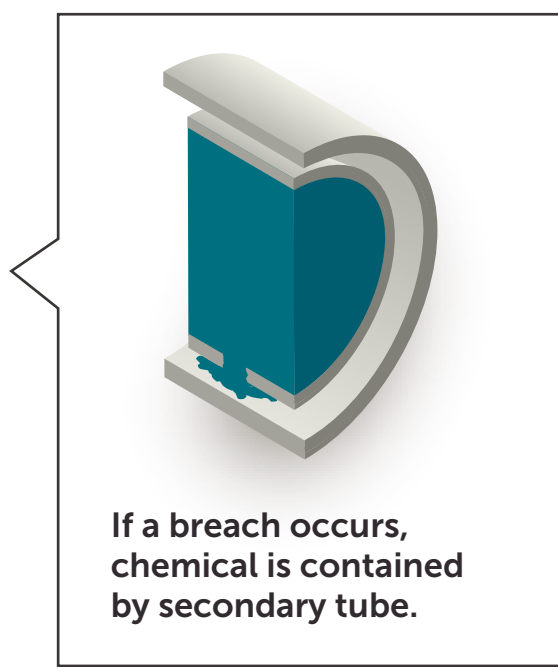
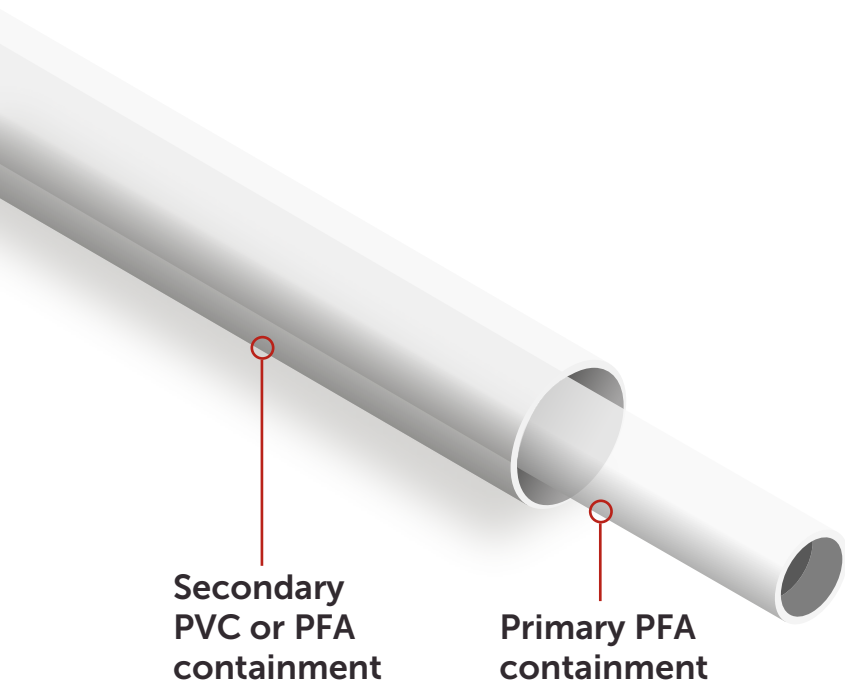


# Saving Time and Money with All-PFA Dual Containment Tubing

Semiconductor fabs deal in chemistries that are highly volatile and toxic if exposed to humans. For safety, the tubing that transports these chemicals must have a primary and secondary containment so that any breach is automatically contained. Conventional PVC-based dual containment tubing is typically costly and time-consuming to install and replace. Entegris offers a flexible, cost-effective, coextruded, all-PFA alternative. Here's how they compare.

## FLUOROLINE® PLUS DUAL CONTAINMENT TUBING

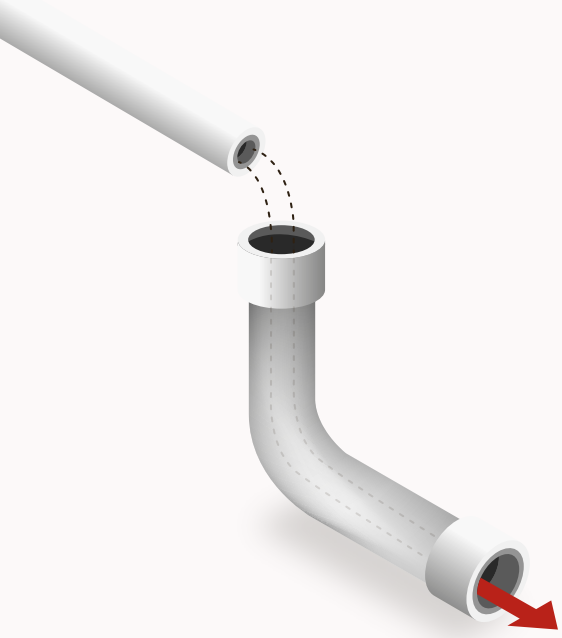
All dual contained tubing uses high-purity PFA for its primary, chemical-contact material, which is flexible and chemically inert. The outer secondary containment is traditionally made from PVC; however, Entegris recommends PFA FluoroLine® Plus dual containment tubing.



## PVC VERSUS PFA INSTALLATION

### PVC INSTALLATION

A PVC outer pipe system must be installed first, and then the PFA primary tube is pulled through. This is extremely time consuming, requires two separate process steps to perform, and risks introducing contamination or damaging the primary tube.



