



AQUA-CLEAR™ PFD

Phosphate-Free Dispersant

Description AQUA-CLEAR PFD is a concentrated liquid polymer dispersant that provides superior mud and sediment removal from the producing formation and gravel pack. This product is also a highly effective mud thinner. AQUA-CLEAR PFD contains no phosphates.

Applications/Functions

- Disperse mud, sediment and clay from the producing formation and gravel pack in the screened interval.
- Reduce viscosity and gel strength of drilling fluids

Advantages

- ANSI/NSF Standard 60 certified
- Reduces development time
- Increases well yield and capacity
- Safe to use on most plastics, rubber and metals
- Non-fermenting
- Reduces pumping costs

Typical Properties

• Appearance	straw colored liquid
• Specific gravity	1.2 to 1.4
• pH (neat)	6.5 to 7.5

Recommended Treatment

As a Well Development Aid

- Determine volume of water in screen area and double the calculated volume to account for water in gravel pack and formation interface or determine the static volume of water and add 50% excess.
- Once the water volume is determined, calculate the required treatment volume of AQUA-CLEAR PFD by the following formula:

$$\text{AQUA-CLEAR PFD (gal or L)} = 0.002 \times \text{Water Volume (gal or L)}$$

This equates to one gallon of AQUA-CLEAR PFD for every 500 gallons of water (0.2% by volume) or 2.0 liters of AQUA-CLEAR PFD for every cubic meter of water.

- Mix thoroughly before introducing into well.
- The preferable application method utilizes a tremie line with the product applied into the screened area.
- If necessary, the AQUA-CLEAR PFD/water solution may be poured into the well.
- Mixture should be thoroughly blended in well, then agitated using a surge

Recommended Treatment (continued)

and swab, jetting, or other developmental technique repeatedly every two hours for a period of up to 24 hours.

- Pump to waste until turbidity clears up and then connect well to distribution system.

As a Mud Thinner

- Start by adding one pint of AQUA-CLEAR™ PFD to 500 gallons of mud. Increase concentration until desired viscosity is achieved.

Well Capacity Chart (Gallons per Foot)					
Well Diameter (Inches)	Well Capacity in Gallons/ft	Well Diameter (Inches)	Well Capacity in Gallons/ft	Well Diameter (Inches)	Well Capacity in Gallons/ft
2	0.2	12	5.9	24	23.5
4	0.7	14	8.0	26	27.6
6	1.5	18	13.2	30	36.7
8	2.6	20	16.3	36	52.9
10	4.1	22	19.7	48	94.0

Well Capacity Chart (Liters per Meter)					
Well Diameter (millimeters)	Well Capacity Liters/meter	Well Diameter (millimeters)	Well Capacity Liters/meter	Well Diameter (millimeters)	Well Capacity Liters/meter
51	2.0	305	73.0	610	292.0
102	8.1	356	99.3	660	342.6
152	18.3	457	164.2	762	456.1
203	32.4	508	202.7	914	656.8
254	50.7	559	245.3	1219	1167.7

Note: The volumes in these tables show only the volume of water in a 1 foot or 1 meter section of a given size of screen. Excess volume must be included to account for water present in the formation interface and gravel pack.

Packaging AQUA-CLEAR PFD is packaged in a 5-gal (19-liters) plastic pail or 1-gal (3.8-liter) plastic container.

Availability AQUA-CLEAR PFD can be purchased through any Baroid Industrial Drilling Products Distributor. To locate the Baroid IDP distributor nearest you, contact the Customer Service Department in Houston or your area IDP Sales Representative.

Baroid Industrial Drilling Products

A Product and Service Line of Halliburton Energy Services, Inc.

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