P-CTSP

TECHNICAL DATA SHEET

DATE: JANUARY 1, 2026

PETROCHEM – COILED TUBING, SQUEEZE & PLUG CEMENTING SYSTEM

PRODUCT DESCRIPTION

P-CTSP is a pre-blended powdered cementing additive designed for coiled-tubing and conventional cementing applications. The system combines fluid-loss control, dispersion, and strength development to support slurry stability, pumpability, and effective cement placement across low to high temperature applications.

APPLICATIONS

- Coiled-tubing and conventional squeeze and plug cementing
- Primary and remedial cementing operations
- Plugging and abandonment (P&A)
- Freshwater and seawater cement slurry systems

TECHNICAL DATA

- Reduces filtrate invasion into permeable formations
- Improves slurry rheology and placement efficiency
- Supports compressive strength development under downhole conditions
- Compatible with all API cement classes and common cementing additives
- Suitable for silica flour, slag, and fly ash systems
- Can be pre-dispersed in mix water or dry blended with cement

TYPICAL PROPERTIES

- Appearance: Tan powder
- Specific Gravity: 2.07
- Temperature Range: < 400°F (204°C)

RECOMMENDED TREATMENT

- Typical Concentration: 2.5% BWOC (1 × 50 lb sack per 2,000 lb cement)
- Mix Water: ~4.33 gal/sk (38% BWOC)
- Slurry Density: ~16.4 ppg
- API Fluid Loss at 190°F: 48–56 mL/30 min
- Slurry Yield: ~1.07 ft^3/sk
- Final slurry design must be validated through API laboratory testing under representative well conditions.

FIELD MIXING PROCEDURE

- Charge the mixing tank with the specified volume of mix water and begin agitation.
- Add P-AFL liquid antifoam and the appropriate P-SR250L, P-SR300L, or P-SR400L liquid synthetic retarder as required, within their respective operating ranges.
- Slowly disperse 1 × 50 lb sack of P-CTSP, then gradually add 2,000 lb of cement under continuous agitation until homogeneous.

PACKAGING

- Packaged in 40 × 50 lb (22.7 kg) sacks per pallet

SAFETY

- Refer to the Safety Data Sheet (SDS) prior to handling or use.

SLURRY DESIGN 1			
100% CLASS H LAFARGE + FRESH WATER @ 4.34 GPS + P-CTSP @ 2.5% BWOC + P-SR250L @ 0.02 GPS @ 162°F BHCT, 199°F			
DENSITY	16.4 PPG	**YIELD**	1.07
MIX WATER	FRESH	**TOTAL FLUID**	4.34 GPS
BHST	199 °F	**BHCT**	162 °F
TVD	12,500’	**MD**	12,500’

RHEOLOGICAL RESULTS						
FLUID #	**80 °F**			**190 °F**		
RPM	**UP**	**DOWN**	**RATIO**	**UP**	**DOWN**	**RATIO**
300	130	130	1.00	105	105	1.00
200	91	91	1.00	79	74	1.07
100	49	49	1.00	44	41	1.07
60	31	31	1.00	29	26	1.11
30	16	15	1.07	17	14	1.21
6	4	3	1.33	4	3	1.33
3	3	2	1.50	3	2	1.50
3	**10 SEC GEL STRENGTH, DR**		N/A	**10 SEC GEL STRENGTH, DR**		3
3	**10 MIN GEL STRENGTH, DR**		N/A	**10 MIN GEL STRENGTH, DR**		11

FLUID LOSS RESULTS					
FL CELL TYPE	**TEST TEMP (°F)**	**TEST TEMP (MIN)**	**FINAL VOLUME (ML)**	**API FL (ML)**	**FILTER CAKE HEIGHT (IN)**
STIRRED FL	190	30.0	24.0	48.0	1.00

