

# FIBERSEAL

## Technical Bulletin

### CELLULOSE MICROFIBERS

**FIBERSEAL** is a clogging material of cellulose. It is used to bridge and seal permeable formations being drilled with water, oil, or synthetic base mud. The bridging and sealing of permeable formations reduce the tendency of the string, to get stuck, by differential pressure; which could produce high levels of torsion and dragging, or stuck pipe. **FIBERSEAL** is very useful to avoid the drilling string to get stuck when drilling at depleted intervals of high differential pressure. For more flexibility, **FIBERSEAL** can be obtained in three grains: fine (original,) medium and coarse, in order to choose the optimum size to seal the pores and the pores throat in permeable formations. Adding **FIBERSEAL** has a minimum effect on the properties of the mud.

#### Physical Properties

Physical appearance.....Cinnamon to light brown powder  
pH..... 6.5 - 7.5

#### Composition

Cellulose fiber.....95, 0%  
Moisture.....4, 5%  
Inert materials.....0, 5%

| Grind Size      | Fine | Medium | Coarse |
|-----------------|------|--------|--------|
| Retain Mesh 4   | -    | -      | 0%     |
| Retain Mesh 8   | -    | -      | 0%     |
| Retain Mesh 20  | 0%   | 0%     | -      |
| Retain Mesh 50  | -    | *30%   | *15%   |
| Retain Mesh 100 | *20% | *7%    | *10%   |

#### Applications

**FIBERSEAL** is an excellent bridging material, of proven efficiency when used in drilling at intervals of high permeability, porosity, and high differential pressure.

Each grain of **FIBERSEAL** has an optimum distribution of the particles size to seal a large variety of formations.



Injection and Environmental Products

**FIBERSEAL** has been designed to bridge and seal permeable formations, in order to minimize the probability of stuck pipe – controlling circulation loss, and consequently, providing filtration control. It is compatible with water, oil, or synthetic base mud.

The recommended treatment requires 14 to 29 kg/m<sup>3</sup> (5 to 10 lb/bbl) in order to lower the tendency of getting stuck by differential pressure. After the initial treatment, periodical treatments should be made in order to maintain the proper concentration. The small mud screens (100 or <) can remove large volumes of medium size and coarse particles of **FIBERSEAL**.

**FIBERSEAL** fine grain is recommended for most applications due to the special distribution of its particulates. The intervals of very high permeability such as carbonated cracks and conglomerates could require medium or coarse **FIBERSEAL** grain.

The normal treatments for minor fluid loss require 29 to 57 kg/m<sup>3</sup> (10 to 20 lb/bbl). Concentrations of 57 to 100 kg/m<sup>3</sup> (20 to 35 lb/bbl) are recommended for more serious filtration problems. Tests are recommended before using it in high concentrations, as the material absorbs a small volume of liquid when added to the mud system.

**FIBERSEAL** should be added to the fluid system by a mixing hopper at a point of good agitation, such as the suction pit. **FIBERSEAL** do not need additives. It is of maximum efficiency when keeping the proper concentration in the circulating system.

Notwithstanding very often **FIBERSEAL** has been used successfully in operations of periodical additions, scavenging, treatments in layers and pills.

### Advantages

- \* **FIBERSEAL** is compatible with any type of mud and can be used against circulation loss, along with other materials such as mica, calcium carbonate from pre-measured particles, gilsonite, etc.-
- \* **FIBERSEAL** residue can be partially removed by common treatments, with hydrochloric acid solution or sodium hypo chlorite. **FIBERSEAL** is 55% soluble in 15% HCl at 100 C° (212 °F).
- \* An effective material to bridge and seal a large variety of formations.
- \* Outstanding against circulation loss, due to its exceptional particles, smaller than those of common materials but larger than the solids, which contain almost all type of drilling mud.

All Petrol S.A. - [www.allpetrol.com.ar](http://www.allpetrol.com.ar)  
Juan Bautista Alberdi 348  
La Calera - Córdoba – Argentina  
Zip Code: 5151  
Office/Fax: +54 3543 461606/467942  
E-mail: [laboratorio@allpetrol.com.ar](mailto:laboratorio@allpetrol.com.ar)



*Injection and Environmental Products*

- \* Offered in three grades: fine grain (original product), medium, and coarse, to permit the selection of the proper size for each specific case.
- \* Do not need additives.
- \* Compatible with all types of drilling mud and with other materials against circulations loss.
- \* Easily mixes and scatters in the mud.
- \* **FIBERSEAL** goes easily through most of the mud screens (vibrating mud screens).

### Limitations

- \* It can be removed of the system by mud screens (size < 100) and the control equipment for solids specially when using **FIBERSEAL** of medium and coarse grain particles. In that case the screens should be closely supervised.
- \* Biodegradable and susceptible to microbial degradation. In case of fermentation, a maximum recommended quantity of bactericide should be added.
- \* Absorbs a small quantity of liquid when added to the mud system, therefore it can increase flow properties if used in high concentrations.
- \* A treatment with a hydrating additive could be necessary, in unstable oil based mud or slightly treated mud, considering the large superficial extension of this slightly absorbent material.

### Toxicity and Handling

Under request, information on biological tests can be supply.

**FIBERSEAL** should be handled with personal protection equipment as any other industrial chemical product, and observing the precautions as described on the Safety Data Sheet.

In contact with the air, **FIBERSEAL** powder may produce an explosive mixture. Keep it away of flames and any other ignition source.

### Packaging and Storage

**FIBERSEAL** is packaged in multiple layers paper bags of 11.34 kg. . Store in a dry area away from ignition or heat sources. Minimize the presence of dust.

All Petrol S.A. - [www.allpetrol.com.ar](http://www.allpetrol.com.ar)  
 Juan Bautista Alberdi 348  
 La Calera - Córdoba – Argentina  
 Zip Code: 5151  
 Office/Fax: +54 3543 461606/467942  
 E-mail: [laboratorio@allpetrol.com.ar](mailto:laboratorio@allpetrol.com.ar)