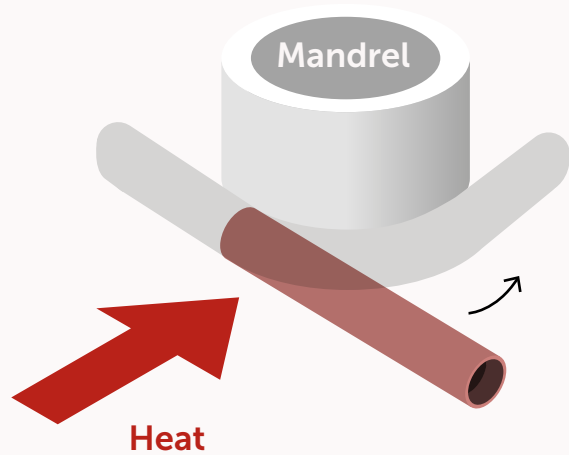
### PFA INSTALLATION

Coextruded in an ISO Class 8 cleanroom, dual contained PFA tubing arrives on a reel and can be installed in one, cost-effective, time-saving step without handling the PFA primary tube.



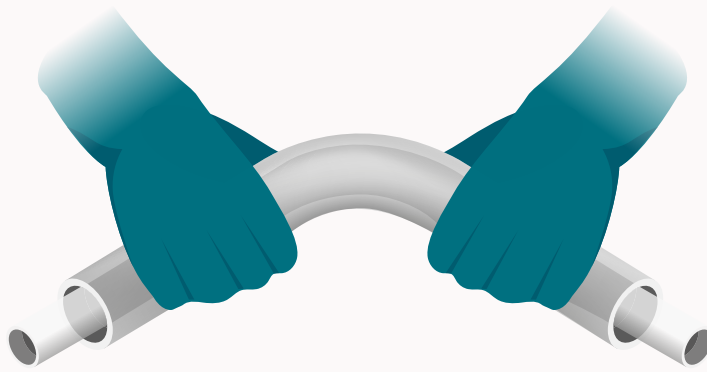
### PVC TURNS AND BENDS

To accommodate corners and avoid obstacles, curved PVC must be custom made by manually heat forming the pipe.



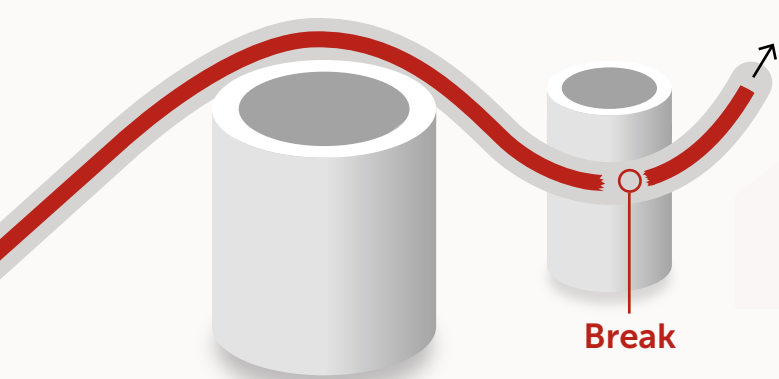
### PFA TURNS AND BENDS

PFA is flexible and can be easily bent by hand around existing facilities and infrastructure.



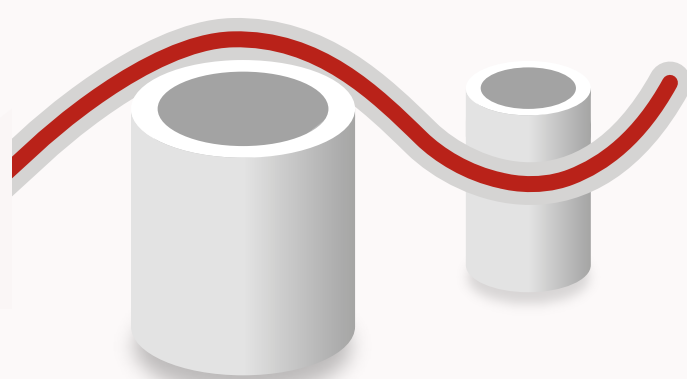
### PVC PULL FORCES

Because PFA tubing must be pulled through the pre-installed, rigid PVC, multiple bends increase the frictional forces causing the PFA to stretch, weaken, or even break during installation.

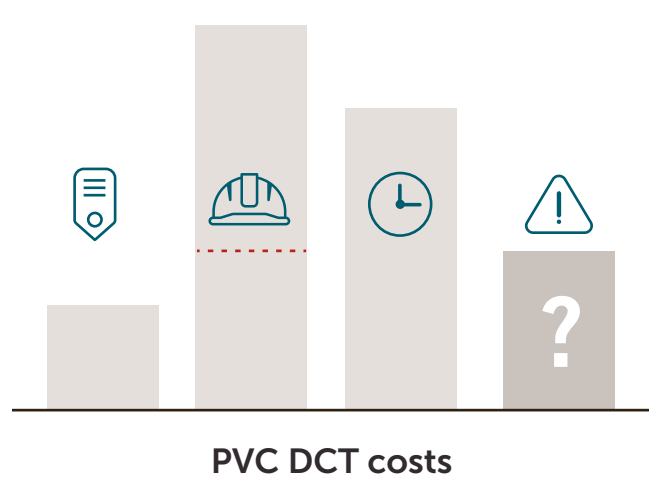


### PFA PULL FORCES

Because PFA dual containment tubing comes pre-assembled, pull forces are eliminated and the system can accommodate more complex routing without compromising the system.



## TOTAL COST SAVINGS



When analyzing the cost benefit of installing or replacing tubing, there are four primary cost factors:

- Materials**
- Installation time and labor**
- Process downtime**
- Overruns from installation difficulties**

All-PFA, FluoroLine Plus dual containment tubing from Entegris provides cost certainty, installation flexibility, and facility safety. By any comparison it is the clear winner.

[www.entegris.com/dct](http://www.entegris.com/dct)