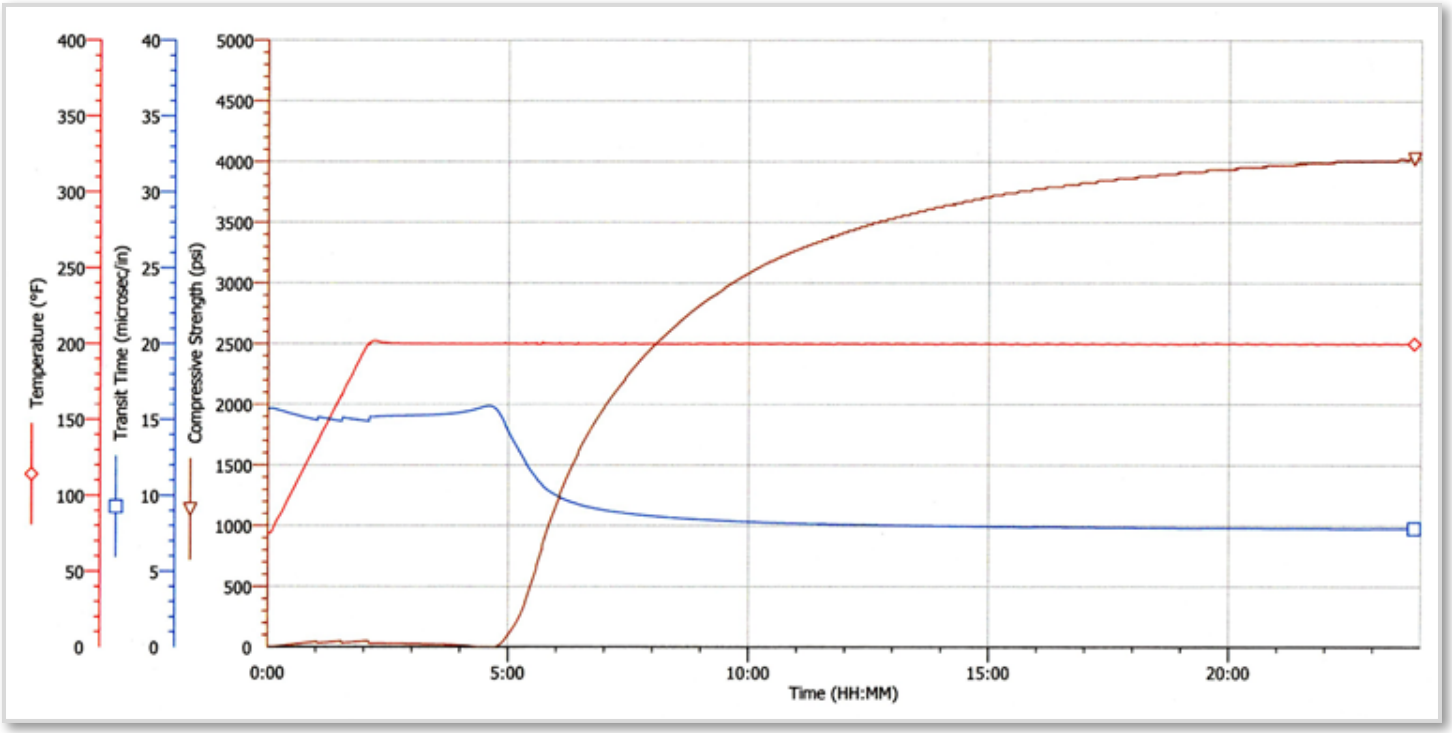
FREE FLUID RESULTS							
STATIC PERIOD	**STATIC PERIOD (HR)**	**CYLINDER RATIO (H:W)**	**CYLINDER ANGLE (INCLINATION)**	**TOTAL VOLUME (ML)**	**FREE FLUID VOLUME (ML)**	**% FF**	**SETTLING?**
AMBIENT	2	6:1	0°	250	TRACE	0.00	NO

