Potassium Chloride

Description	POTASSIUM CHLORIDE is chemically represented by the formula KCl and is also known by the name muriate of potash. It's commonly used as a source of potassium ions for reactive clays inhibition.

Applications/functions

- Provides potassium ions to inhibit shale swelling and dispersion
- Decreases bit balling and hole narrowing tendencies
- Decreases dilution rates of drilling fluids
- Can be used as a weighting agent for up to 1.16 g/cm3 completion and workover brines when the shale inhibition is required
- Reduces the freezing point of water-base fluids

Advantages

- Widely available the most economical source of potassium ions.

Typical properties

- Appearance — White to reddish crystals
- Specific gravity — 2.00 g/cm3
- Solubility at 20°C — 279 kg/m3 (24 % by weight)
- Hygroscopic — yes

Recommended treatment

For reactive sodium clays, the initial content from 3 - 5% can be increased to 12 - 15%, which, however, is unacceptable for some unstable types of clays (chlorite, ilite, kaolinite) where 3% is considered the most safe. See page 2 to determine the required concentrations.

Free potassium is consumed as it is drilled and requires control and maintenance treatments.

Package

KCl is packaged in 800 or 1000 kg big bags.

Potassium Chloride

KCl Salt Table

% KCl	Density, kg/m^3	KCl Content, kg/m^3	KCl, mg/l	K$^+$, mg/L	Cl$^-$, mg/L	Final Volume	Freezing Point, °C
1	1006	11.4	10050	5271	4779	1.004	0
2	1013	20.0	20220	10605	9615	1.008	-1
4	1026	39.9	40960	21482	19478	1.016	-2
6	1039	62.8	62210	32627	29583	1.024	-3
8	1052	82.8	84000	44056	39945	1.033	-4
10	1065	105.6	106300	55752	50548	1.043	-5
12	1079	128.4	129200	67762	61439	1.053	-6
14	1093	154.1	152700	80087	72613	1.064	-7
16	1106	176.9	176700	92674	84026	1.076	-8
18	1120	202.6	201300	105576	95724	1.088	-9
20	1135	225.4	226600	118845	107755	1.102	-10
22	1149	251.1	252400	132376	120024	1.115	1
24	1160	279.6	279000	146327	132673	1.028	13