



PRODUCT DATA

EnerFrac™ DEB

Dry Enzyme Breaker

Description:

EnerFrac™ DEB is a powdered enzyme breaker used to break water based gels made from any guar or guar derivative including HPG or CMHPG. EnerFrac™ DEB reduces the viscosity of the gel to less than 15 cPs, enhancing clean up and frac water return. EnerFrac™ DEB can significantly reduce proppant pack permeability damage cause by unbroken gel. EnerFrac™ DEB is packed in convenient, easy to use, individual one pound bags.

Physical Properties:

Form: Powder	Chemical Family: Protein
Color: White	Solubility: Water, brine
Odor: Mild	Bulk Density: 33 lbs/ft ³
Charge: NA	Flash Point: None

Application:

EnerFrac™ DEB has a pH optimum range of 3.5 to 4.5 at 104°F (40°C). Effective activity is demonstrated over the range of pH 3.5 to 6.0. Values below 3.5 and above pH 8.0 rapidly deactivate the enzymes. EnerFrac™ DEB has a temperature optimum of 122°F (50°C) to 140°F (60°C) at pH 4.5. Temperatures above 140°F rapidly deactivate the enzyme. Temperatures below 122°F at pH 4.5 result in extended stability. EnerFrac™ DEB should be added continuously on the fly. Best results are obtained when EnerFrac™ DEB is first dissolved in water (1 lb. EnerFrac™ DEB dissolved in a minimum of 1.0 gal of water). The enzyme is now in liquid form and can be added on the fly with much greater ease. In addition, it will be distributed more uniformly throughout the gel and better breaks will result. Recommended use rate is ½ - 1 lb/Mgal in regular gels and 2 lb/Mgal in cross-linked gels.

Compatibility:

EnerFrac™ DEB must not be mixed with any other additives prior to use.

Handling and Storage:

Store in a dry location. Keep container tightly closed and any opened 1 lb. bags tightly sealed. Exposure to moisture greatly reduces product shelf-life. EnerFrac™ DEB is non-toxic and virtually harmless. The dust may be irritating to the eyes and nose. A paper dust mask, safety glasses and cloth gloves are recommended when handling. Refer to Material Safety Data Sheet (MSDS) for handling and hazard data.

Packaging:

EnerFrac™ DEB is packaged in individual 1 lb. bags, 50 bags per fiber keg, 50 lbs. per keg.

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