

**APPLICATION GUIDE: PRODUCTION & PROCESSING OF ACIDS & BASES**

**The Problem:**

Equipment and process issues arise when heating and cooling highly corrosive fluids such as Sulfuric, Nitric, Hydrochloric Acids, Hydrofluoric Acids, and bases such as Liquid Caustic. Most materials used in heat exchangers are affected by changes in temperature, concentration, or pH of the corrosive stream. This leads to fouling, scaling, and premature failure of both metal and graphite heat exchangers.

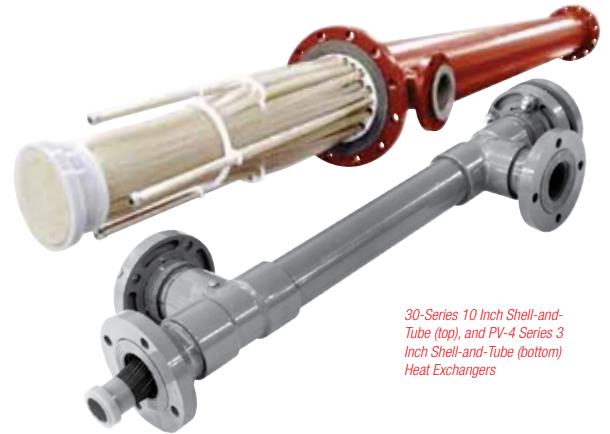
**The Solution:**

AMETEK Fluoropolymer Shell and Tube Heat Exchangers provide the ideal solution for heat exchange in processing corrosive liquids. Our Heat Exchangers provide unmatched resistance to corrosion, thermal/mechanical shock, and differential expansion. The original heat transfer efficiency of the exchanger is preserved by minimizing external fouling and internal scaling without surface passivation.

**The Fluoropolymer Advantage:**

AMETEK has been the original and the leading manufacturer of Fluoropolymer Shell and Tube Heat Exchangers for over 45 years. Our extensive, global experience in the Chemical Processing Industry allows us to provide customers with the experience and expertise needed to meet the ever-changing challenges in this competitive market.

AMETEK Fluoropolymer Heat Exchangers



30-Series 10 Inch Shell-and-Tube (top), and PV-4 Series 3 Inch Shell-and-Tube (bottom) Heat Exchangers

provide the user with increased productivity, efficiency, value-in-use through savings in plant maintenance, and extended heat exchanger service life. All units feature our proven, unique honeycomb structure which provides a lightweight, compact bundle design. The material is inert to nearly all chemicals, and affords heat exchanger versatility in plants with multiple corrosive streams. Fluoropolymer Heat exchangers are backed by AMETEK's excellent quality, service, and support.

AMETEK Fluoropolymer Shell and Tube Heat Exchangers are part of AMETEK's full product line of Fluoropolymer Heat Exchangers. A wide variety of capacities and sizes are available to meet virtually any type of process heat transfer requirement. AMETEK also provides coil configurations and specialty heat exchangers to meet the needs of custom applications.

**The Competitive Summary:**

Our Fluoropolymer material solves the typical problems which plague heat exchange equipment used in the Chemical Processing Industry. In demanding chemical processing applications, operational performance and overall life expectancy of AMETEK's heat exchangers are not compromised by these problems. AMETEK's superior performance and lead time advantage are summarized below.

	No Fouling	No Scaling	No Thermal Shock	No Differential Expansion	No Corrosion	Typical Availability
<b>Fluoropolymer</b>	✓	✓	✓	✓	✓	<b>6-8 weeks</b>
Titanium	✗	✗	✓	✓	✗	18-20 wks
Zirconium	✗	✗	✓	✓	✗	22-24 wks
Tantalum	✗	✗	✓	✓	✗	30-32 wks
Hastalloy	✗	✗	✓	✓	✗	18-20 wks
Graphite	✗	✗	✗	✗	✓	12-14 wks
Glass	✗	✗	✗	✗	✓	14-16 wks