Mesh and Micron Sizes

Micron is the measure of length most frequently used to describe tiny particle sizes. The term micron is actually a commonly used shorthand for micrometer (American spelling) or micrometre (international spelling). The official symbol for the micron or micrometer is µm, sometimes simplified as um. A micron is defined as one-millionth of a meter, a little more than one twenty-five thousandth of an inch.

What does mesh size mean?

Mesh size is referring to the mesh number and its relationship to the size of the openings in the mesh and thus the size of particles that can pass through these openings. Figuring out the mesh number is simple. All you do is count the number of openings in one linear inch of screen. This count is the mesh number. A 4-mesh screen means there are four little square openings across one inch of screen. A 100-mesh screen has 100 openings per inch, and so on.
As the number indicating the mesh size increases, the size of the openings and thus the size of particles captured by the screen decreases.
Higher mesh numbers = smaller particle sizes.
It is very important to remember that mesh size is not a precise measurement of the mesh opening size. This is because screens can be made with different materials with different thicknesses of strands or wire. The thicker the strands, the smaller the openings that a particle can pass through, and vice versa.

How fine do screens get?

This depends on the thickness of the wire or strand used to make the mesh. Most flow control components do not contain filter screens any finer than 500 mesh. The primary reason for this is that as the mesh number rises, the space between the wires or strands becomes smaller.
At some point the mesh number becomes so high that the percentage of open area is too low to be useful. This point is usually somewhere between 450 and 700 mesh depending on the diameter of the wire or filament used.

Note: Beyond 325 to 400 mesh, particle size is normally described only in microns.

How do you convert mesh opening size to microns?

It is possible to calculate an approximate mesh opening size for plane weave mesh with square openings. Both the wire or strand diameter and the distance between the centers of two adjoining strands must be known to do this. Filter mesh manufacturers provide the mesh opening size or the mesh's percent of open area or both. If a mesh opening size is provided in inches, it can be easily converted to microns. One micron is one-millionth of a meter and 1 inch = 25.4 millimeters.

What is mesh number?

Mesh number indicates the number of filaments or wires per linear inch of fabric or wire filter cloth. As mesh number increases, the size of the mesh openings decreases. Mesh number is not a precisemeasurement of particle size because of variations in the size of the wire or strands used in the screen.

How do you measure mesh size?

Woven filter mesh and screen technical specifications are usually given as mesh counts, mesh numbers, mesh openings and/or center-to-center distances. Mesh count and mesh number are the number of openings per inch measured starting at the center of one wire. Mesh opening is a measure of the space between the wires. Mesh center-to-center measurements are from the center of one wire to the center of the next adjacent parallel wire.

How large is a micron?

A micron is a metric unit of measure. A micron is one-thousandth of a millimeter.

How large is a human hair in microns?

Indian human hair typically falls within a diameter range of 0.06 to 0.09 mm, with many strands reaching 0.09 mm and above, classifying it as medium to thick on the global scale. This larger diameter contributes to its higher tensile strength, durability, and dense pigmentation. The structural thickness of Indian hair makes it a reliable natural reference when explaining micron sizes in filtration or precision engineering, as a single strand measures approximately 60–90 microns, providing a clear visual benchmark for understanding fine particle sizes and pore dimensions.

What is micron rating of a filter?

Generally, the micron rating of a filter micron is intended to indicate the ability of a filter to remove particles of that micron size or larger.

What is a mesh screen?

A metal mesh may be woven, knitted, welded, expanded, photo-chemically etched

or electroformed (screen filter) from steel or other metals. In clothing, mesh is loosely woven or knitted fabric that has a large number of closely spaced holes.

How is wire mesh measured?

Woven filter mesh and screen measurements are provided as mesh counts, mesh opening sizes and/or a center-to-center distances. Mesh count is the number of openings per inch measured starting at the center of one wire. Mesh opening size is the space between wires or strands. Mesh center-to-center measurements are from the center of one wire or strand to the center of the next adjacent parallel wire.

Mesh number

Mesh number indicates the number of filaments or wires per linear inch of fabric or wire filter cloth. Because mesh number frequently refers to mesh standards also, it also may indicate the filament or wire diameter too.

Plain Mesh to Micron conversion Table

MESH	INCHES	MICRONS	MILIMETERS
3	0.265	6730	6.73
4	0.187	4760	4.76
5	0.157	4000	4
6	0.132	3360	3.36
7	0.111	2830	2.83
8	0.0937	2380	2.38
10	0.0787	2000	2
12	0.0661	1680	1.68
14	0.0555	1410	1.41
16	0.0469	1190	1.19
18	0.0394	1000	1
20	0.0331	841	0.841
25	0.028	707	0.707
30	0.0232	595	0.595
35	0.0197	500	0.5
40	0.0165	400	0.4
45	0.0138	354	0.354

50	0.0117	297	0.297
60	0.0098	250	0.25
70	0.0083	210	0.21
80	0.007	177	0.177
100	0.0059	149	0.149
120	0.0049	125	0.125
140	0.0041	105	0.105
170	0.0035	88	0.088
200	0.0029	74	0.074
230	0.0024	63	0.063
270	0.0021	53	0.053
325	0.001732	44	0.044
400	0.001457	37	0.037
550	0.000984	25	0.025
625	0.000787	20	0.02
1200	0.000472	12	0.012
1250	0.000394	10	0.01
2500	0.000197	5	0.005

4800	0.000118	3	0.003