THICKENING TIME RESULTS							
TEST TEMP (°F)	**TEST PRESSURE (PSI)**	**BATCH MIX (MIN)**	**INITIAL BC**	**30 BC @ HH:MM**	**50 BC @ HH:MM**	**70 BC @ HH:MM**	**100 BC @ HH:MM**
162	8125	N/A	10	04:05	04:11	04:14	04:15

UCA COMPRESSIVE STRENGTH RESULTS						
RAMP ID	**TEST TEMP (°F)**	**TEST PRESSURE (PSI)**	**50 PSI @ HH:MM**	**500 PSI @ HH:MM**	**PSI @ 12:00**	**PSI @ 24:00**
A	199	8000	04:55	05:28	3417	4026

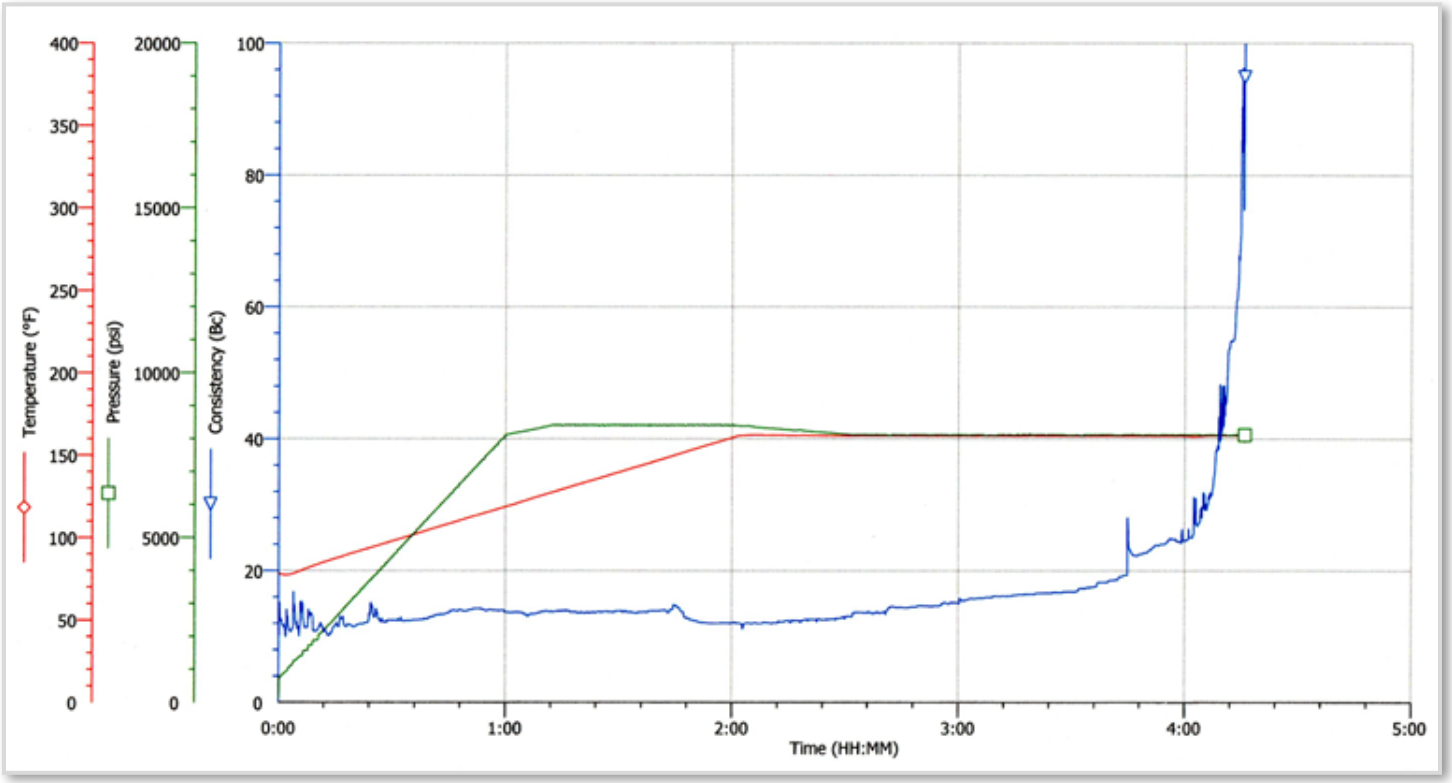
UCA COMPRESSIVE STRENGTH GRAPH - P-CTSP + P-SR250L (0.02 GPS)

