



Effective and Economical Hydrocarbon Removal with Enhanced Polymeric Absorbent Cartridges

Parker Hannifin's Fulflo® TruBind™ absorbent cartridges utilize a modified polymeric absorbent that economically and effectively reduces trace hydrocarbon contamination in aqueous fluids. The enhanced polymer, configured in a radial-flow-design cartridge, provides maximum utilization of available surface area. This product can be used alone or as an enhancement to other systems. Whether process fluid reclamation or meeting disposal requirements is the goal, TruBind™ can solve many demanding hydrocarbon contaminated aqueous fluid problems.

Applications

- Water Soluble Machine Tool Coolants
- Alkaline Parts Washing
- Industrial Discharge Water
- Produced Water Disposal
- Injection Molding Cooling Water
- E-Coat Paint
- Pre R.O. Membrane
- Tanker Ballast Water
- Aerosol Mists
- Plating Bath
- Leisure/Commercial Shipping Bilge Water
- Surface Water Runoff (Truck stops, airports, auto service stations)
- Gas & Oil Facility Wastewater
- Car & Truck Wash Water
- Compressor Condensate
- Post Oil/Water Separator Polishing
- Floor Scrubbing Waste Water
- Pre Carbon Bed



Features and Benefits

- Increases machine tool life when installed at point-of-use.
- Increases working life of valuable process fluids.
- Reduces hydrocarbon levels to meet EPA discharge regulations.
- Absorbed hydrocarbon is chemically bound by polymer and is not leachable.
- Absorbent polymer is enhanced to maximize utilization of surface area.
- Radial flow design of cartridge allows maximum flow with minimal pressure drop.
- High integrity construction withstands harsh process environment.
- Retrofits Parker P, FP, FPM vessel series and PC Series Portable Cart.

Process Filtration Division



Technology

Unlike competitive technologies in which hydrocarbons are removed through surface adsorption onto the medium, TruBind™ cartridges utilize a proprietary modified polymer that both absorbs and binds the hydrocarbon molecules into its interior matrices. The affinity of the polymeric absorbent for hydrocarbon contaminant is so great that accelerated testing by the Toxic Characteristics Leachate Procedure (TCLP) indicated the effluent hydrocarbon level in water to be below current and proposed EPA

limits. The modified polymer was formulated to control the speed of hydrocarbon absorption by eliminating the potential for skin formation at the polymer/hydrocarbon interface. Consequently this polymer, when incorporated into a radial-flow-design cartridge, insures maximum utilization of surface area. The nature of the polymer makes it an effective absorbent of free, emulsified and dissolved oils, synthetic lubricants, grease and a multitude of organic solvents.

Performance

TruBind™ absorbent cartridge efficiency depends upon the residence time of the fluid within the cartridge, which is a function of the volumetric flow rate.

1. Hydrocarbon Removal Efficiency: At an equivalent flow rate of 5 gpm per cartridge the TruBind™ cartridge typically reduces trace hydrocarbon contaminant in excess of 95% in single pass mode. This efficiency level can be maintained only to a net differential pressure of 10 psi. Series or multipass filtration can virtually eliminate hydrocarbon contamination.

2. Hydrocarbon Absorbent Capacity: The TruBind™ cartridge medium has the potential to remove up to 1200 grams (approximately 1 quart) of low density hydrocarbon contaminant. On this basis, the table below provides expected life data in hours or gallons at several trace contaminant levels based on a 5 gpm flow rate per cartridge. Absorbent capacity will decrease as density of hydrocarbon increases.

3. Flow Rate Capability: A maximum flow rate of 5 gpm per cartridge is recommended for the most effective removal of trace hydrocarbon contaminant.

Hydrocarbon Concentration		Hydrocarbon Removal per Minute (grams)	Estimated Life in Hours	Gallons Fluid Treated	Estimated Cost per Gallon of Treated Fluid
(ppm)	(% by Weight)				
10	.001	0.189	111.39	31746	\$0.003
100	.01	1.795	11.14	3175	\$0.030
1,000	.1	17.954	1.11	317.5	\$0.295

Ordering Information

TBC	7	18	A	DO	A
Cartridge Series	Outside Diameter	Cartridge Length	Support Core	Cartridge Seal Design	End Seal Options
TruBind™ Absorbent Cartridge	Code 7 in 6-1/4 mm 159	Code 18 18 36 36 mm 457 914	A=Standard Wall Polypropylene Core	DO = Double Open End (gasket seal)	A = Foam Gasket

Example:
TCB718A-DO-A

Specifications

Materials of Construction:

- Laminated Proprietary Polymer Absorbent
- Support Construction: 100% polyolefin
- Seal Material: Buna-N gasket

Cartridge Dimensions (nominal)

- Lengths: 18 in (2457 mm)
- Outside Diameter: 6-1/4 in (159 mm)
- Inside Diameter: 2-5/8 in (67 mm)

Maximum Recommended Operating Conditions:

- Temperature: 150°F (65°C)@20 psid (1.4 bar); 180°F(82°C)@10 psid (0.7 bar)
- Pressure: 60 psid (4.1 bar) @ 75°F (24°C)
- Flow Rate: 5 gpm per cartridge
- Changeout Pressure Drop (net): 10 psi (0.7 bar)
- Flow Factor: 3 psid per 1 gpm at 1 cks viscosity per cartridge

Recommended pH Range:

- pH 2 -12

BioSafety:

- The TruBind™ cartridge is classified as non-hazardous and incinerable. Disposal must be dictated by local regulations pertaining to the absorbed contaminant.

Recommended Vessels:

- Parker Fulflo "P", "FP", "FPM" Series and PC Series Portable Cart.

TruBind™ 700 Series Requires a support core prior to cartridge installation in vessel. The support gives the cartridge more strength and removes the chance of the cartridge collapse in recommended operating conditions. Support core is a reusable part, it does not need to be replaced after installation and cartridge changeout. Part Number: 4452-5120



Process Filtration Division

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