

HSTS Cartridges

■ Polymeric Absorbent

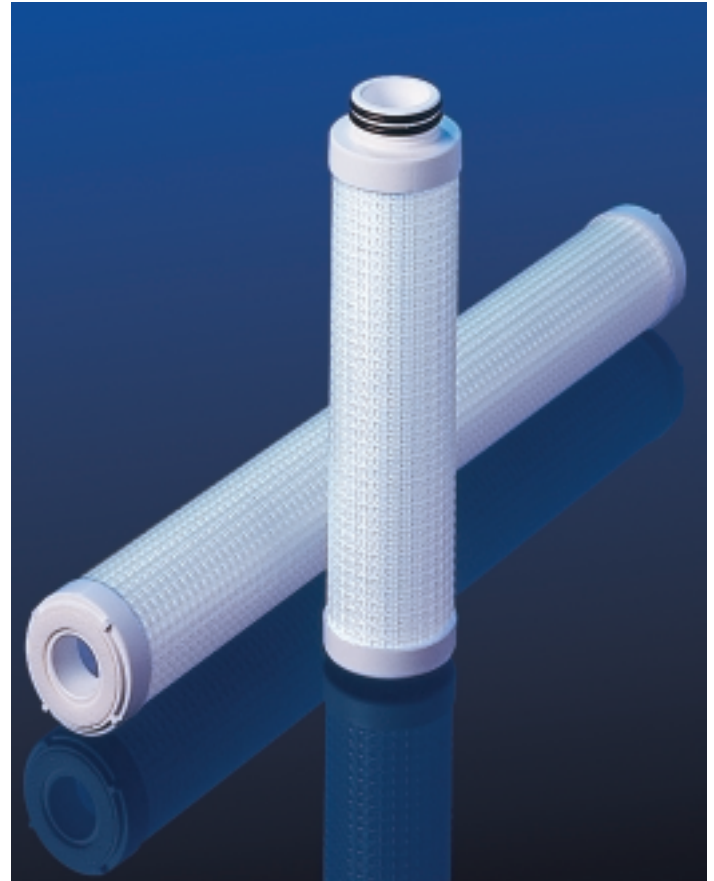
Hydra-Sorb Cartridge Series

Effective and Economical Hydrocarbon Removal with Enhanced Polymeric Absorbent Cartridges

Clark-Reliance Hydra-Sorb 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, Hydra-Sorb 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.
- Hydra-Sorb cartridges are completely incinerable.
- Clark-Reliance TQM system assures consistent and reliable performance.



WARNING! FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.
This document and other information from Clark-Reliance Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection for the products and systems and assuring that all performance, safety and warning requirements of the application are met.

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Technology

Unlike competitive technologies in which hydrocarbons are removed through surface absorption onto the medium, Hydra-Sorb cartridges utilize a proprietary modified polymer that both absorbs and chemically 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 for free, emulsified and dissolved oils, synthetic lubricants, grease and a multitude of organic solvents.

Performance

Hydra-Sorb 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 Hydra-Sorb 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

Hydra-Sorb 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.

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: 40 psid (2.8 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
- pH Range: 2 - 12

BioSafety:

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

Hydrocarbon (ppm)	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

Note: Cost per gallon decreases significantly with longer cartridges.

Ordering Information

HSTS	10			A	DO	A
Cartridge Series	Cartridge Length			Support Core	Cartridge Seal Design	End Seal Options
HYDRO-SORB Absorbent Cartridge	Code	in	mm	A = Standard Wall Polypropylene Core	DO = Double-open-end (gasket seal) DX = Double-open-end with core extender TC = Single-open-end (222 O-Ring seal) TX = 222 O-Ring/Flex Fin	A = Polyolefin Foam Gasket (standard for "DO" seal design) N = Buna-N O-Ring (standard for "TC" seal design)
	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				