

Max. batch size for sieves

The bulk sample obtained is often bigger than the **maximum batch** a sieve shaker can process. This depends on various factors such as number and aperture size of the sieves, maximum grain size and width of distribution of the sample. The standard DIN 66165 provides more details, e.g. the maximum amount of oversize grain which should remain on a square decimeter of sieve bottom. The oversize grain on a sieve with a mesh size of 1 mm, for example, should not be more than 20 cm³ per square decimeter.

For a 200 mm sieve that equals to 63 cm³ oversize, for a 400 mm sieve it is 252 cm³. The maximum batch should not exceed twice the amount of that oversize value, i.e. a 200 mm sieve with mesh size 1 mm should not be filled with more than 126 cm³ sample material. By multiplying these values with the bulk density, the corresponding mass values can be obtained.

Examples for the maximum batch and permitted sieve oversize for 200 mm sieves:

mesh size	max. batch	max. permitted sieve oversize
25 µm	14 cm ³	7 cm ³
45 µm	20 cm ³	10 cm ³
63 µm	26 cm ³	13 cm ³
125 µm	38 cm ³	19 cm ³
250 µm	58 cm ³	29 cm ³
500 µm	88 cm ³	44 cm ³
1 mm	126 cm ³	63 cm ³
2 mm	220 cm ³	110 cm ³
4 mm	346 cm ³	173 cm ³
8 mm	566 cm ³	283 cm ³

Professional **sample dividers** with a marginal standard deviation should be used for the extraction of representative sub-samples. They achieve the highest degree of reproducibility and are clearly superior to all other methods.

Important note: For a sieve analysis at least one complete sub-sample, obtained by sample division, is needed.

Selection of the Sieves

The selection of the sieves depends on the sample quantity (as mentioned above) but also on the particle size distribution. The mesh sizes of the sieve stack should cover the complete size range of the sample in regular intervals. The wider the size range of the sample, the more sieves should be used. The standards can help to determine the suitable mesh sizes.