

**BIOCLEAN**

(use with Cotey Chemicals DRY ACID® SPECIAL or other strong mineral acid)

Use BIOCLEAN to:

- remove biofilm produced by slime-forming bacteria, such as that produced by iron-oxidizing and sulfate-reducing bacteria,
- improve rinse-out of well treated with mineral acid by dispersing carbonate, sulfate, magnesium and iron deposits.

How to use BIOCLEAN as a mineral acid enhancer:

Use 1 gallon (3.8 liters) of BIOCLEAN per 40 gallons (152 liters) of water in the well (see table). For heavy biofouling use 2 gallons per 40 gallons of water.

Brush and bail the well. Prior to chemical treatment, mechanical cleaning of the well can remove interior screen deposits, which ensures more uniform access of the chemical into the formation. Common mechanical cleaning tools include brushing, swabbing and jetting. Then bail the debris from the bottom of the well.

Pour BIOCLEAN directly into the well. BIOCLEAN can also be premixed in a tank and introduced into the well from the top or injected into the screen area.

Agitate the solution in the well every two to four hours for 24-36 hours. If a rig is over the hole, agitate with a bailer, surge-block or other tool. Dry ice can be used to agitate the chemical if rig or pump is not available.

Pump or bail the hole clean, develop and test. Continue pumping until pH of water is within 0.5 pH units of the original value before treatment. Initial water after treatment contains spent chemical and should be pumped to waste. Repeat above steps as necessary to achieve optimum production of the well.

For best results:

- Brush the well with the COTEY WELL CLEANING BRUSH prior to chemical treatment. Brushing the well can remove interior screen deposits ensuring more uniform chemical access into the formation.
- Agitate the well with a tight-fitting surge block or other isolation tool (the Cotey WELL CLEANING BRUSH, for example). This dislodges material softened by the chemical treatment and pushes the chemical solution further into areas it may otherwise not be able to reach.

(note: The combination of both chemical and mechanical energy is important for penetrating and removing the plugging material)

- Monitor the pH during acid treatment. When acidizing a water well it is best to check the pH frequently. With pH levels above 3.0 the acid is losing strength and productivity. Check the pH after each agitation. If the pH rises above 3.0 add more acid. This process allows for a more accurate chemical treatment.

How to dispose of BIOCLEAN:

BIOCLEAN is rapidly biodegradable. Waste from BIOCLEAN treatment should not be pumped to cultivated fields nor made available to livestock. Depending on quantity used and condition of the well treated, waste may be near neutral to very acidic. COTEY CHEMICAL therefore recommends that waste be pumped to holding tank or pit for neutralization and disposal. (Local, State and Federal regulations should be adhered to.)

BIOCLEAN is safe to use with other mineral acids such as Cotey Chemical's DRY ACID® SPECIAL. It is fully inhibited and safe to use on plastics, rubber and metals commonly used in water well equipment.

BIOCLEAN is packaged in 1-gallon, 5-gallon and 55-gallon containers.

Diameter of Casing or hole (inches)	Gallons per foot of depth
3.0	0.37
3.5	0.50
4.0	0.65
4.5	0.83
5.0	1.02
5.5	1.23
6.0	1.47
7.0	2.00
8.0	2.61
9.0	3.31
10.0	4.08
11.0	4.94
12.0	5.88
13.0	6.90
14.0	8.00
15.0	9.18
16.0	10.00
17.0	11.79
18.0	13.22
19.0	14.73
20.0	16.32
22.0	19.75
24.0	23.50
26.0	27.58
28.0	31.99
30.0	36.72
32.0	41.78

