

POTASSIUM CHLORIDE

CLAY & SHALE STABILISERS



Description

POTASSIUM CHLORIDE (KCl) is a soluble salt that is an extremely efficient shale stabiliser when drilling hydro sensitive clays and shales. Inhibition is provided through ion exchange; the potassium ion enters between the individual clay platelets in the shale so that they are held together, thus eliminating entry of water from the drilling fluid.

Application

POTASSIUM CHLORIDE (KCl) can be added directly to a drilling fluid system to enhance its inhibitive quality, which helps to stabilise water sensitive clay and shales. It can also be used as a weighting agent ranging in densities from 1.005 sg (8.4 lb / gal) to 1.16 2sg (9.7 lb / gal). POTASSIUM CHLORIDE (KCl) solution becomes saturated near 1.162 sg (9.7 lb / gal); the closer to saturation the less soluble the salt becomes.

Typical Physical Properties

Appearance: White crystals or powder
pH (saturated solution): 7.0 – 8.5
Solubility: 28.1 g / 100 g of water @ 0°C
 34.2 g / 100 g of water @ 20°C
 37.2 g / 100 g of water @ 40°C

Recommended Treatment

Normal use: 3.0% (30 kg) – 8.0 % (80 kg) by volume (per m³).

Polymers such as AMC EZEE TROL™, AMC TROL™, AMC EZEE PAC™, AMC PAC™, AMC CR 650® and AMC LIQUI POL™ can all be used in conjunction with POTASSIUM CHLORIDE (KCl). It is recommended the water be pre-treated and polymers mixed before adding POTASSIUM CHLORIDE (KCl).

Advantages

- Inexpensive and readily available
- Compatible with most drilling fluid additives
- Stabilizes water sensitive clays and shales
- Prevents issues resulting for shale instability
- Fast dissolving.

% KCL	DENSITY SG (KG / M ³)	K ⁺ (MG / L)	CL ⁻ (MG / L)
1	1.005	5,244	4,756
2	1.011	10,594	9,606
3	1.017	15,996	14,504
4	1.024	21,502	19,498
5	1.030	27,009	24,491
6	1.037	32,621	29,579
7	1.043	38,285	34,715
8	1.050	44,053	39,947
9	1.057	49,875	45,225

NOTE: Environmental sensitivities may exclude the use of POTASSIUM CHLORIDE (KCl) in certain areas, please contact your local AMC representative to discuss alternatives.

Please Note: Several factors will dictate the most appropriate concentration rate. Please contact your nearest AMC representative for optimum results.

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