100% CLASS H LAFARGE + FRESH WATER @ 4.34 GPS + P-CTSP @ 2.5% BWOC + P-SR250L @ 0.02 GPS @ 162^{O}F BHCT, 199^{O}F BHST



THICKENING TIME GRAPH - P-CTSP + P-SR250L (0.02 GPS)

100% CLASS H LAFARGE + FRESH WATER @ 4.34 GPS + P-CTSP @ 2.5% BWOC + P-SR250L @ 0.02 GPS @ 162^{O}F BHCT, 199^{O}F BHST



SLURRY DESIGN 2			
100% CLASS H LAFARGE + FRESH WATER @ 4.32 GPS + P-CTSP @ 2.5% BWOC + P-SR250L @ 0.04 GPS @ 162°F BHCT, 199°F			
DENSITY	16.4 PPG	**YIELD**	1.07
MIX WATER	FRESH	**TOTAL FLUID**	4.32 GPS
BHST	199 °F	**BHCT**	162 °F
TVD	12,500’	**MD**	12,500’

RHEOLOGICAL RESULTS						
FLUID #	**80 °F**			**190 °F**		
RPM	**UP**	**DOWN**	**RATIO**	**UP**	**DOWN**	**RATIO**
300	138	138	1.00	124	124	1.00
200	98	98	1.00	94	86	1.09
100	52	52	1.00	59	47	1.25
60	32	32	1.00	39	30	1.30
30	17	16	1.06	22	15	1.47
6	4	3	1.33	5	4	1.25
3	2	2	1.00	3	2	1.50
3	**10 SEC GEL STRENGTH, DR**		N/A	**10 SEC GEL STRENGTH, DR**		4
3	**10 MIN GEL STRENGTH, DR**		N/A	**10 MIN GEL STRENGTH, DR**		9

FLUID LOSS RESULTS					
FL CELL TYPE	**TEST TEMP (°F)**	**TEST TEMP (MIN)**	**FINAL VOLUME (ML)**	**API FL (ML)**	**FILTER CAKE HEIGHT (IN)**
STIRRED FL	190	30.0	28.0	56.0	1.25

