



P-CS

STIMULATION SERVICE BULLETIN

10/95

P-CS (PETROCHEM - CLAY STABILIZER)

TECHNICAL DATA

P-CS is an easy to use Cationic liquid additive designed to prevent clay swelling and migration, and is compatible with Borate, Antimony, and Titanate cross linkers.

P-CS is a quaternary amine designed for use as a clay stabilizer in cross-linked systems and can also be used in acids, brines and water based fracturing fluids.

P-CS provides better and longer lasting protection from clay swelling and migration than KCl alone, with the additional benefit of being an easily handled liquid. Unlike KCL, subsequent brine or acid treatments will not remove P-CS from the formation.

<u>PRODUCT</u>	<u>DESCRIPTION</u>	<u>FORM</u>	<u>SP.GR</u>
P-CS	Clay Stabilizer	Amber	1.15

P-CS is compatible with vinyl, polyethylene, PVC, Hypalon, Teflon, polypropylene, Plexiglas, ethylene propylene, polyurethane, Viton, 304 SS, 316 SS, Plasite 106000, and Plasite 10-7122. However, P-CS **should not** be used with mild steel, aluminum, or brass.

In water based fracturing fluids, 3-5 gallons of P-CS are generally used per 1000 gallons of fluid. When used in conjunction with 2% KCL, 1-5 gallons of P-CS can be used per 1000 gallons of fluid.

P-CS can be either batch mixed in advance or added on the fly. P-CS can be used in the body of the fracturing treatment as well as in the pad and prepad.

P-CS is a highly cationic material. Care should be taken to ensure compatibility with other additives in tile system.



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<u>Clay Stabilizer</u>	<u>Concentration gals/1000</u>	<u>% Permeability Retention</u>
P-CS	3	83
P-C S	4	104

The data given is to be used only as a guide. Subsequently, each job is to be designed and tested in the laboratory with the actual fluids and additives intended for the job.

Avoid contact with skin, eyes, and clothing. Wear goggles or a face shield and rubber gloves when handling. Avoid prolonged or repeated breathing of vapors. Use with adequate ventilation. Keep container closed when not in use. Do not take P-CS internally. In case of contact with skin or eyes, immediately flush with large amounts of water for at least fifteen minutes. Remove contaminated clothing and wash before reuse.