

# Micron vs. Mesh

## MICRON

- A micron is a measure of length.
- It is one millionth of a meter (0.000001 meter).
- The correct term is “micrometer” ( $\mu\text{m}$ ) which is 0.00003937 inches.
- By contrast, a human hair is about 100 microns in diameter.

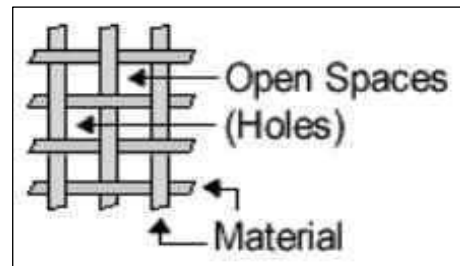
It is important to understand **micron vs. mesh** rating when selecting or describing quality tripoli products. For international quality standard reasons American Tripoli's products are measured in micron to better show its high efficiency and extreme fine size.

Coarser products for the majority of industries uses are most commonly measured in U.S. Wire Mesh instead of Microns in the U.S.

## 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.

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,  $15,000/325 \text{ mesh} = 46 \text{ micron}$ . Or  $15,000/100 \text{ micron} = 150 \text{ mesh}$ .

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 = 2.4 mm
0.0787	10	2000 = 2 mm
0.0661	12	1680
0.0555	14	1400
0.0469	16	1190 = 1.2 mm
0.0394	18	1000 = 1 mm
0.0311	20	840
0.0280	25	710 Beach sand
0.0232	30	590
0.0197	35	500
0.0165	40	420
0.0137	45	350
0.0117	50	297 Once Ground Tripoli
0.0098	60	250 Fine sand
0.0083	70	210
0.0070	80	177
0.0059	100	149 Double Ground & Trifil Tripoli
0.0049	120	125
0.0041	140	105 Air Float & Premium Tripoli
0.0035	170	88
0.0029	200	74
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
0.0006	800	15
0.0005	1200	12 Red Blood cell
0.0004	1250	10
0.0003	2400	6
0.0002	2500	5
0.0001	4800	2 Cigarette smoke