



Description

Nut-Plug LCM F/M/C is a conventional granular loss circulation material which is applicable in both water-based and oil-based drilling fluid systems. Nut-Plug LCM which is crushed walnut shells have a high strength and can alleviate downhole loss circulation with severity of up to 100 BBL/Hr. Nut-Plug LCM F/M/C is available in three different sizes (fine, medium and coarse). It is better to pumped as LCM pills, and functions more efficiently when it is used with other type of LCMs such as MICA and Sized Calcium Carbonate.

Application

Main function of Nut-Plug LCM is to minimize or cure downhole losses in fracture or permeable areas. Based on severity of losses, type and optimum concentration of Nut-Plug LCM is selected and pumped. It can be used in workover operations as well as drilling.

Advantages

- Easy to mix through hopper
- Cost effective LCM
- Having high strength in compaction
- Compatible with most types of regular water-based and oil-based muds
- Stable up to 300°F
- Provide sufficient sealing in fracture zones and thief areas

Limitations

- It has unwanted effects on rheological characteristics when added to the active circulating system, and it is better to be used as LCM pills.
- Medium and Coarse sizes may plug the bit nozzles in high concentrations
- Not suitable for using in reservoir sections

Treatment

Dependent to severity of Losses, normal concentrations for Nut-Plug LCM F/M/C ranges from 5 to 50 lb/bbl (14-140 Kg/M³) in LCM pills. It should be added slowly through rig hoppers. Treatments must be performed on an incremental basis to prevent any overtreatment and high rheological properties. In special conditions such as work-over wells or cavernous formations, up to 70 lb/bbl of Nut-Plug LCM F/M/C may be needed. It is better to pumped as LCM pills, and functions more efficiently when it is used with other type of LCMs such as MICA and Sized Calcium Carbonate. Before mixing and pumping any Nut-Plug LCM, mud engineers must check size of material with company representative and MWD specialist to prevent any tool blocking in downhole.



Typical Properties

APPEARANCE	Light to dark-tan granular particles
SPECIFIC GRAVITY	1.2-1.4
pH (1% Solution)	NA
Solubility in water	Insoluble in cold water

Nut-Plug LCM F/M/C sizes are given in below table

Mesh No	mm	Nut-Plug F	Nut-Plug M	Nut-Plug C
		% retained/residue		
5	4	-	10 +/- 5	-
10	2	0	60 +/- 5	90 +/- 5
20	0.841	10 +/- 5	90 +/- 5	-
40	0.42	-	100	-
60	0.25	90 +/- 5	-	-

Packaging

Nut-Plug LCM F/M/C is available in 25 KG SXS.