

### Note:

The efficiency of the sonic sifting device is dependent on the thickness of the filter to be analysed. Although the instrument is capable of analysing down to 5 $\mu\text{m}$ , for sizes below 25 $\mu\text{m}$ , an ultrasonic suspension method employing ultrasonics may have to be used.

Analysis of the microspheres passing can be used to determine the maximum pore sizes in the filter.

