Technical Data Sheet **ICC-Oil Mud Emulsifier, Primary Emulsifier**

Oil-Mud Emulsifier

A chemical used in preparation and maintenance of an oil or synthetic-base drilling fluid that forms a water-in-oil emulsion (invert emulsion). An oil-mud emulsifier lowers the interfacial tension between oil and water, which allows stable emulsions with small drops to be formed. Historically, oil-mud emulsifiers have been classified as primary and secondary. Secondary emulsifiers are generally not used alone to make a stable oil mud. These emulsifiers surround water droplets, like an encapsulating film, with the fatty acid component extending into the oil phase. Emulsifier molecules that cannot fit around drops form clusters (micelles) in the oil phase or adsorb onto solids. Oil-mud emulsion drops each behave like a small osmotic cell. The emulsifier around the drops acts like a semi permeable membrane through which water can move but ions cannot pass. Thus, oil muds have the special capability (which water muds do not have) to control water transfer to and from the drops simply by adjusting salinity within the water phase of the oil mud.

ICC manufactures a range of oil-mud emulsifiers which have been classified as primary and secondary.

ICC-PEMUL is a formulated blend of emulsifiers for use as a primary emulsifier in the invert drilling mud system.

ICC-PEMUL is a liquid blend of selected primary emulsifier. It is used to emulsify water into oil in oil /diesel based drilling fluids. It provides excellent emulsion stability, acts as a wetting agent, gelling agent and fluid stabilizer in a mineral oil base. It is also used for filtration control and for temperature stability. **ICC-PEMUL** is an invert mud primary emulsifier. It is designed to improve the oil wet ability of drilling solids and increase the stability of the oil mud by primary emulsification between the liquid phases. It assists the performance of the invert emulsifiers by encircling each solids particle with an oil layer, and hence preventing emulsion break down due to solids water wetting, thereby keeping stability high .

Kaj Building., Central Tohid St., Isfahan, IRAN
Tell: +98 31- 36258711-14, P. O. B: 8173718393
Email: info.isfahancopolymer@gmail.com

Technical Data Sheet **ICC-Oil Mud Emulsifier, Primary Emulsifier**

Typical Physical Properties

CHARACTERISTIC	STANDARD	Test Method
Physical appearance	Yellow to Light Brown Liquid	----
pH (100% solution)	7	ASTM D-1172
Sp.Gr @25 ˚C (g/ml)	0.9±0.02	ASTM D-1298
Pour Point (˚C)	< -5	ASTM D-97
Flash Point (˚C)	> 90 ºC	ASTM D-92
Solubility in Water	Insoluble	----

Applications

ICC-PEMUL should be applied as a primary emulsifier to provide mud stability (as measured by fluid loss and ES reading).

The levels of **ICC-PEMUL** used is a function of required performance in terms of temperature. It is sufficient to give stable emulsion and provide a good base for the secondary emulsifier to do the tuning.

The use of **ICC-PEMUL** will provide the stability of the mud, and tighten the control of the fluid loss, as well as imparting high oil wetting ability. When drilling through magnesium formation, the use of an emulsifier for the **ICC-PEMUL** range is required to give stable fluid properties under bottom hole conditions.

ICC-PEMUL produces stable emulsions which are resistant to high temperatures and to contamination.

ICC-PEMUL imparts good fluid loss properties to the mud. Lime is required to fully activate the emulsion and provide tight fluid loss control. It is recommended that PEMUL be used in conjunction with **ICC-SEMUL** in order to produce invert muds that have excellent emulsion stability with variety of base oils.

ICC-PEMUL is used as a primary emulsifier providing Excellent and very Stable Emulsion and oil wetting agent. It contributes to temperature stability and HTHP filtration control and is most effective over a wide range of temperatures and also in the presence of contaminants .It provides viscosity and filtration control and temperature stability.

Kaj Building., Central Tohid St., Isfahan, IRAN
Tell: +98 31- 36258711-14, P. O. B: 8173718393
Email: info.isfahancopolymer@gmail.com

Technical Data Sheet **ICC-Oil Mud Emulsifier, Primary Emulsifier**

Advantages

- It is multipurpose product which may be used in a wide variety of oil mud system.
- It improves emulsion stability and functions as a secondary wetting agent.
- Provides viscosity and filtration control.
- Improves thermal stability.
- Works effectively over a wide range of temperatures.
- It improves emulsion stability.
- It has secondary wetting agent capabilities.
- It helps maintain HTHP fluid loss in water-free state.
- It will enhance thermal stability and increase contamination tolerance of oil mud.
- It is stable to temperatures above 200°C.
- Reduced gel strengths.

Features

- Excellent emulsion drops dispersion and system stability.
- Widely applied in many operation sections and obtain excellent reputation.

Packaging and Storage

ICC-PEMUL is packaged in 220 Lit polyethylene or steel drum. Customized packaging is also available on request.

ICC-PEMUL store in dry, well-ventilated area. Keep container closed. Keep away from heat, sparks and flames. Store away from incompatibles. Follow safe warehousing practice s regarding palletizing, banding, shrink-wrapping and/or stacking.

Shelf Life

ICC-PEMUL has shelf life of at least six months from the data of manufacture when stored in the original sealed containers in a cool and dry place.

Safety and Handling

ICC-PEMUL must be handled as an Industrial chemical, wearing protective equipment and observing the precautions as mentioned in the MSDS.

Kaj Building., Central Tohid St., Isfahan, IRAN
Tell: +98 31- 36258711-14, P. O. B: 8173718393
Email: info.isfahancopolymer@gmail.com