



Cola®Shale 1 and 2

Shale Stabilizers for Water-Based Fluids

LISTINGS Cola®Shale 1: USA (TSCA); Canada (DSL)
 Cola®Shale 2: USA (TSCA); Canada (NDSL)

Cola®Shale water-soluble shale stabilizers are additives that reduce adverse interactions between water-base completion fluids and exposed reactive shales. Cola®Shale shale stabilizers are highly engineered, strongly cationic complexes that function to control shale and clay hydration. They are capable of inhibiting interactions between most types of brine water-base completion fluids or gels and a wide array of shales and claystones. They do not damage the formation or reduce gravel-pack permeability and won't affect brine characteristics such as viscosity. Cola®Shale shale stabilizers will not affect fluid pH and don't adversely affect formation wettability or generate excess foam.

Cola®Shale shale stabilizers are effective in freshwater or monovalent brines, have low environmental toxicity and are non-hazardous to rig personnel.



APPLICATIONS

- Long, openhole completion intervals with reactive shales
- Vertical, inclined and horizontal well bores
- Onshore, shelf and deepwater settings

BENEFITS

- Reduces completion process risks associated with exposed shales along the path of openhole intervals
- Minimizes the shale-destabilizing effects of water-base fluids used during completions operations
- Environmentally safe
- Minimal effect on drilling fluid viscosity and fluid loss control
- Non-hazardous to rig personnel
- Controls shale and matrix clay swelling
- Reduces enlargement of wellbore in shale layers
- Is effective for a wide array of shales and claystones
- Functions in almost all types of brine and water-base completion fluids and gels
- Does not damage producing formations
- Does not interfere with the function of gels and viscosifiers
- Low freeze point

SPECIFICATIONS

	Cola®Shale 1	Cola®Shale 2
Appearance	Clear Liquid	Clear Liquid
pH, 10% aqueous	5.0 – 7.0	5.0 – 7.0
Solids, %	69.0 – 72.0	65.0 – 75.0
Color, Gardner, BYK	4 Max.	4 Max.

ROLLER OVEN SHALE STABILITY TEST

Cola®Shale 1 and 2 were compared to choline chloride at three concentrations of 0.5, 1 and 2 gallons per thousand gallons (gpt) in fresh water. Two control fluids were also run to establish the sensitivity of the shale (fresh water and diesel oil). Higher values for percent passing the 70 mesh sieve indicate greater tendency for the shale to erode (fragment) in that fluid. Data shows the control fluids to give high (fresh water) and low sensitivity (diesel oil) with the clay stabilizer solutions all in the moderate sensitivity category.

