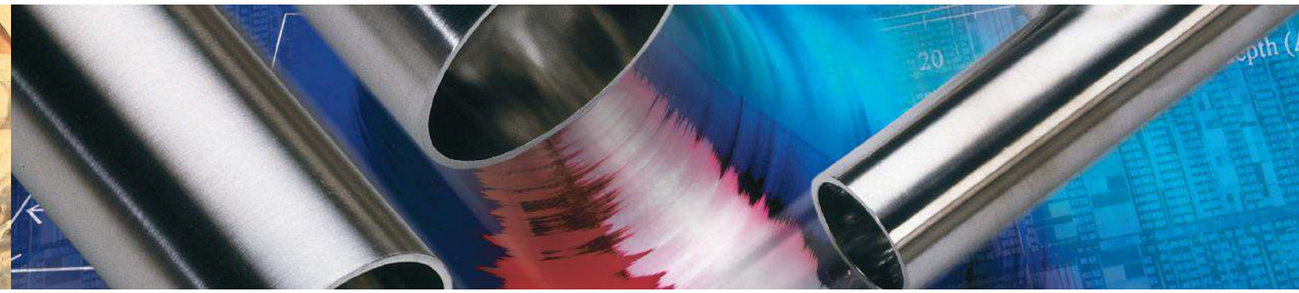
CARDINAL UHP



www.cardinaluhp.com

Innovations in UHP Tubing

EP COIL Tech 50CR Electropolished Tubing

EP PAK Heated Tech 50CR Tubing

CARDINAL UHP AMETEK®

BELGIUM • BRAZIL • CHINA • SINGAPORE • SOUTH KOREA • RUSSIA • USA
sales.cardinal@ametek.com • www.obcorp.com

Certified System ISO 9001

AMETEK®

EP COIL - Tech 50CR

Electropolished and Dual Containment Tubing
for Ultra High Purity Semiconductor & Biopharmaceutical Applications

- Fewer Welds
- Quicker Installation
- On-Time Delivery
- World-Class Quality Assurance
- 1/8", 1/4", 3/8", and 1/2" Seamless Tubing
- Reduced Start-Up Dry-Down Time
- Jumper and Purge Lines

Electropolished Coiled Tubing

Cardinal Electropolished Coil is constructed from seamless 316L stainless steel for excellent corrosion resistance and good weldability. All Electropolished Coil is marked for traceability.

Cardinal's unyielding commitment to quality is evident in every step of our manufacturing process. Electropolished Coil is inspected by Cardinal's highly trained inspectors, and produced in accordance with an ISO 9001 registered quality system. All Electropolished Coil is inspected, cleaned, packaged in a class 10 cleanroom, and always delivered on-time to you.

Dual Containment - Tube in Tube

Electropolished coil is also available in dual containment configurations.

Maximum Lengths

1/4" OD Process x 1/2" OD Containment	100M/330'
3/8" OD Process x 5/8" OD Containment	100M/330'

Specifications - Tech 50CR

- Electropolished to 10 µin / 0.25 µm Ra.
- 316L SS tubing meets ASTM specifications for consistent physical, dimensional and chemical composition.
- Controlled sulfur content to insure consistent weldability and reduced non-metallic inclusions.
- Final cleaning and packaging performed in a Class 10 (ISO Class 4) cleanroom.
- 0.1 µ filtered 60°C DI water rinse.
- 0.005 µ filtered 120°C Nitrogen dried.
- Used in ultra high purity gas, chemical distribution, and WFI systems.
- Certificate of Conformance.

Maximum Lengths

1/8" OD x 0.020" wall	60M/200'
1/4" OD x 0.035" wall	200M/660'
3/8" OD x 0.035" wall	140M/450'
1/2" OD x 0.049" wall	115M/375'

EP PAK

Taking Cardinal EP Coil one-step further
toward lowest installed cost.

- Maintain Up to 180°C
- PVC or TPU jacket
- Self Regulating Heaters
- Hazardous Area Heaters
- Consistent Temperature Maintenance
- Reduce Welding
- Minimum Installation Crafts

EP PAK

EP Pak uses the same UHP critical tubing (including dual containment configurations) Cardinal is known for in a pre-insulated and electrically heated bundle. EP Pak is delivered in long continuous spools. "Shorts" from 20' stick tubing is eliminated and your efficiency improves.

Pull EP Pak into place, cut it to length, weld each end then power up the tracer - your installation is done. Eliminate all the intermediate welds, the heater sizing and installation, cutting and fitting the insulation, multiple crafts – just like the bare EP Coil the installed savings are fantastic. At the same time you create a critical gas delivery system that is more reliable with less maintenance.

Factory installed electric heat tracing is applied under controlled conditions and provides heat transfer efficiency and consistency that cannot be duplicated with field constructed systems. There are no cold spots created by tubing support clamps or gapping insulation.

Factory installed temperature sensors insure that supply and exhaust lines are operating at the desired temperature. Cardinal installed sensors are carefully located using FEA computer thermal modeling so the temperature sensors reflect actual tube temperatures. (Field installed sensors may offset operating and set-point temperatures by 15°C.)

Install and support EP Pak as you would bare tubing, 'C' struts and cable trays are ideal for installation support.

Full material certification and documentation is available for all EP Pak designs.

Typical Cross Section of EP PAK