

IntraMicron, Inc.
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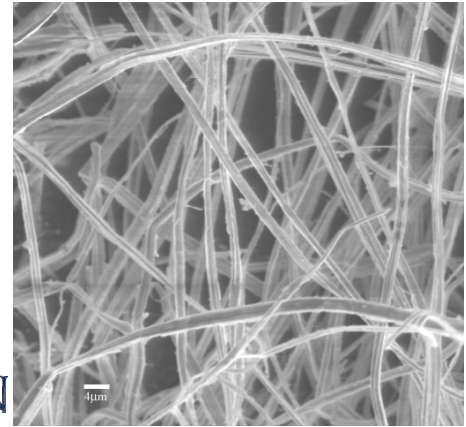
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Fine Metal Fiber Data Sheet

Alloys: Ni200, 316L S.S., NiChrome,
317L S.S., Copper, Brass, Titanium,
FeCrAl, other corrosion resistant
alloys upon request.



I N T R A M I C R O N



- **All products are bundle drawn to customer specified diameter & cut length (if desired).**
- Typical products range in diameter from 30µm to 1µm, and in length from 0.5mm to 80mm.
- All products exhibit extremely high surface area to mass ratios which increase with decreasing diameter.
- Fibers are produced clean, dry and free of contamination (fibers from others generally contain PVA and/or copper and steel surface impurities).
- IntraMicron's method of chopping fiber does not cold weld fiber ends as often seen in other processes. Also, hooking of the fiber ends is minimal, especially when compared to other processes (This can be seen in the SEM above).
- IntraMicron metal fiber is more rectangular than round and therefore has greater surface area than would be calculated based on a round fiber. This property is engineered into IntraMicron metal fiber and is not available elsewhere.
 - Fiber may exhibit a specific surface area of up to 400% that of the anticipated surface area based on the smooth cross-sectional dimensions of the fiber. The smaller the cross-sectional area (i.e., effective diameter) the greater this effect.
 - Even after sintering, increased surface area over the anticipated surface area is exhibited.
 - Fiber will exhibit better bonding, sintering & entanglement due to the increased surface area.
 - Generally, fiber will behave as if it is smaller than it actually is. Since smaller fiber is more expensive, this is one way IntraMicron fiber can be used to benefit the customer's bottom line.
 - Due to its large surface area, more protective surface oxides should be expected.
 - The SEM shown above contains fibers that all possess the same effective diameter, it can be seen that the angle at which they are viewed causes them to look either thin or wide.
- For wet-lay processes, fibers over 10µm in diameter are generally supplied in ~6mm lengths (~3mm lengths are used for 8µm and smaller diameters).
- For air-lay processes, typical supplied fiber lengths are from 20mm to 65mm. IntraMicron fibers are typically carded just prior to sheet formation.
- For addition into conducting polymers, fiber lengths of 0.5mm to 1mm are most common. Fibers of this length do not show entanglement and dispense using powder handling equipment.
- Electrical and thermal conductivities of loose fibers are similar to the bulk alloys (surface oxides and interfiber contact resistances must be taken into account, fibers may also be supplied as sintered web).
- Alloys with good corrosion resistance and high ductility are the most suitable for processing into the smallest diameters.
- 316L, 317L, Ni200, & NiChrome can be produced in any diameter down to 1.5µm (1.0µm in some cases). Most other alloys are available to ~12µm diameter; consult the factory for details on particular alloys.
- Most fiber is provided in a chopped, bagged and clean format; threads, yarns, continuous tow, and woven products are available on request.
- Call or e-mail info@intramicron.com for a quote or more information about yarn, thread, nonwoven media, weaves, or for pricing on alloys not shown.