

Stainless Steel Tubing

- ▶ Precut 316 stainless steel*
- ▶ Available ODs include 0.020", 1/32", 1/16", and 1/8"
- ▶ Color-coded banding for easy identification of the inner diameter

IDEX Health & Science seamless, precut stainless steel tubing is designed to meet the exacting requirements of today's analyses. We machine cut and polish each end, deburr the inside and outside edges, and passivate the tubing (please see the passivation information on this page). Finally, we flush reagent-grade isopropanol through each piece.

Our thorough preparation and cleaning procedure guarantees tubing that is truly ready-to-use, with flat, burr-free ends and a clean finish. This care is important in achieving zero-dead-volume connections and good chromatographic results.

We offer a variety of precut lengths as well as longer lengths (5' and 25') of some sizes. Cutting the tubing disturbs and roughens the tubing's end surface, so we recommend using our precut tubing whenever possible. If you need to cut tubing to custom lengths, we suggest you then passivate the tubing. For a description of a cold passivation process, please contact IDEX Health & Science or visit our website at www.idex-hs.com and search for "stainless steel tubing."

* Except our 0.020" OD Stainless Steel Tubing, which is manufactured from 304 series stainless steel.



APPLICATION NOTE

- ▶ Our 1/32" OD tubing is designed for enhanced flexibility in high pressure applications.
- ▶ Standard 1/16" and 1/8" OD stainless steel tubing is suited for most analytical applications.

SPECIFICATIONS & DETAILS

- ▶ Maximum Recommended Operating Temperature: 750 °F (399 °C).
- ▶ Rockwell Hardness (B): Maximum of 95.
- ▶ Meets ASTM A269 and A213.

Tubing OD	OD Tolerance	Tubing ID	ID Tolerance
0.020"	±0.0005" (12.5 µm)	All	±0.0005" (12.5 µm)
1/32"	+0.002"/-0.000" (+50 µm/-0 µm)	All, except 0.004" (0.10 mm)	+0.000"/-0.002" (+0 µm/-50 µm)
1/32"	+0.002"/-0.000" (+50 µm/-0 µm)	0.004" (0.10 mm)	+0.002"/-0.000" (+50 µm/-0 µm)
1/16"	+0.002"/-0.000" (+50 µm/-0 µm)	All	±0.001" (25 µm)
1/8"	±0.003" (75 µm)	All	±0.003" (75 µm)

RELATED PRODUCTS

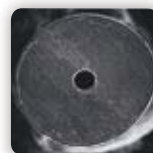
- ▶ Our 0.020" OD tubing is the size of choice for the Rheodyne® Model 8125 Micro-Scale Injector Valve (page 132).
- ▶ PEEK polymer tubing is available in all of these sizes, listed on pages 66–67.

NOTE

PEEK polymer tubing can be used to replace stainless steel tubing in most liquid analytical systems. Unlike stainless steel tubing, PEEK tubing is biocompatible, flexible, and can easily be cut to desired lengths. See pages 66–68.

All Stainless Steel tubing longer than 1 m is coiled.

The Beauty of Precut Tubing



Precut tubing



Tubing cut by a commercially available tubing cutter



File cut tubing

Stainless Steel Tubing Passivation

Stainless steel is naturally self-passivating, forming an oxidized layer on newly created surfaces. IDEX Health & Science takes extra steps to ensure the chemical resistance of our stainless steel tubing by manually passivating before and after the tubing is cut into specified lengths (except in a few cases where size is prohibitive). In the precut stage, the internal wall is acid passivated and flushed. After the tubing is cut, deburred and polished, it is completely submerged in an acid passivation bath and again flushed clean. The table below summarizes the manual passivation steps performed for each size of our stainless steel tubing:

Tubing OD	Precut Passivation	Postcut Passivation
0.020"	All	All
1/32"	All	All
1/16"	All	All, ex. 25' lengths
1/8"	None	All, ex. 3 & 5 m lengths

NOTE

Understanding the Maximum Pressure Value of Stainless Steel Tubing

Stainless steel is unique as a material. The Maximum Pressure value listed for each part number is the safe, continuous working pressure limit that IDEX Health & Science has assigned for the tubing. It reflects a safety margin before the tubing begins to “yield” — which is well below the tubing’s “burst” pressure. For more information, contact IDEX Health & Science or your authorized Distributor.

