Quality Polymers from

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30Years of Innovation

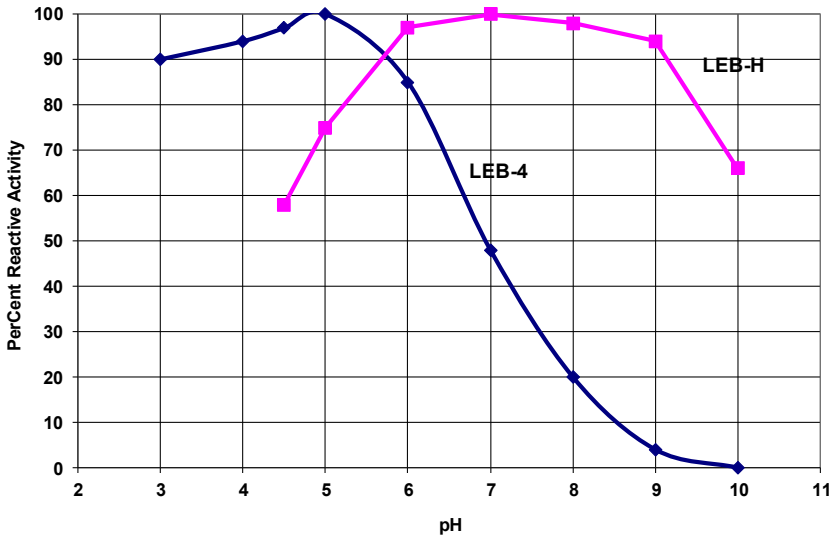
Rantec LEB-4™

DESCRIPTION:

LEB-4™ is a light tan, slightly viscous liquid with a slight enzyme odor. LEB-4 is packaged in 1 gallon graduated bottles packed 4 per case.

Rantec LEB-4™ is a freeze proofed suspension of enzyme specifically tailored to break the viscosity of Rantec G150™ solutions. This solution is highly concentrated and should be diluted prior to field application. A dilution rate of 1 gallon LEB-4™ to 10 to 50 gallons of fresh water will improve the mobility of the active enzyme.

Break Comparison by pH



DOSAGE:

LEB-4™ liquid enzyme breaker is very versatile in its uses. Control of the rate of viscosity breakdown may be directly controlled by application rate and the fluid chemical conditions. Breakdown may be slow and steady with breaker added as fluid is pumped downhole as is done in fracturing applications. Rapid breakdown following completion of a job may be done with higher doses at optimum conditions. Application rate for LEB-4™ is dependent upon:

a. Desired rate of breakdown
b. Concentration of biopolymer slurry to be broken
c. Temperature and pH of the system

Typical application rates range from 0.1 pints to 0.5 pints per 1000 gallons of fluid to be treated. LEB-4™ contains an acid active enzyme. The optimum pH range for this material centers around 5.5. Rate of break is also temperature dependent. Activity of LEB-4™ increases exponentially with temperature up to its denaturing temperature of 120 to 140° F. Maintaining warm temperatures up to that limit will greatly decrease the time required for breakdown of the polymer solution.

For specific recommendations on dose please contact Rantec engineers. Rantec will provide testing of fluids in our laboratory for assistance in fluid breakdown design

SAFETY:

LEB-4™ is non-toxic and does not present significant safety hazards. As with any chemical preparation it should be handled with care. Primary safety considerations for LEB-4™ are to assure that the liquid is not allowed to become aerosol. Avoid liquid contact with skin and eyes as drying will occur from the glycol content. Please refer to the MSDS for more specific information.