

## Effective and Economical Hydrocarbon Removal with Enhanced Polymeric Absorbent Cartridges

Parker 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.
- A variety of cartridge sizes and end cap options increase housing selection.
- TruBind cartridges are completely incinerable.
- Parker's TQM system assures consistent and reliable performance.

### 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 1.0 gpm per 10-inch 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 250 grams (approximately one-half pint) 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 1.0 gpm flow rate per 10-inch cartridge.

Absorbent capacity will decrease as density of hydrocarbon increases.

3. Flow Rate Capability: A maximum flow rate of 1.0 gpm per 10-inch length cartridge is recommended for the most effective removal of trace hydrocarbon contaminant.

Hydrocarbon Concentration (ppm)	Hydrocarbon Concentration (% by Weight)	Hydrocarbon Removal per Minute (grams)	Estimated Life in Hours	Gallons Fluid Treated	Estimated Cost per Gallon of Treated Fluid
10	.001	0.04	106.0	6,330	\$ .003
100	.01	0.40	10.6	633	\$ .03
1,000	.1	4.00	1.1	63	\$ .30

## Ordering Information

<b>TBC</b>	<b>10</b>	<b>A</b>	<b>TC</b>	<b>A</b>
Cartridge Series	Cartridge Length	Support Core	Cartridge Seal Design	End Seal Options
TruBind Absorbent Cartridge	Code in mm	A = Standard Wall Polypropylene Core	DO = Double-Open-End (gasket seal) TC = Single-Open-End (222 O-ring seal)	A = Polyolefin Foam Gasket (standard for "DO" seal design) N = Buna-N O-Ring (standard for "TC" seal design)
<b>Example:</b> TBC10A-TC-N	9 9-5/8 244 10 9-13/16 249 19 19-5/8 498 20 19-15/16 506 29 29-1/4 743 30 30-1/16 764 39 39 991 40 40 1016			

## Specifications

### Materials of Construction:

- Absorbent: Proprietary modified polymer
- Support Construction: 100% polyolefin
- Seal Material: Gasket (Polyethylene Foam); 222 O-Ring (Buna-N)

### Cartridge Dimensions (nominal)

- Lengths: 10-40 in (249mm-1016mm)
- Outside Diameter: 2-1/2 in (63.5 mm)
- Inside Diameter: 1-1/16 in (27 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: 1.0 gpm per 10-inch cartridge
- Changeout Pressure Drop (net): 10 psi (0.7 bar)
- Flow Factor: 0.03 psid per 1 gpm at 1 cks viscosity per 10 in cartridge

### BioSafety:

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

Consult factory for product configurations

## Process Filtration Division

Parker Hannifin Corporation  
Process Filtration Division  
P.O. Box 1300  
Lebanon, Indiana 46052  
Toll Free 1-888-C-FULFLO (238-5356)  
Telephone (765) 482-3900  
Fax (765) 482-8410  
<http://www.parker.com>