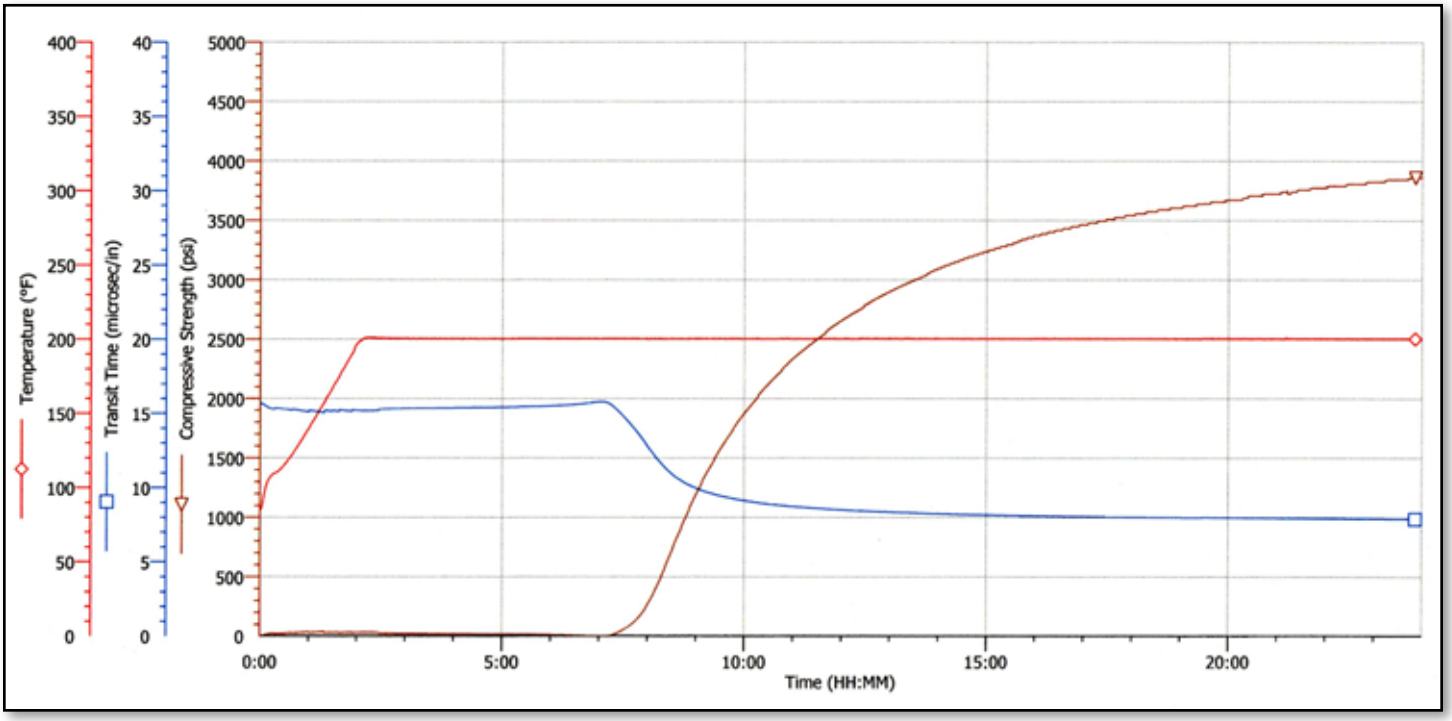
FREE FLUID RESULTS							
STATIC PERIOD	**STATIC PERIOD (HR)**	**CYLINDER RATIO (H:W)**	**CYLINDER ANGLE (INCLINATION)**	**TOTAL VOLUME (ML)**	**FREE FLUID VOLUME (ML)**	**% FF**	**SETTLING?**
AMBIENT	2	6:1	0°	250	TRACE	0.00	NO

THICKENING TIME RESULTS							
TEST TEMP (°F)	**TEST PRESSURE (PSI)**	**BATCH MIX (MIN)**	**INITIAL BC**	**30 BC @ HH:MM**	**50 BC @ HH:MM**	**70 BC @ HH:MM**	**100 BC @ HH:MM**
162	8125	N/A	7	03:58	04:02	04:04	04:06

UCA COMPRESSIVE STRENGTH RESULTS						
RAMP ID	**TEST TEMP (°F)**	**TEST PRESSURE**	**50 PSI @ HH:MM**	**500 PSI @ HH:MM**	**PSI @ 12:00**	**PSI @ 24:00**
A	199	8000	07:30	08:17	2656	3860

