



SepraSol™ Double Open- Ended Liquid/Gas Coalescer

**Provides Liquid and
Solid Free Gas**

The Answer to Gas Filtration Applications

Clean, aerosol free gas is critical to equipment reliability and the economic efficiency of gas processing, petroleum refining and chemical processing. Pall's SepraSol™ double open-ended liquid/gas coalescer contains a patented hydrophobic/oleophobic treatment. This treatment provides maximum liquid and solid removal efficiency at a low saturated pressure drop to reduce the maintenance and operating costs associated with the use of contaminated gas.

The SepraSol double open-ended coalescer is recommended for applications at a pressure of 250 psig or greater. Some of the applications recommended for the double open-ended coalescer include:

- Protecting compressors and turbines
- Protecting combustion equipment, including low and ultra-low NOx burners, by cleaning fuel gas
- Removing lubrication oil, water, compressor wear products, corrosion products, and other dirt from effluent gas streams
- Minimizing solution losses downstream of gas purification process units
- Protecting gas flow meters and meter runs, ensuring accurate flow rate measurements
- Controlling injection well plugging during gas flooding



- Minimizing foaming in amine and glycol contacting towers
- Protecting catalysts, desiccants and absorbants
- Safeguarding gas separation membrane systems
- Preventing contamination of bioreactors
- Ensuring contaminant-free carbonated beverages and containers

Coalescer Technical Information

Oleophobic/Hydrophobic Treatment –

All of Pall's SepraSol liquid/gas coalescers receive a patented oleophobic/hydrophobic treatment. Chemically treating the coalescer lowers the surface energy of the medium and promotes rapid drainage of the coalesced liquids. This significantly increases the amount of liquid per unit area of medium the coalescer can handle. Added benefits to the chemical treatment include lower saturated pressure drop, which saves operating costs and rapid recovery from liquid slugs.

Features, Advantages and Benefits of the Pall SepraSol Double Open-Ended Liquid/Gas Coalescer

Pall's SepraSol liquid/gas coalescers eliminate virtually all solids and liquids in a gas stream. Downstream liquid levels are as low as 0.003 ppmw¹ and solids removal rating is 0.3 micron (µm) (99.99% efficiency).²

Features	Advantages	Benefits
Patented Oleophobic/Hydrophobic Media Treatment	<ul style="list-style-type: none"> • More rapid liquid drainage. • Lower saturated pressure drop. • Faster recovery from liquid slugs. • Minimized vessel diameter due to less restrictions on annular velocity. 	<ul style="list-style-type: none"> • Reduced capital and operating cost. • Improved product quality and consistency.
High Effective Filtration Area	<ul style="list-style-type: none"> • Fewer element changeouts needed. • High solids removal efficiency. 	<ul style="list-style-type: none"> • Lower operating and maintenance costs.
High Efficiency Media and Draining Materials	<ul style="list-style-type: none"> • Consistent high-efficiency liquid removal. • Reduced liquid losses. • Optimum protection of downstream equipment. 	<ul style="list-style-type: none"> • Lower maintenance costs and improved availability.

¹ Test conditions used to measure efficiency area as follows:
Flow rate: 900 SCF/minute per 30 in. element at 37.8°C (100°F) and 6.9 bar (100 psig)
Liquid inlet: 50 ppmw oil

² Per sodium chloride test

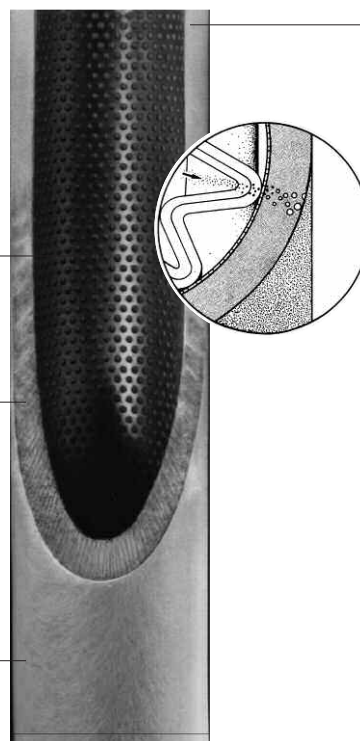
Additional Features of the Pall SepraSol Double Open-Ended Liquid/Gas Coalescing Filter

Positive Seal: A tie rod seal/nut sealing mechanism prevents contamination bypass. Seal materials compatible with petroleum based and synthetic compressor oils and oil field chemicals and gases are available.

Metal Support Core: Axial strength and protection against slugs are provided by a perforated stainless steel inner support core.

Coalescer's Pleated Medium: The coalescer is a high area, resin bonded, pleated proprietary medium surrounded by non-woven polymeric support and drainage layers. This provides unsurpassed separation efficiency over a wide range of flow conditions with minimum pressure drop.

Outer Drainage Layer: Drainage of coalesced liquid and protection from re-entrainment is provided by a polymeric outer wrap. This provides consistent, high-efficiency performance independent of flow rate and aerosol concentration fluctuations.



