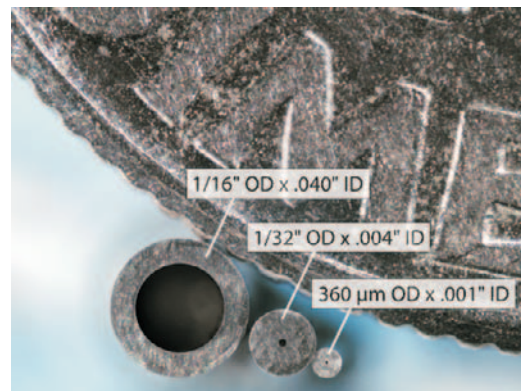


## Electroformed Nickel Tubing

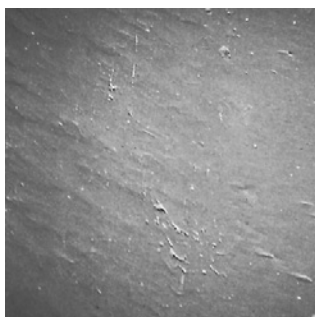
- 1-2 microinch interior finish for minimum carryover potential
- Precise interior volume
- Linear resistance/temperature relationship
- Ideal for EMI/RMI shielding
- Use as transfer lines, sample loops, columns, restrictors, and fixed flow arrays



### General Description

Our Microbore EFNi tubing is made by electroplating nickel over a diamond-drawn mandrel in a continuous process. When the mandrel is removed, an internal surface with a mirror-like 1-2 microinch finish remains. The ductile nature of nickel allows the tubing to be easily manipulated. Unlike glass- or silica-lined stainless, EFNi can accept tight bends and cutting without heating, and does not release damaging glass fragments or silica particles.

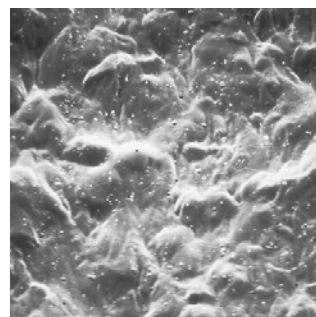
A comparison of the interiors of commonly used tubing (below) shows the quality of the electroformed nickel tubing surface. (All photos are x500 magnification.) The rough interior surface of the mill-drawn Nickel 200 tubing has potential for carryover or cross contamination, and both the Nickel 200 and the stainless steel contain pits, voids, striations, and particles – problems which intensify as the ID decreases.



Electroformed nickel (EFNi)



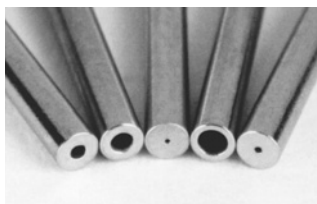
Nickel 200 alloy



Type 316 stainless steel

### Cutting and Cleaning

Each piece of EFNi tubing is specially cleaned with micro-filtered steam from deionized water to remove both organic and inorganic contaminants, resulting in tubing that is much cleaner for analytical applications than tubing “cleaned” with organic solvents – the most common methods. After cleaning, each piece of tubing is tested with high purity helium at 4,000 psig.



### Available Sizes

EFNi tubing is available in 360  $\mu$ m, 1/32", and 1/16" OD's. ID's range from .001" to .007" for 360  $\mu$ m tubing, .002" to .020" for 1/32" tubing, and .020" to .040" for 1/16" tubing. Custom ID's/OD's are available upon request.

## Ordering Electroformed Nickel Tubing

For pricing purposes, the length is rounded up to the next foot. For example, a 5" piece is charged as one foot; an 18" piece as two feet. The price per foot is based on the length of each piece, not the total quantity ordered. Cutting and cleaning charges are included in the price per foot.

### 360 µm OD

ID	Prod No	Max length
.001"	TEFNI.101	1 foot
.002"	TEFNI.102	2 feet
.004"	TEFNI.104	10 feet
.005"	TEFNI.105	10 feet
.007"	TEFNI.107	10 feet

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### 1/32" OD

ID	Prod No	Max length
.002"	TEFNI.502	2 feet
.004"	TEFNI.504	10 feet
.005"	TEFNI.505	10 feet
.007"	TEFNI.507	10 feet
.010"	TEFNI.510	10 feet
.012"	TEFNI.512	10 feet
.015"	TEFNI.515	10 feet
.020"	TEFNI.520	10 feet

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### 1/16" OD

ID	Prod No	Max length
.020"	TEFNI120	10 feet
.030"	TEFNI130	20 feet
.040"	TEFNI140	50 feet

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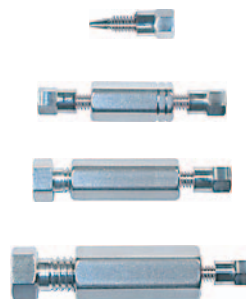
## Fittings for 360 µm Tubing

Our new high pressure fittings permit direct connection of 360 micron OD tubing without the use of liners. The ferrule snaps into the nut so that the fitting is "one-piece". Fittings are also available for 360 micron OD fused silica and PEEK tubing.

### 360 micron fittings

Description	Bore	Prod No
Nut/ferrule	—	C360NFS6
Cap	—	C360C
Union	50 micron	C360US62
	100 micron	C360US64
	150 micron	C360US66
1/32" to 360 µm reducing union	50 micron	C360RU.5S62
	100 micron	C360RU.5S64
	150 micron	C360RU.5S66
1/16" to 360 µm reducing union	150 micron	C360RU1S66

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Stainless 360 µm nut/ferrule, union, 1/32" to 360 µm reducing union, and 1/16" to 360 µm reducing union, shown actual size

North America, South America, and Australia/Oceania contact:

**VICI® Valco Instruments Co. Inc.**  
tel: 800 367-8424  
fax: 713 688-8106  
valco@vici.com

Europe, Asia, and Africa contact:

**VICI® VICI AG International**  
tel: Int + 41 41 925-6200  
fax: Int + 41 41 925-6201  
info@vici.ch

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