Part No.	ID	Length	Color	Maximum Pressure
STAINLESS STEEL, 0.020" OD				
U-119	0.005" (0.125 mm)	5 cm (2")	N/A	17,200 psi (1,186 bar)
U-120	0.005" (0.125 mm)	10 cm (4")	N/A	17,200 psi (1,186 bar)
U-121	0.005" (0.125 mm)	20 cm (8")	N/A	17,200 psi (1,186 bar)
U-122	0.005" (0.125 mm)	30 cm (12")	N/A	17,200 psi (1,186 bar)
U-123	0.005" (0.125 mm)	50 cm (1.6')	N/A	17,200 psi (1,186 bar)
U-124	0.005" (0.125 mm)	1 m (3.2')	N/A	17,200 psi (1,186 bar)
U-125	0.005" (0.125 mm)	1.5 m (5')	N/A	17,200 psi (1,186 bar)
STAINLESS STEEL, 1/32" OD				
U-1114	0.004" (0.10 mm)	5 cm (2")	Red	19,300 psi (1,331 bar)
U-1115	0.004" (0.10 mm)	10 cm (4")	Red	19,300 psi (1,331 bar)
U-1116	0.004" (0.10 mm)	20 cm (8")	Red	19,300 psi (1,331 bar)
U-1117	0.004" (0.10 mm)	30 cm (12")	Red	19,300 psi (1,331 bar)
U-1120	0.006" (0.15 mm)	5 cm (2")	Yellow	19,300 psi (1,331 bar)
U-1121	0.006" (0.15 mm)	10 cm (4")	Yellow	19,300 psi (1,331 bar)
U-1122	0.006" (0.15 mm)	20 cm (8")	Yellow	19,300 psi (1,331 bar)
U-1123	0.006" (0.15 mm)	30 cm (12")	Yellow	19,300 psi (1,331 bar)
U-1125	0.008" (0.20 mm)	5 cm (2")	Clear	17,800 psi (1,227 bar)
U-1126	0.008" (0.20 mm)	10 cm (4")	Clear	17,800 psi (1,227 bar)
U-1127	0.008" (0.20 mm)	20 cm (8")	Clear	17,800 psi (1,227 bar)
★ U-1128	0.008" (0.20 mm)	30 cm (12")	Clear	17,800 psi (1,227 bar)
U-1130	0.010" (0.25 mm)	5 cm (2")	Blue	16,200 psi (1,117 bar)
U-1131	0.010" (0.25 mm)	10 cm (4")	Blue	16,200 psi (1,117 bar)
U-1132	0.010" (0.25 mm)	20 cm (8")	Blue	16,200 psi (1,117 bar)
U-1133	0.010" (0.25 mm)	30 cm (12")	Blue	16,200 psi (1,117 bar)
U-1140	0.015" (0.40 mm)	5 cm (2")	Green	12,300 psi (848 bar)
U-1141	0.015" (0.40 mm)	10 cm (4")	Green	12,300 psi (848 bar)
U-1142	0.015" (0.40 mm)	20 cm (8")	Green	12,300 psi (848 bar)
U-1143	0.015" (0.40 mm)	30 cm (12")	Green	12,300 psi (848 bar)
U-1145	0.018" (0.45 mm)	5 cm (2")	Black	10,000 psi (689 bar)
U-1146	0.018" (0.45 mm)	10 cm (4")	Black	10,000 psi (689 bar)
U-1147	0.018" (0.45 mm)	20 cm (8")	Black	10,000 psi (689 bar)
U-1148	0.018" (0.45 mm)	30 cm (12")	Black	10,000 psi (689 bar)

