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Fluid Loss Control Additives for Cement Slurry (Synthetic Type)

Fluid Loss Control Additive for Cement Slurry NHG33S

Product Description

Soluble polymer that consists of multiple functional groups has better anti-temperature and anti-salt ability.

Characteristics

- NH-G33S is polymerized by AMPS, low molecular amide and carboxyl acid.
- Appearance: powder or particles, residue (0.420mm screen) ≤7%.
- Temperature range: 86~392 F (30 - 200℃)
- Salt range: fresh to saturated water
- Filtration property: <100mlAPI FL
- Solubility: full soluble
- Dosage: 1~3% (BWOC)
- Compatibility: good
- Solubility with cement: any class of cement
- Stability: free water approach zero
- Thickening time: thickening curve approach a right-angle
- Density range: any density of cement slurry
- Has a certain retarding property on the cement slurry.

Technical Specification

- Appearance Free flowing powder or particles

- Initial consistency, BC ≤30
- Fluid loss, ml/176F, 6.9MPa, 30min ≤100
- Thickening time ,ml/176F, 40MPa, 40min ≥60
- Compression strength ,MPa/230F, 21Mpa,24h ≥14

The ingredients of the cement in the table are: G class: cement, water quality: tap-water, W/C: 0.44， Dosage of NH-G33S: 1.5% (BWOC).

Packing, Storage

- Sacked with three-layer plastics bag, 25kg per bag
- Store in cool and dry situation.
- Storage lifetime is two years.

Fluid Loss Control Additive for Cement Slurry NHG34S (High Temperature and High Purity)

Product Description

NHG34S belongs to pure polymerization and water-soluble agent. It reduces the slurry cake permeability by the aggregation of water-soluble high polymer molecular chain. And a variety of functional groups are introduced into the polymer to enhance the anti-high temperature property and salt resistance.

Characteristics

- NHG34S is polymerized by AMPS, low molecular amide, auxiliary solvent, etc.
- Anti temperature property: 30～200℃.
- Anti salt property: fresh water until saturated brine.
- Water solubility: dissolved in water easily.
- Filtration property: ＜80ml API FL
- Generally, dosage range: 0.5~1.5% (BWOC)
- Good compatibility with other additives.
- Compatibility with cement: suitable for all levels of oil well cement.
- The cement slurry thickening transition time is short, close to right angle thickening.
- Suitable for low, conventional and high density cement slurry system .
- Having a little retarding property to the cement slurry.
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Technical Specification

Items	Specification
Appearance	White or yellowish powder or particles
Water content,%	≤8.0
Fineness (0.315mm sieve),%	≤15.0
Initial consistrency , Bc/80℃,46.5MPa,45min	≤30
Mutation value of thickening curve，Bc	≤10
40Bc ~ 100Bc time,min	≤40
Fluid loss,ml/80℃,6.9MPa,30min	≤80
Free liquid,%	≤1.4
Compression strength, Mpa/102℃,21Mpa,24h	≥14

The ingredient of the cement in the table is: G class cement:800g+ tap-water:352ml+NHG34S: 0.8% (BWOC).

Packing And Storage

- Three-layer plastics bag, 25kg per bag or at clients choice.
- Stored in cool and dry situation.
- Storage lifetime is two years.

Fluid Loss Control Additive for Cement Slurry-NHG35S

Product Description

NHG35S is especially used in low density and high temperature conditions. It belongs to pure polymerization and water-soluble agent, reducing the slurry cake permeability by the aggregation of water-soluble high polymer molecular chain. And a variety of functional groups are introduced into the polymer to enhance the performance of high temperature resistance and salt resistance. At the same time, NHG35S has good suspension property.

Characteristics

- NHG35S is polymerized by AMPS, low molecular amide, auxiliary solvent,etc.
- Temperature Range: up to 200℃.
- Salt Resistance: fresh water until saturated brine.
- Water solubility: completely soluble in water.
- Filtration property: ＜80ml API FL
- Generally dosage range: 0.5~1.2% (BWOC)
- Good compatibility with other additives.
- Compatibility with cement: suitable for all levels of oil well cement.
- The cement slurry thickening transition time is short, close to right angle thickening.
- Suitable for low, conventional and high-density cement slurry system.
- Having a little retarding property to the cement slurry.
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Technical Specification

Items	Specification
Appearance	White or yellowish powder or particles
Water content,%	≤8.0
Fineness (0.315mm sieve),%	≤15.0
Initial consistrency , Bc/80℃,46.5MPa,45min	≤30
Mutation value of thickening curve，Bc	≤10
40Bc ~ 100Bc time,min	≤40
Fluid loss,ml/80℃,6.9MPa,30min	≤80
Free liquid,%	≤1.4
Compression strength, Mpa/102℃,21Mpa,24h	≥14

Packaging and Storage

- Three-layer plastics bag, 25kg per bag
- Stored in cool and dry situation. Storage lifetime is two years.

