

Quality Polymers from



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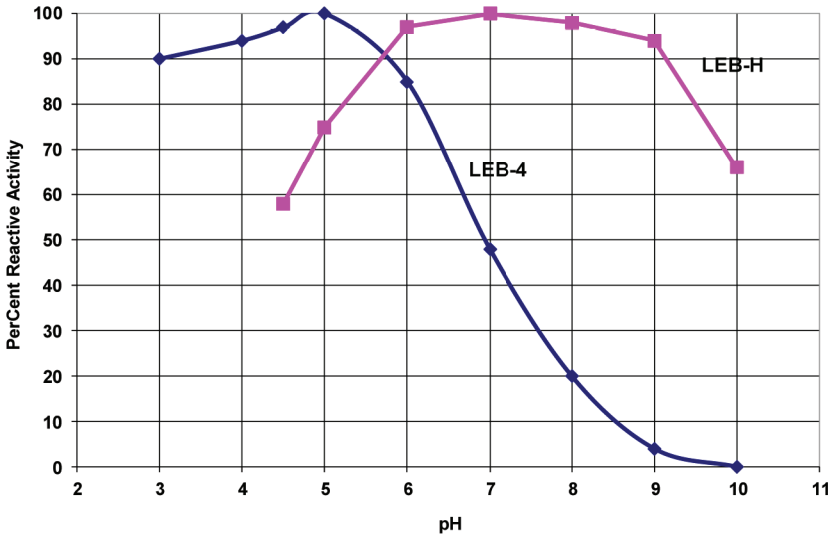
30Years of Innovation

LEB-H™ HIGH pH ENZYME BREAKER

DESCRIPTION:

LEB-H™ is a high pH stable enzyme breaker. **LEB-H™** is the breaker of choice for fluids having a pH of 6.0 or higher. Conventional enzyme breakers exhibit maximum enzyme activity at a pH of 5 to 6 and are less than 50% active at pH 7. In contrast, **LEB-H™** has maximum activity at pH 7-8 and greater than 80% activity at pH 10. This makes **LEB-H™** ideally suited for the high pH of preserved biopolymer systems and reactive systems that become alkaline in pH level. **LEB-H™** is a freeze-proofed suspension of active enzymes in carrier liquid.

Break Comparison by pH



LEB-H™ Benefits

Effective Up To 140 °F

Functions up to pH 11.0

Convenient Liquid Form

Ideal for breaking Borate Gels

LEB-H™ Physical Properties

Form: Liquid	Charge: NA
Color: Light brown	Chemical Family: Protein
Odor: Fermentation	Flash Point: None
Solubility: Water, brine	Wt. per Gal: 9.0 lbs.

RANTEC
LEB-H™ LIQUID ENZYME BREAKER

APPLICATION and USE RATE

LEB-H™ is designed for use in borate crosslinked fracturing, Zero Valent Iron slurries, either injected or in backfilled trenches. Rate of break depends upon dose, pH and temperature. The following guidelines are used as general recommendations only and may vary with field conditions.

Hydraulic Fracturing with Borate Gel	0.5 to 1.5 pints per 1000 gallons
Trenches for 24 to 48 hour break	2.5 to 7.5 pints per 1000 gallons
Jet Grouting and Hydraulic Fracturing (on the fly addition)	7.5 to 60 pints per 1000 gallons

LEB-H™ is a highly concentrated solution and to facilitate handling should always be diluted in fresh water prior to use. Add 1 gallon LEB-H™ to 9 gallons of water.

COMPATIBILITY

LEB-H™ must not be blended with any other additive (except water) prior to use.

HANDLING AND STORAGE RECOMMENDATIONS

LEB-H™ should be stored in cool, dry location. Shelf-life is typically 1-2 years but can be extended by storing under refrigeration. Keep all containers tightly closed. LEB-H™ is non-toxic and virtually harmless. It may be irritating if contacted with the eyes. It may irritate the skin of extremely sensitive individuals. Chemical splash goggles and impervious gloves are recommended when handling LEB-4™. Refer to the Material Safety Data Sheet for more detailed information.

PACKAGING

LEB-H™ is packaged in 1 gallon, 5 gallon, and 55 gallon containers.