

INFORMATION

OIL AID-S-20

SPECIAL PENETRATING FLUOROSURFACTANT

DESCRIPTION

OIL AID-S-20 is a specially-formulated low surface tension surfactant blend for various types of acids, as well as water based fracturing fluids and brines. OIL AID-S-20 is a non-ionic fluorosurfactant which allows exceptionally low surface tensions to be achieved in tight formations in comparison to many other types of surfactants currently available. It is designed to help the formation "unload" after a stimulation treatment. Its typical properties are:

Form	Liquid
Color	Amber
Specific Gravity	Approx. 0.92
Charge	Nonionic

APPLICATION

OIL AID-S-20 has the following applications and advantages:

1. OIL AID-S-20 can be used in all types of hydrochloric acids including 15% and 28% concentrations.
2. OIL AID-S-20 can be used in hydrochloric/hydrofluoric acid formulations.
3. Surface tension is reduced considerably to a range of 26 to 30 dynes / cm by the use of OIL AID-S-20.
4. OIL AID-S-20 is normally used in concentrations of 0.5 - 1.5 gal per 1,000 gal of fluid, making it an extremely cost effective surfactant.
5. Utilization of OIL AID-S-20 in acidizing treatment improves fluid penetration and fluid recovery after treatment in tight formations.
6. The use of OIL AID-S-20 greatly enhances the wetting characteristics of the acid on the rock face.
7. OIL AID-S-20 is fully compatible with a wide variety of other additives, enabling multi-functional fluids and acid treatments to be formulated.

CONCENTRATION

OIL AID-S-20 is normally used in concentrations of 1.5 to 4 gal per 1,000 gal of fluid. For most acidizing and or other treating fluids, 2 gal per 1,000 is the recommended concentration, although the actual loadings will vary with the situation, and may actually be less. Typical surface tension readings in various acids and water based fluids can be seen in the attached tables. The loadings necessary for use in the field should always be determined ahead of time by pilot testing in the laboratory.

RECOMMENDED TREATMENT

To realize the full benefits of OIL AID-S-20, the following typical mixing procedure for acid formulations is recommended.

1. Prepare the calculated quantity of water (and inhibitor) in the mixing tank.
2. Add desired amount of OIL AID-S-20 based on the final treating fluid volume.
3. Circulate and mix thoroughly to ensure even dispersion of OIL AID-S-20.
4. Add the required quantity of acid concentrate.
5. Continue circulating to allow total uniformity of the finished fluid.

The same typical loading range applies to water-based frac fluids. If this procedure is followed full dispersion and optimized utilization of OIL AID-S-20 will be achieved.

SAFETY

The following safety procedures should be followed when handling OIL AID-S-20.

1. In case of eye contact, flush the eyes thoroughly for a period of 20-25 minutes and obtain medical treatment immediately.
2. Chemical goggles should always be worn when handling this product.
3. For slight skin contact wash the affected area with soap and water thoroughly. In the event of prolonged skin contact a very mild burn may occur, once again the infected area should be thoroughly washed and medical attention sought.
4. OIL AID-S-20 is a flammable liquid, and therefore, should always be handled in a very well ventilated area, and all personnel should avoid inhaling fumes.

PACKAGING

OIL AID-S-20 is available in 55 gal drums.

OIL AID-S-20 is a Messina trademark