Fluid Loss Control Additive for Cement Slurry – NHFL620HT

SUMMARY

- Effective fluid loss additive with high purity and low dosage.
- Provide Fluid loss control in low, normal or high-density cement slurries.
- Wide Temperature Range: 0-204℃（32-400°F）BHCT
- Could be used in both fresh water and salt water up to 37% concentration.
- Ensure cement slurry system is stable with little free fluid.
- Non-retarding, and the cement's compressive strength develops fast.
- Good fluidity will not lead to over-disperse or thickened and decrease the using of dispersant.
- Compatible well with other additives in cement slurry.
- Suitable for all API classes oil well cement.
- Mix with water or dry mix, no water quality required and soluble in cold water.

PHYSICAL AND CHEMICAL INDICATORS

Appearance	Bulk Density, g/cm^3	Water-Solubility	0.315mm Sieve (45 mesh) Residues, %	Specific Density g/cm^3
White or faint yellow powder	0.80±0.20	100%	<12	1.53

CEMENT SLURRY PRESCRIPTION

Cement Slurry Density	Recommended Dosage in Fresh Water and Moderate	Recommended Dosage in 18% Slat Water and Moderate	Recommended Dosage in 18% Salt Water and High

	Temperature System	Temperature System	Temperature System
1.90±0.01g/cm^3 (in fresh water, W/C=0.44, in 18% salt water, W/C=0.57)	0.9%(BWOC) or 0.99lb./50Kg Cement	1.25%(BWOC) or 1.375 lb./50Kg Cement	2.0%(BWOC) or 2.20 lb./50Kg Cement

Note**: Dosage Range: 0.8-0.9% (BWOC) in Fresh Water Cement Slurry and 1.25%-2.0% (BWOC) in Salt Water Cement Slurry and high temperature over 120°C (BHCT) .**According to the difference of cement, mixing water and slurry density, the dosage should be adjusted. The dosage should be increased when used in high concentration salt water and high temperature.

CEMENT SLURRY PERFORMANCE

Item		Test Condition	Technical Indicator
Fluid loss, ml	Fresh water system	80°C, 6.9MPa	≤50
	18% salt water system		≤150
	18% salt water system	120°C,6.9Mpa	≤150
	18% salt water system	205°C, 6.9MPa	≤150
Initial consistency, Bc		80°C/45min, 46.5MPa	≤25
40-100 Bc thickening time, min			≤40
Thickening time, min			50 – 150
Free fluid, %		80°C, Atmospheric Pressure	≤1.4
24h compressive strength, MPa			≥14

PACKING AND STORAGE

- It is packed with 25kg bag. It can also be packed according to user requirements.
- Normally used within 18 months after production. If expired, test should be done to confirm the quality. Store in ventilated, cool and dry area, avoid exposing to sun and rain. The height of stack should be less than 8.

Application Results:

It has been applied by CNPC in XinJiang Oilfield deep, HT oil well cementing process and geothermal well cementing in Kenya & Japan with satisfactory results.

FLUID LOSS CONTROL ADDITIVE FOR CEMENT SLURRY - NHFL610 (High Purity)

- A high efficient fluid loss additive with high purity and low dosage.
- Applicable in a wide temperature range and is resistant to high temperature up to 180C.
- Is resistant to saturated brine.
- Stable with little free fluid.
- Excellent rheological behavior. It doesn't require additional dispersant.
- Suitable for both water and dry mixed. It has no special requirement on the quality of mixing water and is soluble in cold water.
- Good compatibility with other additives.

SPECIAL ATTENTIONS

- Its dosage should be increased if used in brine and high temperature system.
- Specialized bactericide should be added to extend the expiration period after the fluid is prepared beforehand.

PHYSICAL AND CHEMICAL INDICATORS

Appearance	Bulk Density g/cm^3	Water-Solubility	0.315mm Sieve (45 mesh) Residues %
white powder	**0.70±0.20**	**100%**	**<12**

CEMENT SLURRY PERFORMANCE

Item	Test Condition	Technical Indicator
Initial consistency, Bc	**80℃/45min, 46.5MPa**	**≤25**
Thickening time, min		**50-150**
Fluid loss, ml	**80℃, 6.9MPa**	**≤50**

18% brine fluid loss, ml	**120℃, 6.9MPa**	**≤150**
Free fluid, %	**80℃, Atmospheric Pressure**	**≤1.4**
24h compressive strength, MPa		**≥14**

APPLICATIONS

Application temperature: 180℃ (BHCT) in fresh water system, or (180℃) in brine system.

Dosage:

Generally, 0.6-2.0% (BWOC), recommended amount 0.9% (BWOC, freshwater system W/C=0.44) and 2.5% in high concentrated
brine water.

PACKING

Packed with 25kg per bag or clients' requirements.
Stored in cool area.

Shelf life

18 months