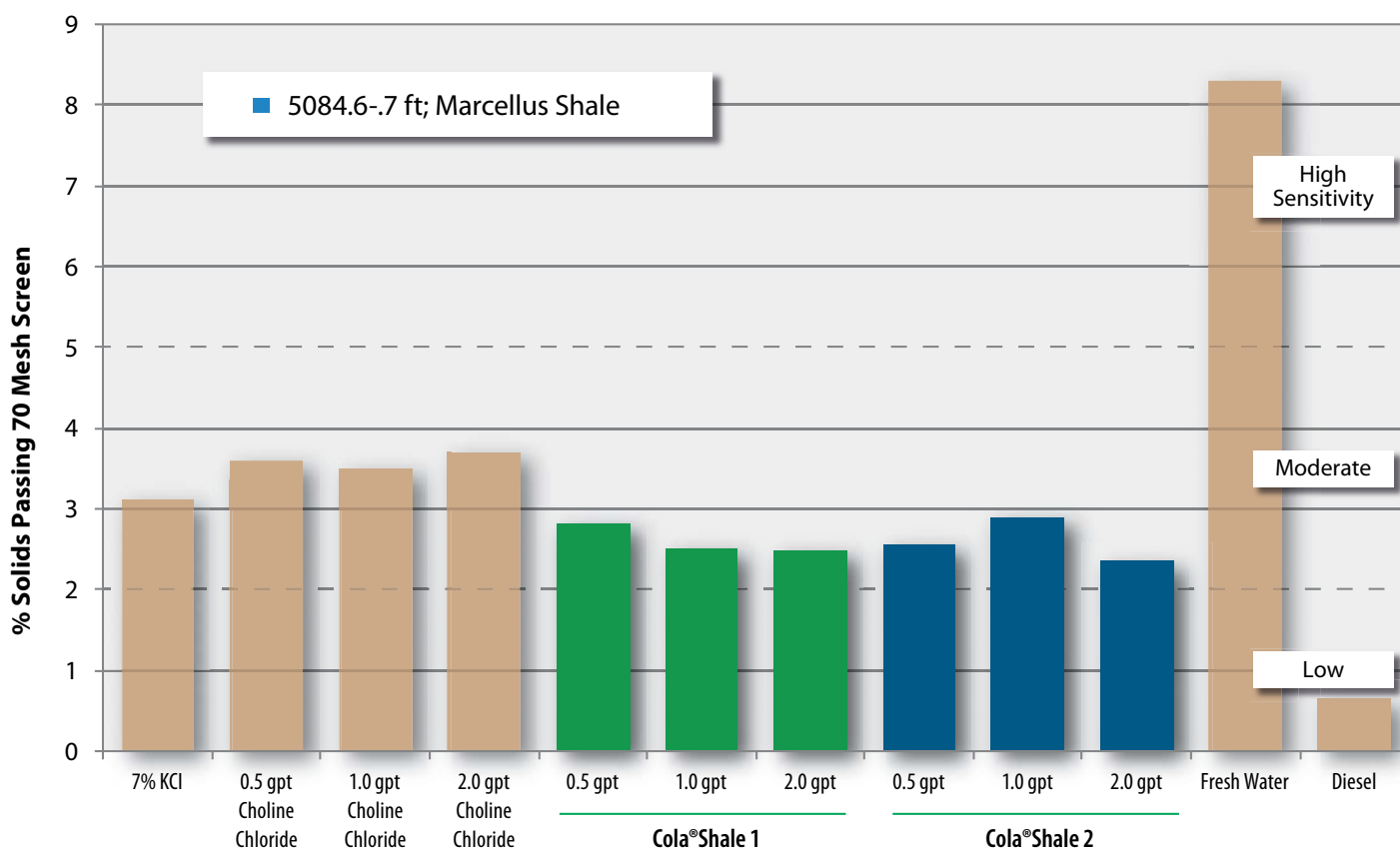
A cleaned and dried rock sample is crushed and sieved to obtain a particle fraction between 10 - 40 mesh size. These particles are carefully weighed and placed into a container with the fluid to be evaluated. The container is sealed

and placed in a roller oven at formation temperature for 16 hours. The contents of the container are then cooled and wet sieved through a 70 mesh sieve. The weight of material passing the 70 mesh sieve is determined and reported as a percentage of the original weight.

Fluids that are incompatible with the shale sample will give a high percentage passing the 70 mesh sieve. Because of some fragmentation with agitation, a certain percentage of material will pass the 70 mesh sieve even with diesel. Therefore, the data must be interpreted as a relative comparison between the two control fluids and not a comparison of the magnitude of the numbers with other samples that may be more or less friable.

Cola®Shale 1 and 2 offered better results when compared to choline chloride and 7% KCl solutions.

Cola®Shale products comparison to 70% choline chloride solution and 7% KCl brine



STORAGE / HANDLING

Cola®Shale products should be stored in closed containers. Shelf life: Cola®Shale 1 = 12 months, Cola®Shale 2 = 24 months from date of manufacture. Safety Data Sheet is available at www.colonialchem.com.

Cola®Shale products are shipped in poly 55-gal drums, net weight 450 lbs (204.1 kg) and in bulk.



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