



Version 06/10/2021

TECHNICAL DATA SHEET

Description

E-LQ ADDITIVE is a high performance lost circulation material that able to control & seal different severity of lost and compatible with all mud systems.

Functionality

E-LQ ADDITIVE is a combination of cellulosic materials used to bridge and seal porous and fractured formations. this bridging agent available in three types: Fine, Medium, Coarse.

How to use

E-LQ ADDITIVE is a ready-to-use product for direct application. The application depend on the severity of the fluid loss.

General Information

Appearance	tan creamy powder
Density g/ml at 25°C	0.7-0.8
Fine Particle Size (mm)	>1
Medium Particle Size (mm)	>3
Coarse Particle Size (mm)	>6

Safety and Handling

Keep container closed. Keep away from heat, sparks and other ignition sources.

Typical shelf life

12 months (closed container, stored at ambient temperature)

Packaging

E-LQ ADDITIVE is packaged in sacks (25 kg) or big bags
Customized packaging is also available on request.

TEST RESULTS

Evaluation of "E-LO (Fine)" With BMT Apparatus in different Slot Sizes in According to Static Slot Test (API Method)

Mud Composition	Unit	Concentration
Fresh Water	ml	350
Soda Ash	gr	1
Caustic Soda	gr	0.5
Salt	gr	90
Starch	gr	10
PAC-LV	gr	2
XC Polymer	gr	1
Lime Stone	gr	52
KCL	gr	14
properties		Test Condition
0600 @140°F		89
0300@140°F		61
Apparent Viscosity(Cp)		44.5
Plastic Viscosity (Cp)		28
Yield Point (lb/100ft ²)		33
Gel Strength (lb/100ft ²)		5/6
Mud Weight (pcf)		78
Marsh Funnel (sec)		65

NOTE:

For Evaluating of "E-LQ(Fine)" used from BMT Apparatus. with according to particle sizes of LCM, this test will be done on the mentioned slots & in the different concentration of "E-LQ(Fine)".

And then, the gain results comparison with "MICA(Fine)" & "QUICK SEAL(FINE)".

Table 1)

Sample Type: E-LQ(Fine)
Concentration of LCM: 15 ppb
Slot Size:0.08 in
Mud Weight:78 pcf
Mud Type: kcl-polymer mud

Pressure(psi)	Mud Loss(ml)	Comment
14.7	0	-
100	0	-
200	0	-
300	0	-
400	0	-
500	0	-
600	0	-
700	0	-
800	0	-
900	0	-
1000	0	Maximum Sealing Pressure



Table 2)

Sample Type: E-LQ(Fine)

Concentration of LCM: 5 ppb

Slot Size:0.04 in

Mud Weight:78 pcf

Mud Type: kcl-polymer mud

Pressure(psi)	Mud Loss(ml)	Comment
14.7	0	-
100	0	-
200	0	-
300	0	-
400	0	-
500	50	-
600	50	-
700	50	-
800	50	-
900	50	-
1000	50	Maximum Sealing Pressure



Table 3)

Sample Type: E-LQ(Fine)

Concentration of LCM: 15 ppb

Slot Size:0.08 in

Mud Weight:78 pcf

Mud Type: kcl-polymer mud

Pressure(psi)	Mud Loss(ml)	Comment
14.7	0	-
100	0	-
200	50	-
300	100	-
400	100	-
500	100	-
600	100	-
700	150	-
800	200	-
900	200	-
1000	200	Maximum Sealing Pressure



Table 4)

Sample Type: E-LQ(Fine)

Concentration of LCM: 5 ppb

Slot Size:0.08 in

Mud Weight:78 pcf

Mud Type: kcl-polymer mud

Pressure(psi)	Mud Loss(ml)	Comment
14.7	0	-
100	50	-
200	50	-
300	50	-
400	100	-
500	200	-
600	200	-
700	200	-
800	200	-
900	200	-
1000	200	Maximum Sealing Pressure



Table 5)

Sample Type: E-LQ(Fine)
Concentration of LCM: 15 ppb
Slot Size:0.12 in
Mud Weight:78 pcf
Mud Type: kcl-polymer mud

Pressure(psi)	Mud Loss(ml)	Comment
14.7	50	-
100	100	-
200	200	-
300	300	-
400	400	-
500	400	-
600	400	Maximum Sealing Pressure
700	3500	Complete Loss
800	-	-
900	-	-
1000	-	-



Table 6)

Sample Type: E-LQ(Fine)
Concentration of LCM: 20 ppb
Slot Size:0.12 in
Mud Weight:78 pcf
Mud Type: kcl-polymer mud

Pressure(psi)	Mud Loss(ml)	Comment
14.7	50	-
100	100	-
200	300	-
300	300	-
400	300	-
500	400	-
600	400	-
700	400	-
800	400	-
900	400	-
1000	400	Maximum Sealing Pressure

Conclusion:

With regarding to the gain results from BMT Apparatus, it can say that E-LQ Additive have an excellent performance in the control of loss on the slots of 1 to 3 inch.

Evaluation of “MICA(Fine)” With BMT Apparatus According to Static Slot Test(API Method)

Table 7)

Sample Type: MICA(Fine)
Concentration of LCM: 15 ppb
Slot Size:0.04 in
Mud Weight:78 pcf
Mud Type: kcl-polymer mud

Pressure(psi)	Mud Loss(ml)	Comment
14.7	1000	-
100	1500	Maximum Sealing Pressure
200	3500	Complete Loss
300	-	-
400	-	-
500	-	-
600	-	-
700	-	-
800	-	-
900	-	-
1000	-	-



Evaluation of “QUICK SEAL(Fine)” With BMT Apparatus in According to Static Slot Test(API Method)

Table 8)

Sample Type: QUICK SEAL(Fine)
Concentration of LCM: 15 ppb
Slot Size:0.04 in
Mud Weight:78 pcf
Mud Type: kcl-polymer mud

Pressure(psi)	Mud Loss(ml)	Comment
14.7	700	-
100	1000	-
200	1900	-
300	2900	Maximum Sealing Pressure
400	3500	Complete Loss
500	-	-
600	-	-
700	-	-
800	-	-
900	-	-
1000	-	-

Conclusion:

With regarding to the tables of 1,7 and 8, it can say that a concentration of 15 ppb from MICA(Fine) & QUICK SEAL, in slot of 0.04 inch,these twoproducts,can not control the loss of the mud. However,E-LQ ADDITIVE can completely control it.

On the other side:

- 1) According to the second table,E-LQ ADDITIVE can have an excellent performance ,even in the slot of 0.04 inch.
- 2) Even in the bigger slot sizes such as 0.08 & 0.12(inch) ,E-LQ ADDITIVE can easily control the loss of the mud.
- 3) Because of the weak gain results from MICA&QUICK SEAL in the slot of 0.04 inch,these two products do not tested in the bigger slot sizes.

NOTE: E-LQ ADDITIVE Compatible with all of the base mud such as oil, bentonite & emulsion base muds.

And have a high performance with respect to the other LCM. Also,because of the Biodegradable property,this additive can use& apply in the pay zone of the well.