



Cola® Foam CS-50

Sultaine Amphoteric

LISTINGS

US (TSCA); Canada (DSL); EU (REACH); Australia (AICS); China (IECSC/IECIC); Philippines (PICCS); New Zealand (NZIoC); Taiwan (TCSI)

Cola®Foam CS-50 is a great foam stabilizer and viscosity builder in foaming agents for high brine levels. This surfactant is ideal for varying conditions and generates copious foam in both air and nitrogen systems. In addition Cola®Foam CS-50 can be used for grease and oil emulsification for oil/water emulsions. Cola®Foam CS-50 is stable in varying acidic conditions and works as an excellent wetting agent. Cola®Foam CS-50 has the ability to be formulated with a variety of surfactants including anionics, nonionics and cationics.

BENEFITS

- High foaming amphoteric surfactant
- High electrolyte tolerance
- Excellent foaming over a broad pH range
- Compatible with anionic, nonionic, and cationic surfactants

APPLICATIONS

- Oil field foamers, such as those applied in Enhanced Oil Recovery and Hydraulic Fracking
- Gas wells
- Drilling applications
- Mineral beneficiation
- Mining frothers

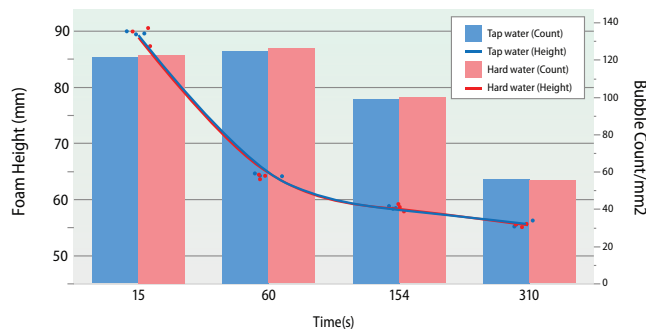
TYPICAL PROPERTIES

Appearance @ 25°C	Clear Liquid
% Solids	48.0 – 50.0
pH (10% aqueous)	7.0 – 8.5
NaCl, %	7.0 Max.
Viscosity @ 25°C	50
Pour Point °C	-14
Flash Point °C	>94



FOAM RESPONSE

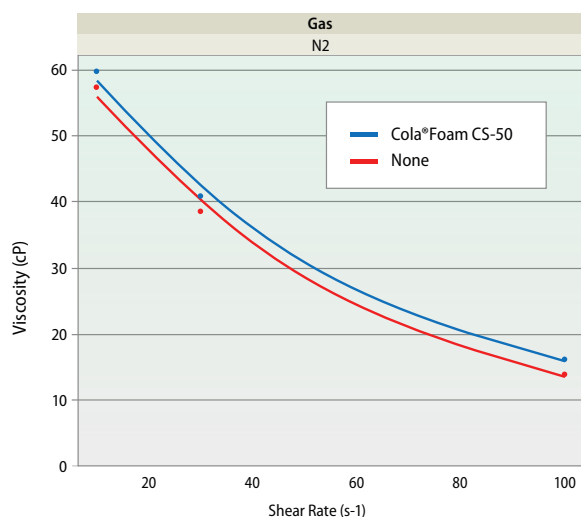
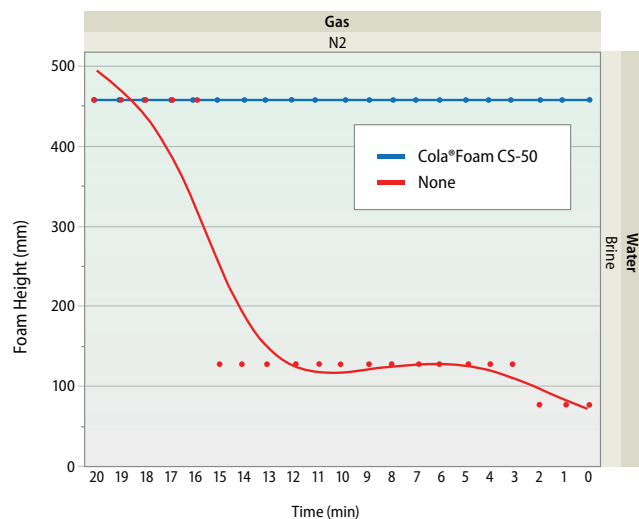
Foam Response with Cola®Foam CS-50 in Varying Water Chemistries



	Test Method	Tap Water (mg/L)	Hard Water (mg/L)
TSS	Gravimetric	< 10.0	86.8
TDS	Gravimetric	101.5	7949.9
Chloride (Cl-)	IC	12	< 25.0
Calcium	ICP-OES	21.7	1610
Sulfate	IC	9	1130
Magnesium	ICP-OES	< 9.3	285
Sodium	ICP-OES	<9.3	< 9.6
Carbonate (CO3)	Coulometric	< 550.0	< 600.0
pH	pH Meter	7.1	7.6

FOAM STABILITY

In formula use, Cola®Foam CS-50 is able to achieve foam stability for the entire duration of the test under these conditions, while also yielding a slightly more viscous foam.



INTERFACIAL TENSION

Interfacial tension between light Texas crude oil and aqueous surfactant solutions were evaluated under different water chemistries.

An 67.7% reduction in this interfacial tension was observed in the more EOR realistic water source, brine, for Cola®Foam CS-50.

Surfactant	Water	Interfacial Tension (dynes/cm)	Reduction (%)
None	Brine	16.79	0.0
Cola®Foam CS-50	Brine	5.43	67.7
None	Sea	17.15	0.0
Cola®Foam CS-50	Sea	12.70	25.9
None	East Tennessee Tap	18.07	0.0
Cola®Foam CS-50	East Tennessee Tap	1.39	92.3

STORAGE / HANDLING

Cola®Foam CS-50 should be stored in closed containers. Frozen material may be thawed in a warm room, venting drums while warming. Shipped in 55 gallon poly drums (net weight 500 lb/226.7 kg). Typical shelf life is 24 months from date of manufacture. Safety Data Sheets may be found at www.colonialchem.com.



Colonial Chemical
Innovative Specialty Surfactants
www.colonialchem.com