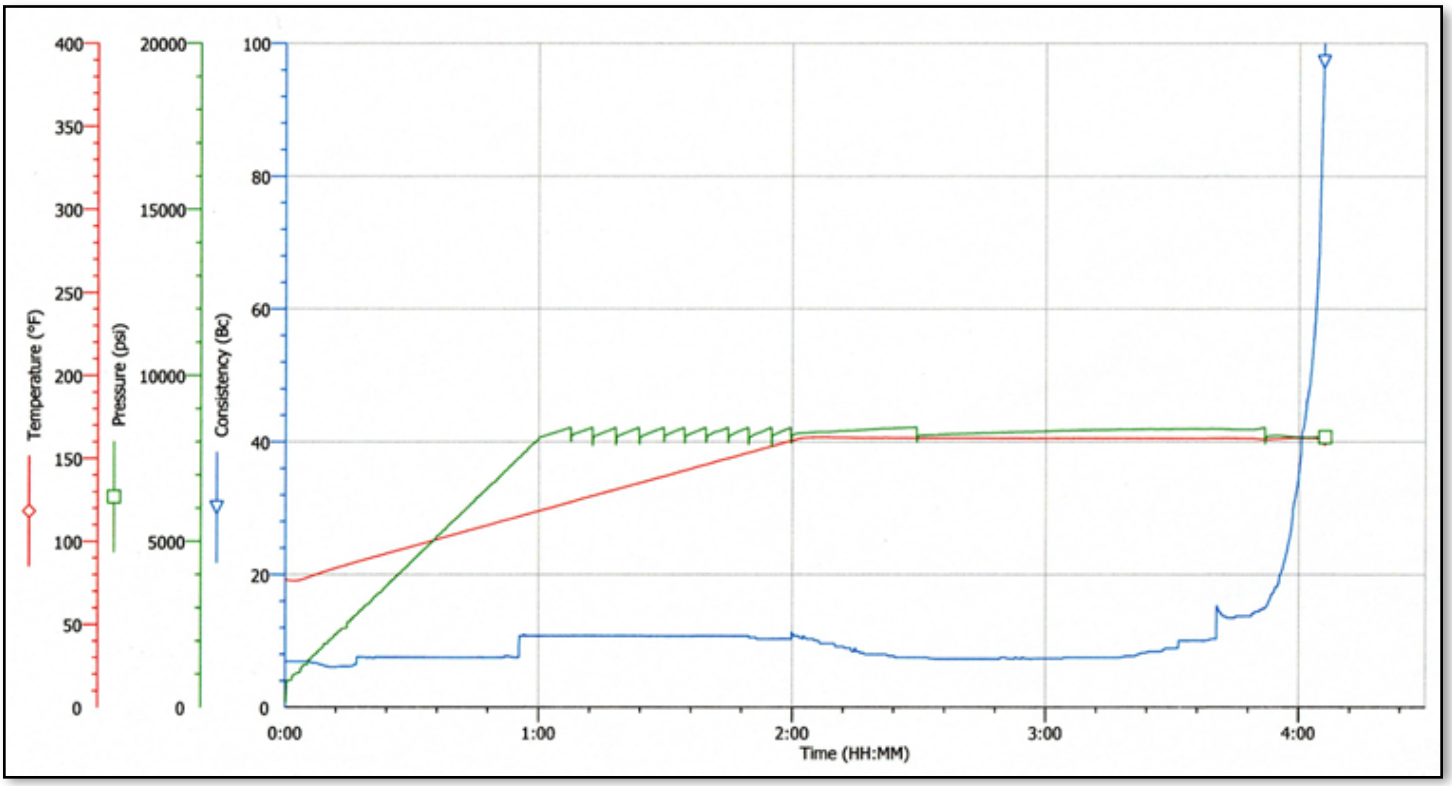
UCA COMPRESSIVE STRENGTH GRAPH - P-CTSP + P-SR250L (0.04 GPS)

100% CLASS H LAFARGE + FRESH WATER @ 4.32 GPS + P-CTSP @ 2.5% BWOC + P-SR250L @ 0.04 GPS @ 162^{O}F BHCT, 199^{O}F BHST



THICKENING TIME GRAPH - P-CTSP + P-SR250L (0.04 GPS)

100% CLASS H LAFARGE + FRESH WATER @ 4.32 GPS + P-CTSP @ 2.5% BWOC + P-SR250L @ 0.04 GPS @ 162^{O}F BHCT, 199^{O}F BHST



NOTICE: The information provided herein is offered in good faith; however, no warranties, express or implied, are made. Users are responsible for determining product suitability and performance under actual operating conditions.