Outer Cage: Supports media during use to ensure no element damage in high-pressure applications.

Patented Oleophobic/Hydrophobic Treatment: A patented, proprietary oleophobic/hydrophobic treatment lowers the surface energy of the media, thereby providing superior drainage and preventing liquid re-entrainment even at high flow rates. The effect of this treatment also allows Pall to size smaller coalescer units.

Fluid Compatibility: Some of the fluids the double open-ended coalescer is compatible with in oil and gas applications include:

- Natural gas
- Hydrogen
- Carbon dioxide
- Hydrogen sulfide
- Lube oils
- Triethylene glycol
- Ethylene glycol
- Water
- Gasoline

Technical Information

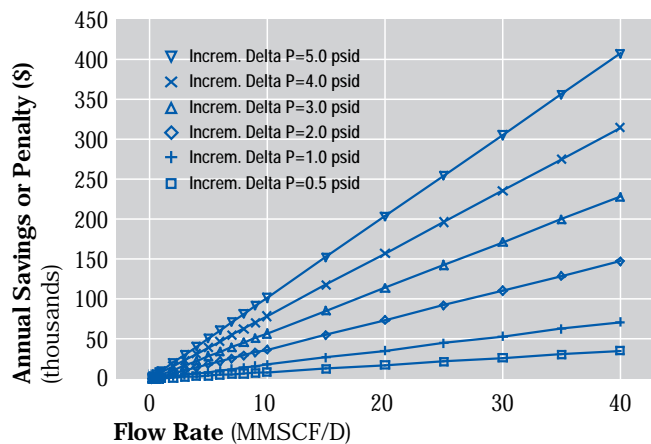
Nominal Cartridge Dimensions

Part Number	Outer Diameter (mm/in)	Length (mm/in)	Surface Area (m ² /ft ²)
CC3LG02H13	70/2.75	762/30	0.88/9.5

Performance Specification

Solid Removal Rating	0.3 µm (99.99%)
Temperature Rating	180°F (82°C) 150°F (65°C) with Water
Clean & Saturated Pressure Drop	Sized to your specification

Figure 1: Effect of Pressure Drop on Compressor Operating Costs³



³ Conditions: Delta P on inlet pressure
Inlet Pressure = 20 psia
Outlet Pressure = 200 psia
Gas compressed is methane
Costs based on \$0.07/kwhr

Pall Corporation applies a patented oleophobic/hydrophobic chemical treatment on all of its SeptraSol liquid/gas coalescers. This allows the coalescers to operate at a lower saturated pressure drop. As shown on Figure 1, a small difference in saturated pressure drop can result in significant savings in operating costs.

About Coalescer Efficiency Ratings

The measurement of the efficiency and the pressure drop of a coalescer should reflect operating conditions. Many manufacturers of coalescers measure efficiency using the dioctyl phthalate (DOP) test. The DOP test was not originally designed to measure the performance of a coalescer under operating conditions seen in the oil and gas industry. Rather, the DOP test is performed under the following conditions:

- Measures only capture efficiency and does not indicate how much liquid is at the filter outlet. It is the outlet concentration, which will indicate whether downstream equipment and processes are vulnerable to damage.
- Measures only the percent removal of DOP aerosols that are 0.3 µm compared to a range of sizes normally seen in oil and gas applications.
- Measures the removal of DOP, a liquid not typically found in oil and gas applications.
- Performed under a vacuum, not typical of operating conditions.
- Performed on a dry coalescing element; the effectiveness of a coalescer should be measured when a coalescer is completely saturated.

Pall has developed a test called the Liquid Aerosol Separation Efficiency (LASE) Test to specially measure the performance of a coalescer under operating conditions. The table below compares the LASE and DOP tests. For further details on the LASE test, see Pall literature GAS-4300b, "Recent Developments in Performance Ratings of Gas/Liquid Coalescers."

Pall LASE Test vs. Conventional DOP

	Pall LASE Test	DOP Test	LASE Advantage
Efficiency Rating	Measures ppmw of total downstream aerosol concentration	Measures only the capture efficiency of 0.3 µm DOP aerosols	Specifies performance based on total liquid removal
Test Contaminant	Polydispersed 20 wt. compressor lube oil (size range 0.1-1.0 µm)	Monodispersed dioctyl phthalate (size range at 0.3 µm only)	Closely simulates actual process contamination
Downstream Contaminant Measurement	Full flow membrane sampling of all size contaminants	Indirect light scattering of 0.3 µm contaminants	Directly measures the amount of all liquid downstream
Pressure Conditions	Performed under positive pressure conditions	Performed under vacuum	More closely reflects actual process pressure
Cartridge Condition	Performed on a saturated cartridge	Performed on dry cartridge	Reflects actual process cartridge service
Pressure Drop Measurement	Measures operating saturated cartridge pressure drop	Measures dry cartridge pressure drop	Provides a more realistic service pressure drop



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