



**DUAL CONTAINMENT
PRODUCTS**

*Enabling uninterrupted process lines and increased safety
at lower cost per installed foot of tubing*

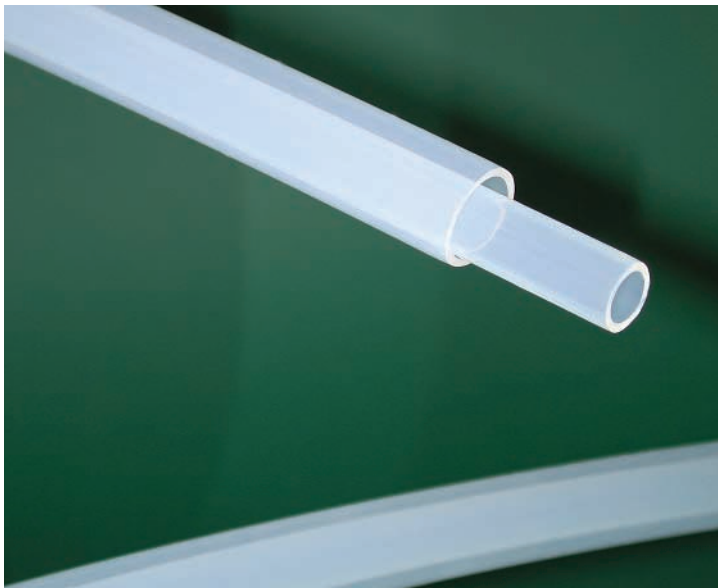


Enabling uninterrupted process lines and increased safety

FluoroLine® Dual Containment Tubing

Clean, Continuous Lengths

Entegris offers dual containment tubing for use in high purity tubing runs in sub fabs. This innovative product allows long, continuous dual contained tubing lengths without the introduction of contaminants common when pulling tubing through traditional PVC secondary containment.



Flexible dual containment tubing reduces contamination potential and enables long, continuous lengths while reducing installation costs.

PFA Primary Containment

Entegris offers three grades of FluoroLine® PFA tubing for primary containment: 4400 high purity PFA plus, 4300 high purity high molecular weight (HMW) PFA and 4200 high purity PFA. Each is made from 100% virgin PFA material and is ideal for use in ultrapure, highly corrosive applications. PFA primary containment tubing is available in $\frac{1}{4}$ ", $\frac{1}{2}$ " and $\frac{3}{4}$ " sizes.

FEP Secondary Containment

FluoroLine® 2000 FEP tubing comprises the secondary containment in Entegris' dual containment tubing. FEP material offers similar chemical resistance as PFA with improved permeation resistance and clarity for easy visual inspection of primary tubing. Unlike rigid PVC pipe, which is commonly used for secondary containment, FEP tubing is flexible and bends easily. No heat bending of containment pipe or tensile pulling primary tubing is required during installation. FEP secondary containment is available in $\frac{1}{2}$ ", $\frac{3}{4}$ " and 1" sizes.

Fast and Easy Installation

FluoroLine® dual containment tubing is quick and easy to install. Because Entegris' dual containment tubing is available in long, continuous lengths, you no longer have to weld PVC pipe sections together to create the secondary containment system. In addition, the primary tubing does not need to be pulled through PVC pipe on-site – dramatically reducing installation and labor cost.

Tube Cutter

Entegris has designed a special tube cutter (patent-pending) that scores the secondary tubing without damaging the primary tube, reducing potential rework and scrap.

Features and Benefits

Features	Benefits
PFA primary containment	<ul style="list-style-type: none"> • Universal chemical compatibility
FEP secondary containment	<ul style="list-style-type: none"> • Easy visual inspection of primary tubing • More chemically compatible than PVC • Low cost
Tube-in-tube design	<ul style="list-style-type: none"> • No contaminants are introduced during installation process • Long, continuous lengths are possible without connections or welding • Faster, less labor intensive installation • Considerable total cost reduction per foot of installed tubing
Flexible tubing	<ul style="list-style-type: none"> • No tensile pulls are introduced on tubing • Does not kink as result of pulling through PVC secondary containment • No special and expensive welding or heat bending processes are required
Laser marking on both inner and outer tubing	<ul style="list-style-type: none"> • Enables traceability to the work order and inspection record

Tubing Ordering Information

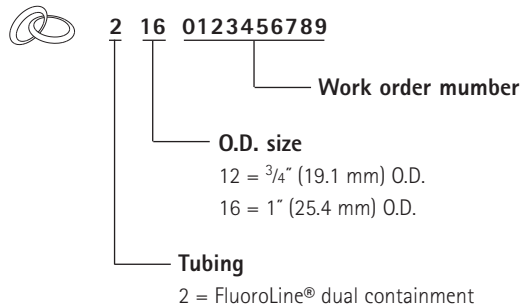
For pressure and temperature ratings of FluoroLine® tubing, visit Entegris' Web site at www.entegrisfluidhandling.com or refer to Entegris' *Fluid Handling Products* catalog. FEP tubing is not recommended for elevated temperature and pressure applications. Contact Entegris, Inc. for additional information.

