

MA-844W Micellar Additive-Stimulation

Description MA-844W is a patented, biodegradable, thermodynamically stable, complex nanofluid (CnF) --a mixture of solvent, co-solvent and surfactant-- designed specifically for use as a stimulation additive. MA-844W offers superior performance in reducing breakdown pressures and aiding in the flowback of water based frac fluids. Although thought of as primarily a fracturing chemical, its unique properties also lend it to application in acid treatments. CnF's reduce surface and interfacial tension thus enabling acid to penetrate formation rock deeper, decrease surface treating pressure, reduce the concentration of other acidizing treatment additives, and enhance treatment effectiveness.

<u>Properties</u>	Form: Liquid	Chemical Family: Proprietary
	Color: Clear to Opaque	Solubility: Water, acid, brine
	Odor: Citrus	Wt. per Gal: 7.90 lbs.
	Charge: Nonionic	Flash Point: 77°F (25°C)

Application As a breakdown fluid, use MA-844W at 20 gal/1000. To insure the tubulars are clean, circulate the fluid containing MA-844W until the tubing is clean. Apply the 20gal/1000 MA-844W ahead of the treatment fluid and break down as usual. For stimulation treatments, MA-844W should be applied at approximately 2-gal/1000 gal in the acid or frac fluid. The typical CNF concentration used in acid is 0.2% by volume.

Compatibility MA-844W is generally compatible with cationic, anionic and amphoteric additives. A compatibility test is advised before use with other surfactants.

Handling/Storage MA-844W is a flammable liquid. Store away from heat, sparks and open flame. Keep drum tightly sealed to avoid contamination. MA-844W may cause eye, skin and respiratory tract irritation by contact with the liquid or vapors. Do not breathe vapors, especially in confined areas. Use with adequate ventilation. Recommend use of splash goggles and rubber gloves. Refer to Material Safety Data Sheet (MSDS) for handling and hazard data.

Packaging MA-844W is available in 55 gal poly drums, 330 gal bulk tanks, or bulk transport loads.

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