Part No.	ID	Length	Color	Maximum Pressure
STAINLESS STEEL, 1/16" OD				
U-220	0.004" (0.100 mm)	5 cm (2")	N/A	22,100 psi (1,523 bar)
U-221	0.004" (0.100 mm)	10 cm (4")	N/A	22,100 psi (1,523 bar)
U-222	0.004" (0.100 mm)	20 cm (8")	N/A	22,100 psi (1,523 bar)
U-223	0.004" (0.100 mm)	30 cm (12")	N/A	22,100 psi (1,523 bar)
U-224	0.004" (0.100 mm)	0.5 m (1.6')	N/A	22,100 psi (1,523 bar)
U-225	0.004" (0.100 mm)	1 m (3.2')	N/A	22,100 psi (1,523 bar)
U-152	0.005" (0.125 mm)	5 cm (2")	Red	21,600 psi (1,489 bar)
U-153	0.005" (0.125 mm)	10 cm (4")	Red	21,600 psi (1,489 bar)
U-154	0.005" (0.125 mm)	20 cm (8")	Red	21,600 psi (1,489 bar)
U-155	0.005" (0.125 mm)	30 cm (12")	Red	21,600 psi (1,489 bar)
U-156	0.005" (0.125 mm)	0.5 m (1.6')	Red	21,600 psi (1,489 bar)
U-157	0.005" (0.125 mm)	1 m (3.2')	Red	21,600 psi (1,489 bar)
U-158	0.005" (0.125 mm)	1.5 m (5')	Red	21,600 psi (1,489 bar)
U-160	0.005" (0.125 mm)	7.6 m (25')	Red	21,600 psi (1,489 bar)
U-126	0.007" (0.175 mm)	5 cm (2")	Black	20,900 psi (1,441 bar)
U-127	0.007" (0.175 mm)	10 cm (4")	Black	20,900 psi (1,441 bar)
U-128	0.007" (0.175 mm)	20 cm (8")	Black	20,900 psi (1,441 bar)
U-129	0.007" (0.175 mm)	30 cm (12")	Black	20,900 psi (1,441 bar)
U-130	0.007" (0.175 mm)	0.5 m (1.6')	Black	20,900 psi (1,441 bar)
U-131	0.007" (0.175 mm)	1 m (3.2')	Black	20,900 psi (1,441 bar)
U-108	0.007" (0.175 mm)	1.5 m (5')	Black	20,900 psi (1,441 bar)
U-161	0.007" (0.175 mm)	7.6 m (25')	Black	20,900 psi (1,441 bar)
★ U-111	0.010" (0.25 mm)	5 cm (2")	Blue	19,700 psi (1,358 bar)
★ U-112	0.010" (0.25 mm)	10 cm (4")	Blue	19,700 psi (1,358 bar)
U-113	0.010" (0.25 mm)	20 cm (8")	Blue	19,700 psi (1,358 bar)
★ U-114	0.010" (0.25 mm)	30 cm (12")	Blue	19,700 psi (1,358 bar)
U-132	0.010" (0.25 mm)	0.5 m (1.6')	Blue	19,700 psi (1,358 bar)
U-133	0.010" (0.25 mm)	1 m (3.2')	Blue	19,700 psi (1,358 bar)
U-106	0.010" (0.25 mm)	1.5 m (5')	Blue	19,700 psi (1,358 bar)
U-162	0.010" (0.25 mm)	7.6 m (25')	Blue	19,700 psi (1,358 bar)
U-101	0.020" (0.5 mm)	5 cm (2")	Yellow	15,800 psi (1,089 bar)
U-102	0.020" (0.5 mm)	10 cm (4")	Yellow	15,800 psi (1,089 bar)
U-103	0.020" (0.5 mm)	20 cm (8")	Yellow	15,800 psi (1,089 bar)
U-104	0.020" (0.5 mm)	30 cm (12")	Yellow	15,800 psi (1,089 bar)
U-134	0.020" (0.5 mm)	0.5 m (1.6')	Yellow	15,800 psi (1,089 bar)
U-135	0.020" (0.5 mm)	1 m (3.2')	Yellow	15,800 psi (1,089 bar)
★ U-105	0.020" (0.5 mm)	1.5 m (5')	Yellow	15,800 psi (1,089 bar)
U-163	0.020" (0.5 mm)	7.6 m (25')	Yellow	15,800 psi (1,089 bar)
U-115	0.030" (0.75 mm)	5 cm (2")	White	12,000 psi (827 bar)
U-116	0.030" (0.75 mm)	10 cm (4")	White	12,000 psi (827 bar)
U-117	0.030" (0.75 mm)	20 cm (8")	White	12,000 psi (827 bar)
U-118	0.030" (0.75 mm)	30 cm (12")	White	12,000 psi (827 bar)
U-136	0.030" (0.75 mm)	0.5 m (1.6')	White	12,000 psi (827 bar)
U-137	0.030" (0.75 mm)	1 m (3.2')	White	12,000 psi (827 bar)
★ U-107	0.030" (0.75 mm)	1.5 m (5')	White	12,000 psi (827 bar)
★ U-164	0.030" (0.75 mm)	7.6 m (25')	White	12,000 psi (827 bar)
U-138	0.040" (1.0 mm)	5 cm (2")	N/A	8,100 psi (558 bar)
U-139	0.040" (1.0 mm)	10 cm (4")	N/A	8,100 psi (558 bar)
U-140	0.040" (1.0 mm)	20 cm (8")	N/A	8,100 psi (558 bar)
U-141	0.040" (1.0 mm)	30 cm (12")	N/A	8,100 psi (558 bar)
U-142	0.040" (1.0 mm)	0.5 m (1.6')	N/A	8,100 psi (558 bar)
U-143	0.040" (1.0 mm)	1 m (3.2')	N/A	8,100 psi (558 bar)
U-144	0.040" (1.0 mm)	1.5 m (5')	N/A	8,100 psi (558 bar)
★ U-165	0.040" (1.0 mm)	7.6 m (25')	N/A	8,100 psi (558 bar)
U-145	0.046" (1.15 mm)	5 cm (2")	N/A	5,800 psi (400 bar)
U-146	0.046" (1.15 mm)	10 cm (4")	N/A	5,800 psi (400 bar)
U-147	0.046" (1.15 mm)	20 cm (8")	N/A	5,800 psi (400 bar)
U-148	0.046" (1.15 mm)	30 cm (12")	N/A	5,800 psi (400 bar)
U-149	0.046" (1.15 mm)	0.5 m (1.6')	N/A	5,800 psi (400 bar)
U-150	0.046" (1.15 mm)	1 m (3.2')	N/A	5,800 psi (400 bar)
U-151	0.046" (1.15 mm)	1.5 m (5')	N/A	5,800 psi (400 bar)
STAINLESS STEEL, 1/8" OD				
U-815	0.080" (2.0 mm)	15 cm (6")	N/A	7,600 psi (524 bar)
U-825	0.080" (2.0 mm)	25 cm (10")	N/A	7,600 psi (524 bar)
U-800	0.080" (2.0 mm)	1 m (3.2')	N/A	7,600 psi (524 bar)
U-803	0.080" (2.0 mm)	3 m (9.8')	N/A	7,600 psi (524 bar)
U-805	0.080" (2.0 mm)	5 m (16')	N/A	7,600 psi (524 bar)