BRENNTAG

ConnectingChemistry

CEMENTING

Product Portfolio

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Cementing of wellbore is one of the most critical operation in the drilling and completion of oil and gas wells. The most important function of Oil & Gas well cementing is to isolate the various zones within wellbore, provide adequate support for casing and prevent any fluids to migrate.

This refers to primary cementing and secondary operations related to remedial jobs or P&A operations. Depending on application, cement slurry needs to be tailored to specific requirements and downhole conditions. To achieve desired cement properties multiple additives are used.

Properly designed cement job and top quality additives are main contributors to successful cement job.

Brenntag offers a wide variety of specialized cementing additives for oilfield needs. We have developed a line of products including:

- accelerators
- retarders
- defoamers (alcohol and silicone based)
- gas migration control (including latex)
- fluid loss
- extenders
- lost circulation materials (LCM)
- weighting agents
- mud removal and spacers
- other functional additives

OIL&GAS technology and service

ACCELERATORS

Thickening time is one of the most important cement parameter to control. Depending on cement job duration and bottom hole temperatures, there may be a need of adjusting cement consistency change.

In case of low temperatures or a need of reducing WOC time, accelerators can be used:

- calcium chloride (flakes – various conc. available)
- sodium chloride
- potassium chloride

RETARDERS

In most of situations, extension of thickening time is desired. Depending of slurry composition and bottom hole conditions (mainly temperature) there may be different retarder type needed:

- Brenntathin 8200
- Brenntaret 1501
- Brenntaret 9007

DEFOAMERS

Most of cement systems contain additives of strong foaming tendency like lignosulfonates, bentonite, latexes or salts. Air entrapped in liquid cement can impact important cement slurry properties like density, rheology and compressive strength of set cement. This can lead to serious service quality problems on job.

Brenntag has developed line of defoamers tailored to various liquids including different cement slurries. Most of foaming cements can be eliminated with following (liquid) defoamers, however Brenntag can assort unique defoamer for individual case, also in powder form:

- Brenntaskim C 7150
- Brenntaskim C 7012

LIGHTWEIGHT/ EXTENDERS

To ensure integrity and stability of a well, it is important to maintain appropriate cement slurry density. Brenntag is offering cement extenders and lightweight additives to keep designed slurry density measured on surface and under bottom hole pressures and maintain appropriate stability of cement slurry:

- bentonite
- attapulgite (salt water dispersing clay)
- Brenntight 20 (amorphous silica slurry)
- cenospheres
- glass beads
- pozzolanic materials

FLUID LOSS

To control cement fluid loss (filtration) Brenntag is offering various types of additives providing different degree of fluid loss control. Loss of aqueous phase is directly impacting quality and safety of cement jobs.

High fluid loss values create various risks including hydrostatic pressure loss, compressive strength reduction, premature cement set, permeability damage of reservoir zones:

- Brenntight 15 (amorphous silica slurry)
- D-3015 (up to 120°C)
- D-3018 (up to 200°C)

GAS MIGRATION

Gas migration is a major concern when designing cement jobs. Correct job design needs to be supported with cement additives to help with gas migration through unset and set cement.

Different additives provide different mechanism of reducing gas migration including fluid loss reduction (maintaining hydrostatic pressure and volume), shortening transition time (promoting thixotropy), reducing shrink and permeability of set cement:

- Brenntight 4726 – Latex
- Brenntight 4623 – Latex
- Brenntight 5000 – Latex
- latex stabilizers
- Brenntight 15

DISPERSANTS/ FRICTION REDUCERS

Well bore geometry may often require friction reduction, especially when dense and thick cements being pumped downhole. Dispersants are used to modify slurry rheology and mixability. There is a selection of dispersants available representing different dispersing strength:

- Brenntathin 8200
- Brenntathin 9100
- Brenntathin 9150
- Brenntathin 9200

WEIGHTING AGENTS

To control cement slurry density Brenntag is offering variety of weighting agents:

- barite
- hematite
- ilmenite
- manganese oxide

LOST CIRCULATION MATERIALS (LCM)

In case of lost circulation event, the best option is to cure losses before cement job starts, nevertheless LCM's can be added to cement slurry and cement spacer:

- PP fibers (various lengths)
- mica
- rubber elements

CEMENT SPACER SYSTEMS

To ensure effective mud displacement and maintain appropriate fluid separation – spacer fluids needs to be pumped before pumping cement slurry. Depending on mud type and properties there are different spacer systems needed.

- Brenntawet series: pre-flush systems, surfactant blends for OBM, solvent blends for OBM
- viscosifying spacer system for WBM and OBM (under development)

Other additives

Brenntag offers miscellaneous functional materials and chemicals associated with cementing services: silica flour (fine), sodium silicate, sodium metasilicate, sodium phosphate, HEC.

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