Part Number*	Tubing Material	Process Line	Maximum Reel Length
DCT500E-250U-350+			
Process line	FluoroLine® 4300 HP HMW	1/4"	350 ft.
Secondary containment line	FluoroLine® 2000 FEP	1/2"	
<i>*Laser marking is not available on the 1/2" FEP outer containment.</i>			
DCT750E-500U-1500			
Process line	FluoroLine® 4300 HP HMW	1/2"	1500 ft.
Secondary containment line	FluoroLine® 2000 FEP	3/4"	
DCT1000E-750U-750			
Process line	FluoroLine® 4300 HP HMW	3/4"	750 ft.
Secondary containment line	FluoroLine® 2000 FEP	1"	

**Primary containment is also available in FluoroLine® 4400 HP PFA Plus and 4200 HP PFA tubing as a special order. To order FluoroLine® 4400 HP PFA Plus tubing, replace the "U" in the part number above with an "X." To order FluoroLine® 4200 HP PFA tubing, replace the "U" in the part number above with an "A". Contact Entegris for a price quote.*

Part Number	O.D.	O.D. Tolerance	I.D.	Wall Thickness	Wall Thickness Tolerance	Minimum Bend Radius
DCT500E-250U-350						
Process line	.250" (6.35 mm)	±.004" (±.102 mm)	.156" (3.96 mm)	.047" (1.19 mm)	±.004" (±.102 mm)	1.5" (38 mm)
Secondary containment line	.500" (12.70 mm)	±.005" (±.127 mm)	.376" (9.55 mm)	.062" (1.57 mm)	±.005" (±.127 mm)	2.8" (70 mm)
DCT750E-500U-1500						
Process line	.500" (12.70 mm)	±.005" (±.127 mm)	.376" (9.55 mm)	.062" (1.57 mm)	±.005" (±.127 mm)	2.3" (58 mm)
Secondary containment line	.750" (19.05 mm)	±.005" (±.127 mm)	.626" (15.90 mm)	.062" (1.57 mm)	±.005" (±.127 mm)	9.0" (229 mm)
DCT1000E-750U-750						
Process line	.750" (19.05 mm)	±.005" (±.127 mm)	.626" (15.90 mm)	.062" (1.57 mm)	±.005" (±.127 mm)	9.0" (229 mm)
Secondary containment line	1.000" (25.40 mm)	±.005" (±.127 mm)	.876" (22.25 mm)	.062" (1.57 mm)	±.005" (±.127 mm)	11.0" (279 mm)

Laser Marking Codes



Dual Containment Tubing Cutter



Entegris' tube cutter (patent-pending) delicately scores the secondary containment tubing without penetrating the primary tubing. Once scored, simply snap it off.

Part Number	Description
213-203	Tube cutter for 1/2" secondary containment tubing
213-204	Tube cutter for 3/4" secondary containment tubing
213-205	Tube cutter for 1" secondary containment tubing

Flaretek® PFA Dual Containment Fittings

Fewer Connections, Fewer Leak Points

Entegris offers molded PFA dual containment fittings that address the dual containment needs of today's advanced processes. The pass-through dual containment fitting was designed around Entegris' industry leading Flaretek® and Quikgrip® fittings. This high-performing extension of the proven Entegris fitting technologies offers fewer connections, easier assembly and fewer leak points.

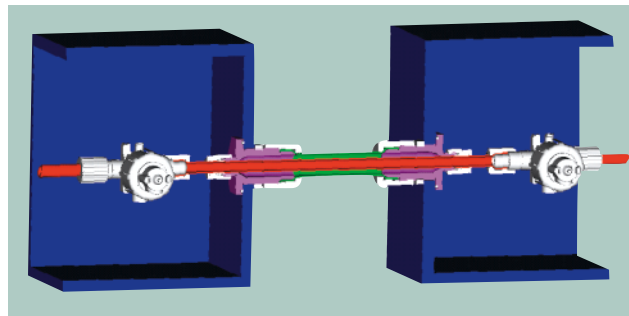
Uninterrupted Tubing Runs

This fitting is the only fitting on the market to offer true dual containment from one box to the next. The advanced fitting enables a process line to pass through a wall to the next component – uninterrupted. Special corrugated tubing is not required for secondary containment, thus enabling the use of standard, straight-wall tubing – a great cost advantage.

In addition, the dual containment fitting has an o-ring that seals the fitting at the cabinet wall. This seal prevents fluid from escaping through the panel mount hole – maintaining cabinet integrity in the event of a leak and increasing safety to a level unmatched by competitive fittings.

