



F I L T R A T I O N

Target Market:

## Oil and Gas

Application:

### Completion and Rework Fluid

#### Application Description

To prevent well pressure from blowing oil and gas to the surface, oil and gas wells are drilled using an aqueous solution of barite or bentonite to add specific gravity to the fluid. This solution cannot have particulate in it greater than two microns or the oil-bearing stratum may become plugged. At the same time, reuse of the barite or bentonite is desired to prevent disposal problems and minimize the cost of drilling. If the well's stratum becomes plugged, it has to be reworked periodically to extend its life. The fluid used to rework the well also has to have particulate removed to prevent stratum pore plugging. Therefore, larger volumes of fluid need to be economically filtered.

**Material:** Porous Polyethylene

#### Types of Filters Used

Typically, diatomaceous earth (DE) filters are used in completion and rework fluid applications due to their high dirt capacity and filter aid economics. Pleated polypropylene cartridges have also been used. Backflushable filters are currently being evaluated.

#### Purpose of Filtration

To remove particulate from well drilling bentonite or barite fluid to prevent stratum plugging.

#### Common Filtration-Related Problems

- **DE Disposal** - High disposal costs for large volumes of contaminated DE (hazardous waste), particularly for well platforms in the ocean that must be brought in and back out by barge
- **Channeling** - Inconsistent DE in the depth and efficiency of the filter bed causing channeling and particulate passage of the filter
- **High Labor Cost** - DE filters can be expensive to set-up and clean up
- **Heavy Filter Usage** - Cartridge filters do not have DE capacity and must be changed frequently
- **Poor Backflushing** - Many cartridge filters have multiple layers or unavailable pleated areas that make backflush cleaning difficult
- **Large Filter Foot Print** - Low flow rate filters require large, multiple-housing skids that are difficult to fit on off-shore platforms where surface area is a premium

Sintered High-Density or Ultra-High Molecular Weight Polyethylene

FEATURE	ADVANTAGE	BENEFIT
<b>Rigid, Omni-Directional Pore Structure</b>		
• Absolute Ratings	• Consistent pore structure minimizes performance changes caused by differential pressure	• Reproducible performance
• Narrow Pore Size Distribution	• Highly-effective surface filtration for particles larger than the filter pore size rating	• Allows for effective cleaning, backwash and reuse
• Thermally-Bonded	• Sintered omni-directional pore structure	• No media migration, bypass or unloading from 5 to 100 microns
• Excellent Chemical and Thermal Compatibility	• High chemical resistance of HDPE and UHMWPE  • Completely incineratable with a high BTU output	• No chemical degradation resulting in bypass or contamination of the process fluid  • No incineration residue
<b>Unique, Molded Radial Design</b>		
• High Surface Area	• Low pressure drop and higher flow rate	• Increased life or fewer filters results in lower filtration costs
• Open Channels	• Easy access to filtration area	• Effective filtration and cleaning
• Single-Layer Structural Media	• Eliminates unnecessary support materials	• Improves backwash and cleanability
• Rigid, One-Piece Construction	• Multiple diameters, lengths and end configurations	• Easily adapts to existing filtration systems

PERFORMANCE COMPARISON

**Rigid, Omni-Directional Pore Structure**

POREX Radial Cartridge Filter vs	DE Filters	Pleated Cartridges	Metal Cartridges
Micron Ratings	= / +	= / -	= / -
Absolute Filtration	+	= / +	=
Surface Retention	+	+	=
Classification Filtration	+	+	+
Sintered Process	+	+	=
Polyolefin Material	+	=	+
Chemical Compatibility	=	=	= / -
Thermal Compatibility	= / -	=	= / -

**Unique, Molded Radial Design**

POREX Radial Cartridge Filter vs	DE Filters	Pleated Cartridges	Metal Cartridges
Backflushable	+	+	=
Surface Area	= / +	-	+
Molded Construction	+	+	+
Rigid Structure	+	+	=
Open Pleats	+	+	+
Disposal Cost	+	+	+
Performance Priced	= / +	+	+
Single Material	+	= / +	+
Vessel Seal	= / +	=	=
Housing Fit	= / -	=	= / -

Symbol Key: = Porex equivalent + Porex advantage - Porex potential limitation

