



CA-TX1L

LIQUID THIXOTROPIC AGENT

DESCRIPTION

CA-TX1L is a clear, slightly yellow solution used in conjunction with CA-TX2 or selected other Messina polymers to produce a cement with unique thixotropic properties. Cement slurries formulated with CA-TX1L:CA-TX2 exhibit rapid gel strength development when static or at low shear rates. The rapid onset of gel strength allows the cement to become "self-supporting", thus reducing cement "fall-back" and lost circulation. Its physical properties are:

Color	Clear, slightly yellow
Destiny	11.3 ppg or 1.36 s.g.
Freezing Point	6 °F (-14 °C)

ADVANTAGES

CA-TX1L:CA-TX2 cement has several advantages over other thixotropic cements now in use.

- CA-TX1L is compatible with all API cements.
- CA-TX1L is pre-blended with the cement mix water.
- CA-TX1L offers greater flexibility and compatibility in slurry design.
- CA-TX1L can be accelerated, retarded or used in combination with most cement additives.
- CA-TX1L compressive strengths are high enough for use as a primary cement.
- CA-TX1L:CA-TX2 cement offers good fluid loss control.

APPLICATION

CA-TX1L:CA-TX2 cement slurries are designed to have low viscosity when mixed and then gel when allowed to remain static for a period of 5 minutes or less. The slurry can be thinned (gel broken) if the slurry is moved again. This process is repeatable until the cement starts to hydrate. The longer the slurry remains quiescent, the greater the gel strength and viscosity development. If thixotropic cements remain stable for more than 20



minutes, their gel strength may prevent them from being moved again. Cement slurries possessing this low-high-low viscosity behavior are characterized as being thixotropic cements.

The thixotropic properties of CA-TX1L:CA-TX2 cement designs make them particularly useful for combatting lost circulation and cement "fall-back" problems when cementing in areas with unconsolidated, highly permeable, fractured, vugular or cavernous formations.

RECOMMENDED TREATMENT

CA-TX1L is recommended at 0.166 gal per sack of cement and should be used in combination with 0.25% (BWOC) CA-TX2 for slurry designs ranging in density from 12.0 to 15.6 ppg. Cement mix water can vary from 5.2 to 13.8 gal/sk of cement, however, for best results the slurry density should range from 14.0 to 15.6 ppg. At densities greater than 15.4 ppg, a recirculating mixer is required for proper mixing.

CA-FL6, CA-FL7 or CA-FL8 may be substituted for CA-TX2, but they are not equivalent; laboratory testing will be required to determine the required concentration for optimum performance if an alternate polymer is utilized. Generally, 2% CA-A1 is recommended for circulating temperatures <120°F (49°C) and CA-R5 is recommended for temperatures >160°F (71°C). Although CA-TX1L is compatible with most cement additives, CA-FR3P, CA-FR3L and most high temperature retarders are not recommended for use with CA-TX1L cements. Due to their dispersing properties, dispersants and some retarders can reduce or destroy the thixotropic properties of CA-TX1L:CA-TX2 slurries.

SAFETY

CA-TX1L is a strong acid and should be handled accordingly. Goggles and gloves should be worn when handling CA-TX1L. In case of eye contact, flush eyes for a minimum of 15 minutes and obtain medical attention. For skin contact, wash area thoroughly with soap and water.

PACKAGING

CA-TX1L is provided in 30 gallon plastic-lined, steel drums.