



LEADING TECHNOLOGY

# XtreamPhase™ 4P & 4T

Replacement Option for Pall AquaSep® and PhaseSep®  
Liquid Phase Coalescers & Separators



The word coalesce means "to grow." In the case of liquid phase coalescence and separation, small droplets of immiscible liquids are suspended in a continuous phase liquid. With the aid of a filter cartridge, the droplets are immobilized in the fluid stream and grow larger, allowing other like droplets to collide with them. Upon collision, these droplets combine to form larger droplets. The larger mass droplets of the discontinuous phase become large enough that they are then separated from the continuous phase by gravity.

Designing the fiber matrix with appropriate surface energy fibers is critical to being able to accomplish liquid separation in the presence of low interfacial surface tension (IFT). With decades of filtration liquid phase separation experience, PECO continues to stay on the cutting edge of development with a vast array of coalescer and separator cartridge medias to meet the challenges and needs of our customers' processes.

XtreamPhase™ coalescers are available in PEACH® polymeric media or Timlar™ media. Both medias reduce disarming. Disarming occurs when surfactants shield/coat the coalescing media fibers (traditionally fiberglass) and change the surface energy of the fibers. This prevents the adsorptive attractions needed to efficiently separate the discontinuous phase.

Patented PEACH® polymeric media is recommended for water separation from hydrocarbons. Timlar™ proprietary media is recommended for low IFT and corrosive separation applications.



## Quench Water Treatment in Ethylene Plants

In ethylene production plants, quench water columns are used to cool cracked gases. Dilution steam and light hydrocarbons (pyrolysis gasoline) are condensed and mixed with the quench water. In order to re-use the quench water it has to be processed, typically by filtration. One filtration method is to first filter the water through a solids particulate filter housing, to remove coke fines, then take the water through a liquid/liquid phase separation housing to separate the hydrocarbons from the water.

PECO Surge™ MG and XtreamPure™ WGHT particulate filter cartridges are recommended as pre-filters to liquid/liquid phase separation.

PECO XtreamPhase™ 4T coalescer and separator cartridges are recommended to remove the hydrocarbons.

### Separation of two liquids is a complex science that is influenced by many factors such as:

- Surface Agents
- Interfacial Tension of the Liquid to be separated
- Specific Gravity of the Liquids to be separated
- Viscosity of the dispersed liquids
- Flux Rate for the System
- Liquid Velocity

# XtreamPhase™ 4P

Removal of Water from Hydrocarbon Liquids

Replacement option for Pall AquaSep® coalescer & separator cartridges: LCS2B1AH, LCS4B1AH and LSS2F2H

APPLICATIONS	MATERIALS	PERFORMANCE
<ul style="list-style-type: none"> <li>Water from Diesel</li> <li>Water from Gasoline</li> <li>Water from Kerosene</li> <li>Water from LPG</li> <li>Water from Condensate</li> <li>Water from Lube Oil</li> <li>Water from Petrochemicals</li> <li>Water from Aromatics</li> </ul>	<ul style="list-style-type: none"> <li><b>Filter Media</b> Coalescer - patented, PEACH® depth polymeric</li> <li><b>Separator</b> - hydrophobic, synthetic sleeve</li> <li><b>Hardware</b> 316L Stainless Steel</li> <li><b>O-Ring</b> Fluorocarbon</li> </ul>	<ul style="list-style-type: none"> <li>Max. Temperature 220°F / 104°C</li> <li>Recommended Change-Out 15 psid / 1.03 bard</li> <li>Max. dP 25 psid / 1.72 bard*</li> <li>pH Range 3 - 9</li> <li>Inlet discontinuous phase liquid concentration as high as 5% water by volume</li> <li>Removes discontinuous phase entrained free liquids down to 15 ppmv or less</li> </ul> <p>* Max dP may be limited by vessel manufacturer's design</p>

## Ordering Information

MODEL	STYLE	O.D. (in / mm)	Length (in / mm)
PLPC-P-420-EV S/S	Coalescer	3.7 in / 94mm	20 in / 508 mm
PLPC-P-440-EV S/S	Coalescer	3.7 in / 94mm	40 in / 1016 mm
SH-P-420-V S/S	Separator	3.7 in / 94mm	20 in / 508 mm

# XtreamPhase™ 4T

Removal of Difficult Immiscible Phases from a Variety of Process Fluids

Replacement option for Pall PhaseSep® coalescer & separator cartridges: LCS2H1AH, LCS4H1AH and LSS2F1H

APPLICATIONS	MATERIALS	PERFORMANCE
<ul style="list-style-type: none"> <li>Caustic from Fuels</li> <li>Amine from Hydrocarbons</li> <li>Oil from Ammonia</li> <li>Water from Hydrogen Peroxide</li> <li>Oil from Water</li> <li>Hydrocarbon from Quench</li> <li>Water</li> </ul>	<ul style="list-style-type: none"> <li><b>Filter Media</b> Coalescer - proprietary, pleated Timlar™ fluoropolymer media.</li> <li><b>Separator</b> - hydrophobic, pleated w/ 316L wire</li> <li><b>Hardware</b> 316L Stainless Steel</li> <li><b>O-Ring</b> Teflon® Encapsulated Fluorocarbon</li> </ul>	<ul style="list-style-type: none"> <li>Max. Temperature 300°F / 149°C</li> <li>Recommended Change-Out 15 psid / 1.03 bard</li> <li>Max. dP 25 psid / 1.72 bard*</li> <li>pH Range 0 - 14</li> <li>Inlet discontinuous phase liquid concentration as high as 5% water by volume</li> <li>Removes discontinuous phase entrained free liquids down to 15 ppmv or less</li> <li>Separates under low IFT values</li> </ul> <p>* Max dP may be limited by vessel manufacturer's design</p>

## Ordering Information

MODEL	STYLE	O.D. (in / mm)	Length (in / mm)
TLPC-P-420-TV S/S	Coalescer	3.7 in / 94mm	20 in / 508 mm
TLPC-P-440-TV S/S	Coalescer	3.7 in / 94mm	40 in / 1016 mm
SH-FTG-420-TV S/S	Separator	3.7 in / 94mm	20 in / 508 mm

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