Micron vs. Mesh Rating©

MICRON

- **A micron is a measure of length.**
- **It is one millionth of a meter (0.000001 meter).**
- **The correct term is "micrometer" (µm) which is 0.00003937 inches.**
- **By contrast, a human hair is about 100 microns in diameter.**

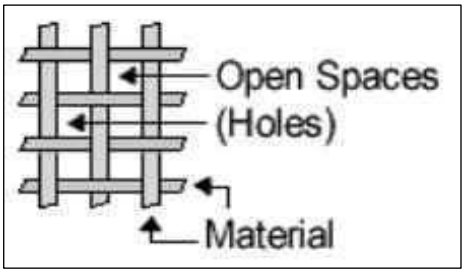
MESH Rating

- **Mesh is a measurement rating system**
- **It is based on the size of wire cloth**
- **The correct term we use for mesh sieves is "American Standard ASTM - E 11"**
- **A human hair would fit through openings of a 140 mesh sieve.**

It is important to understand **micron vs. mesh** rating when selecting or describing quality calcium carbonate products. For international quality standard reasons Columbia River Carbonates' products are measured in micron to better show its high efficiency and extreme fine size.

Coarser calcium carbonate products for the building industry, for standard horticultural, and agricultural liming use are most commonly measured in U.S. Wire Mesh instead of Microns in the U.S.

Wire mesh measures the number of wires (or threads) per linear inch, not the size of the holes between them. As the number of wires per inch goes up, the size of the holes goes down.



Mesh as a measurement describes more generally aperture opening (space between wires and wire material) expressed in the number of wires needed to create these openings.

Calculation: There is no simple accurate formula to convert between microns and wire mesh because it would have to account for a change in the actual diameter of the wire mesh.

However, there are handy rules that can give you approximate conversions:

1) Divide either the mesh or micron value into 15,000 to obtain the other value. This is a good approximation over a limited range, say about 45 to 400 mesh.

For instance, 15,000/325 mesh = 46 micron. Or 15,000/100 micron= 150 mesh.

2) If you know the distance between wire strands you can use a simple calculation method to find micron. This method to calculate approximate microns considers that the mesh is the number of wire strands per inch and the distance between strands is a standard of " x " inches. You can now convert inches to microns by multiplying by 25400.

As an example, let's say we have a 100 mesh product, which means the product will pass a screen with 100 wires per inch and no significant amount of product is coarser than 100 mesh, and you also know that the distance of wires is 0.0059 then: 0.0059 * 25400 = 149.86 = Therefore, a product passing through a 100 mesh screen is approximately 149 microns or less in particle size.

U.S. Mesh to Microns Conversion Chart

Inches (distance of wire)	U.S. Mesh (# of wires)		Microns (max. size of passing product)	
0.2650	3		6730	
0.1870	4		4760	
0.1570	5		4000	= 4 mm
0.1320	6		3360	
0.1110	7		2830	
0.0937	8		2380	approx. 240 SGN = 2.4 mm
0.0787	10	x	2000	= 2 mm
0.0661	12		1680	
0.0555	14		1400	
0.0469	16		1190	approx. 120 SGN = 1.2 mm
0.0394	18		1000	= 1 mm
0.0311	20	x	840	
0.0280	25		710	Beach sand
0.0232	30		590	
0.0197	35		500	
0.0165	40	x	420	
0.0137	45		350	
0.0117	50		297	
0.0098	60	x	250	Fine sand
0.0083	70		210	
0.0070	80		177	
0.0059	100	x	149	Industry Standard AG lime
0.0049	120		125	
0.0041	140		105	Human hair
0.0035	170		88	
0.0029	200		74	MICRONA AG lime Top Cut
0.0024	230		62	
0.0021	270		53	Silt soil
0.0017	325		44	
0.0015	400		37	not visible by human eye/ Plant pollen
0.0009	550		25	MICRONA AG Lime, avg. size
0.0006	800		15	MICRONA AG H2O solution grade
0.0005	1200		12	Red Blood cell
0.0004	1250		10	
0.0003	2400		6	MICRONA AG H2O solution Avg. size
0.0002	2500		5	
0.0001	4800		2	Cigarette smoke

x = typical agricultural Sieve Analysis needed for AG registration – e.g. passing as fine powder before prilling.