

Selvol™ Premiol DWC 50 - Technical Data Sheet

PRODUCT INFORMATION

Selvol™ Premiol DWC50 is a fluid loss control additive that was designed specifically for high-temperature applications.

Selvol™ Premiol DWC50 is a nonretarding powder that provides fluid-loss control for cement slurries at temperatures ranging up to 300°F.

Typical Selvol™ Premiol DWC50 concentrations range from 0.5% to 1.5% by weight of cement (%bwoc). Concentration will depend on bottom hole temperature and desired slurry density. Selvol™ Premiol DWC50 can be used in slurries with a wide range of densities (15.6 ppg up to 17.1 ppg).

Physical Properties

- Brown Powder
- Specific Gravity – 1.11

Applications

- Deep well cementing
- Fluid loss control from 100°F to 300°F

Benefits

- Selvol™ Premiol DWC additive works well to 300°F (150°C)
- Powder form
- Meets industry standards for fluid loss control agents
 - API Fluid loss (1000 psi) of < 100 mL/30-min
 - PV < 200 cp, YP > 0 lb/100-sq.ft.
 - Free fluid < 2%
- Nonretarding
- Compatible with multiple additives
- Mixable at high densities
- Adjustable rheology
- Easy to design
- Environmentally friendly
- Dissolves easily under ambient conditions
- Easy to handle
- Could be used across a large temperature range
- Lower in cost than other high temperature additives

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SLURRY PERFORMANCE

Typical Performance for different slurries with Selvol™ Premioli DWC 50

| | | | | | | | | | |
|----------------------------------|------|------|------|------|-----------|------|------|-----------|------|
| Temperature (F) | 100° | 150° | 200° | 250° | 250° | 250° | 263° | 300° | 300° |
| Density (ppg) | 17.0 | 17.0 | 17.0 | 16.5 | 16.5 | 16.8 | 16.4 | 16.4 | 16.5 |
| Selvol™ Premioli DWC 50 (% bwoc) | 0.56 | 0.56 | 0.56 | 0.56 | 1.0 | 0.56 | 1.0 | 1.5 | 0.71 |
| API Fluid Loss (mL/30min) | 12 | 20 | 20 | 92 | 44 | 52 | 52 | 70 | 82 |
| Thickening Time (to reach 70 Bc) | - | - | - | - | 5h 12m | - | - | 4h 56m | - |
| Free Water (%) at 190° F | 1.2 | 2.4 | 0.8 | 0.8 | 2.4 | 2.4 | - | 0.0 | 0.0 |
| Compressive Strength 12hr (psi) | - | - | - | - | 1726 | - | 1905 | 1148 | - |
| Compressive Strength 24hr (psi) | - | - | - | - | 1823 | - | 2625 | 2113 | - |

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RECOMMENDED SLURRY DESIGN

Well Condition

7" Liner
 17,000 depth
 BHST = 337°F (169°C)
 BHCT = 300°F (149°C)
 BH Pressure = 12,350

Slurry

Texas Lehigh Class H Cement
 35% bwoc 100-mesh silica flour
 1.13% bwoc Selvol™ Premioli DWC 50
 0.03 gal/sk FP-6L

0.25 gal/sk Kelig-32
 4.94 gal/sk fresh water
 Density = 16.5 lb/gal
 Yield = 1.39 cu-ft/sk

Rheology

| Temperature | 300 rpm | 200 rpm | 100 rpm | 60 rpm | 30 rpm | 6 rpm | 3 rpm | PV | YP |
|-------------|---------|---------|---------|--------|--------|-------|-------|--------|---------------------------|
| 80°F | 510 | 364 | 204 | 134 | 76 | 20 | 14 | 459 cP | 264 lb/100ft ² |
| 190°F | 280 | 194 | 104 | 64 | 34 | 8 | 6 | 51 cP | 16 lb/100ft ² |

Free Water

| Temperature | Measured Fluid | Free Water (%) |
|-------------|----------------|----------------|
| 190°F | 0 mL | 0.0 |

Fluid Loss

| Temperature | Collected Fluid | Time | Fluid Loss |
|-------------|-----------------|--------|-------------|
| 300°F | 26 mL | 30 min | 52cc/30-min |

Compressive Strength

| Condition | Time |
|-----------|-----------------|
| 50 psi | 7:44 (hrs:min) |
| 500 psi | 9:03 (hrs:min) |
| 2380 psi | 12:00 (hrs:min) |
| 3548 psi | 24:00 (hrs:min) |

Thickening Time

| Condition | Time | Pressure | Temperature |
|-----------|--------|----------|-------------|
| Initial | 0 min | 760 psi | 80°F |
| Final | 37 min | 6000 psi | 120° F |

Time to 70 Bc 4:20 (hr:min)

Note: High Rheology does not reflect difficult mixing. Slurry is extremely easy to prepare, viscosity hump is not present.