

## INFORMATION

# OIL AID-MS-4

NON-TOXIC MICELLAR MUTUAL SOLVENT

### DESCRIPTION

OIL AID-MS-4 is a new generation, non-toxic micellar mutual solvent for acid in well cleanout and stimulation treatments. OIL AID-MS-4 provides excellent surface tension and interfacial tension reduction. OIL AID-MS-4 converts acid to a micellar system, which is a more powerful and effective solvent for acid stimulation having the following properties:

- Water Wetting
- Solids Suspension and Dispersancy
- Demulsification
- Non-Emulsification
- Water Block Removal
- Environmentally Friendly, non-hazardous

OIL AID-MS-4 significantly assists acids in penetrating, breaking down, and dispersing oily sludge and paraffinic and asphaltene deposits. OIL AID-MS-4 helps restore production capacity in oil wells and injectivity in injection wells. The typical properties are:

Form  
Density @ 60 °F  
Flash Point  
Solubility:

Transparent Liquid  
7.50 lbs/gal  
>149 °F

Fluid	Concentration	
	5%	20%
5% HCl	D	S
7.5% HCl	D	S
15% HCl	S	S
28% HCl	S	S
12/3% HCl/HF	D	S
9/6% HCl/HF	D	D
10% Acetic Acid	SEP	SEP
25% Acetic Acid	D	D
50% Acetic Acid	D	D
60% Acetic Acid	D	D
High TDS Brine	SEP	SEP

Fresh Water	D	SEP
Isopropanol	S	S
Crude Oil	D	SEP
Toluene	I	SEP
Xylene	I	SEP
Kerosene	SEP	SEP

S - Soluble, SEP - Separates within 1 hour, SH - Soluble with Haziness, D - Dispersible, I - Insoluble

### APPLICATION

OIL AID-MS-4 non-toxic Micellar Mutual Solvent is a blend of specialty additives and solvents that has been designed for use in acid for the removal of skin damage at or near the face of the wellbore in producing and injection wells. When injected down hole, a micellar acid solution made with OIL AID-MS-4 will penetrate, break down, and disperse oil, sludge, and paraffin deposits which block pore spaces. OIL AID-MS-4 acid solutions will break emulsions and water blocks, disperse solids, and leave the formation in a water wet state facilitating increased productivity or improved injectivity.

### RECOMMENDED TREATMENT

In producing wells, OIL AID-MS-4 Mutual Solvent is typically used in the range of 3 to 10 percent by volume of acid. The treatment volume should be calculated to allow for penetration of about 3 feet into the reservoir. Usually, this is approximately 0.5 to 1 bbl of acid per foot of pay zone. The acid solution should be squeezed away slowly and displaced beyond the perforations into the producing zone. The well should be shut in for a period of time when using hydrochloric/hydrofluoric acid mixtures (mud acid). This modified treatment allows time for the hydrofluoric acid to work on silica.

NOTE: Acidizing solutions containing OIL AID-MS-4 Mutual Solvent may require higher dosages of acid corrosion inhibitor than typical acidizing fluids

### SHIPPING AND HANDLING

OIL AID-MS-4 Mutual Solvent is shipped as a non-hazardous/non-regulated liquid in 55 gallon epoxy- phenolic lined steel drums and is available in bulk. Due its non-toxic nature, no special handling requirements pertain. However, standard safety precautions are always recommended when handling chemicals of this nature. Safety glass or goggles, and chemical resistant gloves should always be worn when handling. Use an approved respirator when in enclosed surroundings. A Material Safety Data Sheet is available upon request.

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