Reduce Contamination, Increase Safety

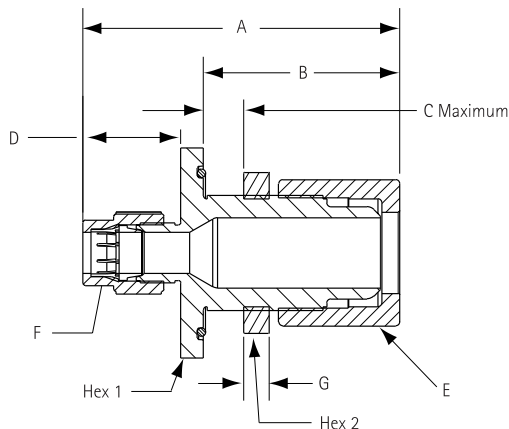
Flaretek® dual containment fittings support 1/4" to 3/4" process lines, with secondary lines from 1/2" to 1". The fitting assembly adapts to panels that are up to 1/2" thick. These fittings also work well in conjunction with Espy® sensors – an ideal means of quickly detecting leaks in a process line, reducing contamination and increasing safety.



Patented dual containment fitting enables uninterrupted tubing runs.

Fitting Ordering Information

Part Number	Process Line	Secondary Containment Line	Dimensions				Port Connection E	Port Connection F	Dimension G	Panel Mount Hole		Diameter
			A	B	C	D				Hex 1	Hex 2	
DCC8F-4GN-1	1/4"	1/2"	3.37" (85.6 mm)	2.06" (52.3 mm)	0.50" (12.7 mm)	1.03" (26.2 mm)	1/2" Flaretek®	1/4" Quikgrip®	0.32" (8.1 mm)	1 3/8"	1 1/16"	0.75" (19.0 mm)
DCC12F-6GN-1	3/8"	3/4"	3.77" (95.8 mm)	2.36" (59.9 mm)	0.50" (12.7 mm)	1.13" (28.7 mm)	3/4" Flaretek®	3/8" Quikgrip®	0.38" (9.7 mm)	1 5/8"	1 5/16"	1.00" (25.4 mm)
DCC12F-8GN-1	1/2"	3/4"	3.85" (97.8 mm)	2.36" (59.9 mm)	0.50" (12.7 mm)	1.21" (30.7 mm)	3/4" Flaretek®	1/2" Quikgrip®	0.38" (9.7 mm)	1 5/8"	1 5/16"	1.00" (25.4 mm)
DCC16F-8GN-1	1/2"	1"	3.92" (99.6 mm)	2.43" (61.7 mm)	0.50" (12.7 mm)	1.21" (30.7 mm)	1" Flaretek®	1/2" Quikgrip®	0.32" (8.1 mm)	2 1/4"	1 3/4"	1.50" (38.1 mm)
DCC16F-12GN-1	3/4"	1"	4.13" (104.9 mm)	2.43" (61.7 mm)	0.50" (12.7 mm)	1.42" (36.1 mm)	1" Flaretek®	3/4" Quikgrip®	0.32" (8.1 mm)	2 1/4"	1 3/4"	1.50" (38.1 mm)



Terms and Conditions of Sale

WARRANTY – Entegris warrants each new product against defects in materials and workmanship for the following periods of time from shipment: Microelectronics Group products, Custom products – 90 days; Entegris™ Cleaning Systems and AutoPod™ Wafer Carriers – 1 year; Fluid Handling Group products (except as separately identified below) including FluoroPure® Chemical Container products – 1 year; Sheetlined Chemical Container products and FluoroPure® PFA Liners (blistering, cracking or leakage only) – 18 months; FluoroPure® o-rings and gasket materials – 90 days. Entegris makes no warranty, express or implied, with respect to any components, products or services provided by any third party. With respect to products specially manufactured to Buyer's specifications, Entegris warrants only that such products have been manufactured, without testing, to Buyer's specifications but makes no other warranty, express or implied. Upon Entegris' confirmation of defects, Entegris agrees, as its **exclusive remedy** to repair or, in its discretion, replace defective product without charge. Entegris is not responsible for product damage resulting from accident, misuse, or lack of reasonable care. **IMPORTANT: No other warranty, written or verbal, is authorized by Entegris. Entegris is not liable for any special, incidental or consequential damages. Implied warranties of merchantability and fitness for a particular purpose are specifically disclaimed.**

For More Information

To learn more about Entegris' innovative dual containment products contact your local Entegris distributor or Entegris, Inc.

To review our complete line of fluid handling solutions see Entegris' *Fluid Handling Products* catalog, visit Entegris' Web site at www.entegrisfluidhandling.com or contact Entegris Customer Service for your free *Fluid Handling Products* catalog on CD-ROM.

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