



# OIL AID-OG-1

## HIGH TEMPERATURE OIL GELLING AGENT

### DESCRIPTION

OIL AID-OG-1 is Messina's new generation, cost-effective liquid oil gellant for use in Messina's High Temperature Oilaid Gelled Oil System, which is stable at temperatures in excess of 300° F (149° C).

Its typical properties are:

Form	Clear to Amber Liquid
Specific Gravity at 60° F (16° C)	0.98 - 1.02
Pour Point	25 °F (-4 °C)
Flash Point	144 °F (62 °C)
Charge	Anionic
Solubility in Water	Insoluble

### APPLICATION

Messina's High Temperature Oilaid Gelled Oil System is an effective two-component gellant for use with crude oils, kerosene, or diesel oils. It is composed of OIL AID-OG-1, a high temperature oil gellant, and OIL AID-OA-10, an oil gellant activator, and can be broken with OIL AID-OB-10, or with OIL AID-OB-15.

In the past, oil-based fracturing fluid systems used different gelling agents for different types of oils, and bottom hole temperature limitations. No products were available on the market that could function as uniformly under a wide range of conditions as OIL AID-OG-1. Because of its superior performance characteristics, OIL AID-OG-1 replaces two earlier generation oil gelling agents--OIL AID-OG-2, and OIL AID-OG-12, in Messina's product line.

There are two major advantages of this new-generation gellant . It has excellent thermal stability (OIL AID-OG-1 will withstand downhole temperatures in excess of 300° F (149° C)), and it will perform very well in a variety of hydrocarbons--kerosene, and diesel oil, as well as blends of crude oils and solvents, and low API gravity crudes.

These benefits make this product a more universally acceptable gelling agent. High Temperature Oilaid Gelled Oil System can exhibit friction reductions up to 60% over non-gelled crude oil, thereby reducing surface pressure and horsepower requirements while fracturing. Additional friction reducers are not necessary with this system.



## RECOMMENDED TREATMENT

OILAIID-OG-1 is added directly to the frac tank of oil at a concentration of from 6 to 16 gal per 1000 gal to achieve a high viscosity gelled system with good friction reduction properties. The amount of OILAIID-OG-1 required will depend upon the oil to be gelled and upon the temperature requirements.

When a low viscosity fluid is designed specifically for friction reduction, OILAIID-OG-1 is added to the frac tank at a concentration of 2-4 gal per 1000 gal.

The normal dosage of OILAIID-OA-10 required for gel activation will be approximately 1.8 gal per 10 gal of OILAIIDOG-1. Depending upon required initial viscosities, partial addition of OILAIID-OA-10 may be required, consisting of batch mixing approximately 2/3 of the appropriate amount of OILAIID-OA-10, then adding the remaining 1/3 on the fly. In order to optimize the loading of OILAIID-OA-10, each oil to be gelled should be tested prior to field gelling.

It is suggested that OILAIID-OG-1 and OILAIID-OA-10 be added simultaneously or alternately, as some foaming may be encountered depending on the hydrocarbon being gelled. In order to achieve optimum viscosity, it will be necessary to check each fluid to determine the proper dosage of OILAIID-OG-1 and OILAIID-OA-10.

## LABORATORY GELLING PROCEDURE

### Equipment:

Fann 35A viscometer  
200 ml plastic disposable cups w/lids  
3 ml syringe  
1 ml syringe

### Procedure:

1. Place 1 to 2 ml OILAIID-OG-1 and 100 ml hydrocarbon in 200 ml cup.
2. Add OILAIID-OA-10 (dropwise) from 1 ml syringe. Shake well or use homogenizer stirrer between drip addition and monitor viscosity. Increase on Fann at 100 rpm Fann reading to stabilize.
3. Viscosity should rise to maximum and begin falling when approximately .1 to .2 ml of OILAIID-OA-10 has been added to the amount of OILAIID-OG-1.
4. Repeat using slightly less OILAIID-OA-10 to determine best ratio of OILAIID-OG-1 and OILAIID-OA-10 for maximum viscosity. Ratio will vary with different hydrocarbons.



When testing for optimum loading on a low viscosity friction reducer, repeat the procedure in Steps 1-4, but use 0.4- 0.8 ml of OIL AID-OG-1 and 0.06-0.15 ml OIL AID-OA-10.

### Oil Friction Reducer

When used as an oil friction reducer, the normal dosage for OIL AID-OG-1 is 2-4 gal per 1000 gal of oil. The normal dosage for OIL AID-OA-10 (activator) in this system is 0.36 to 0.72 gal per 1000 gal of fluid. For optimum results, OIL AID-OA-10 should be added on the fly. Loading tolerance for the OIL AID-OA-10 is 25% above or below the recommended dosage. If too much OIL AID-OA-10 is added, additional OIL AID-OG-1 can be used to bring the system back to the proper ratio.

### Compatibility

OIL AID-OG-1 has been tested for compatibility with materials of construction and can be used with polyethylene, PVC, Teflon, Plexiglass, aluminum, brass, mild steel, 304 SS, 316 SS, copper, etc. OIL AID-OG-1 should not be used with rubber, vinyl, Neoprene, Hypalon, Buna-N, polypropylene, ethylene propylene, polyurethane, Viton, or Plastite 10-7122.

### **HANDLING**

OIL AID-OG-1 should be kept away from sparks, heat and open flame. When handling OIL AID-OG-1, rubber gloves and face shield should be worn. Do not take OIL AID-OG-1 internally. In case of combustion, treat like an acid fire.

### **PACKAGING**

OIL AID-OG-1 is available in 55 gal steel drums. Other types of packaging containers are available on request.

OIL AID-OG-1 is a Messina trademark

