

PhaseSep® A/S Series Liquid/Liquid Coalescer

Introduction

The PhaseSep® A/S Series coalescer is the latest member of Pall's PhaseSep coalescer family and is a high-efficiency phase separation element. The PhaseSep A/S coalescer can help achieve critical separations at a lower cost, with better efficiencies and reduced process times than conventional centrifuges, settlers or coalescers.

The presence of difficult to separate emulsions can be costly and problematic for fluid processing industries. Inefficient separations of liquid contaminants can cause:

- Final products to be off-specification
- Excess consumption of expensive resins or increase in wash water volumes used for purification or washing
- Costly processing delays
- Increased costs for wastewater treatment or disposal

Breaking stable emulsions can be a difficult task depending upon the process conditions. Pall has developed a highly efficient series of coalescing elements to enable separation of stable emulsions.

Important parameters in determining the ease of separating emulsions include: the interfacial tension (IFT), difference in density and viscosity. The IFT is a good way to assess the stability of an emulsion. For very stable emulsions, the IFT can be very low (<20 dyne/cm) and conventional separation technologies, including fuel product coalescers, can lose their efficiency when the IFT reaches below 20 dyne/cm.

Performance Specifications

PhaseSep A/S Series Coalescers

- Typically remove free phase liquid contamination to a level of 50-350 ppmw based on gravimetric analysis
- Handle inlet dispersed liquid contaminant concentrations as high as 10% and greater¹
- Separate emulsions with interfacial tensions as low as 0.5 dyne/cm

¹ For applications greater than 2% dispersed liquid, the PhaseSep A/S Series horizontal housing will utilize two collection boots.

² Maximum temperature is 250°F (121°C) for most fluids, excluding strong acids. Pall suggests soak testing at higher temperatures. Note: element burst has not been evaluated for temperatures higher than 100°F (37°C).

³ Typically <2 psid for most applications. Can be higher due to increased viscosity or flow rate.



PhaseSep A/S Series Liquid/Liquid Coalescers shown

Performance Claims

Maximum temperature: ²	250°F (121°C)
Recommended change-out:	15 psid (1.03 bard)
Maximum differential pressure rating:	30 psid (2.07 bard) @ 100°F (37.8°C)
Initial pressure drop for typical applications: ³	<2 psid (0.14 bard) 1-4 gpm @ 2-5 cps

Product Specifications

Materials of Construction

Core:	316L stainless steel
Medium:	Proprietary polymer

Typical Separation Applications

- Glycerin or glycerol from methyl ester
- Soap and water from washed BioDiesel
- Free fatty acid or methyl ester from crude glycerin
- Methyl ester from wash or wastewater
- Oil from produced water
- Organics from aqueous chemicals

Note: each application for the PhaseSep A/S Series L/L coalescer should be reviewed by Pall Corporation for technical feasibility.

Compatibility

Compatibility is also a key consideration when selecting a coalescer. Pall coalescers are available in a wide range of materials including various polymers and fluoropolymers.

Part Numbers/Ordering Information

LCS ● FPS ■ 00 (e.g. LCS1FPS200)

Code ●	Length (nominal) inches /mm
1	10 / 254
4	40 / 1016

Code ■	Removal Rating
1	Fine
2	Medium
4	Coarse

PhaseSep A/S Coalescer Compatibility Guide with Fluids at 250°F (121°C)

Chemical Classification	Examples	Rating
Inorganic Acids	Hydrochloric, Dilute Nitric, Dilute Sulfuric Boric, Phosphoric	NR GR
Organic Acids	Acetic Formic	GR T
Bases (Alkalis)	Sodium Hydroxide, Potassium Hydroxide, Amines, Quaternary Ammonium Hydroxide	GR GR
Salt Solutions	Aluminum Chloride, Sodium Sulfide, Sodium Nitrate	T T
Brines	Sodium Chloride, Potassium Chloride, Sodium Bromide, Calcium Chloride Aqueous Halogenated Solutions	GR GR NR
Oxidizers	Peroxides, Peracids	NR
Organic Solvents	Ethers, Esters, Amides, Ketones Alcohols, Cellsolves, Glycols Aromatics (Benzene, Toulenes, Xylenes) Petroleum Products (Gasoline, Kerosene) Hydrocarbons (Hexane, Octane, Fats, Oils, Petroleum Ether) Halogenated Hydrocarbons (Methylene Chloride, Perchloroethylene)	GR GR T GR GR GR T T
	Water Air	GR GR

GR = Generally Recommended NR = Not Recommended T = Evaluate on an Individual Basis




New York - USA
25 Harbor Park Drive
Port Washington, NY 11050
+1 516 484 3600 telephone
+1 888 873 7255 toll free US

Portsmouth - UK
+44 (0)23 9230 2357 telephone
+44 (0)23 9230 2509 fax

Visit us on the Web at www.pall.com

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