

# Potassium Formate

## Description

Potassium formate (KCHOO) is a high purity of the alkali metal salt of formic acid. This salt is readily soluble in water, yielding high-density brine with low crystallization temperature that are used as clear brines for drilling, workover and completion operations which require densities ranging from 8.4 to 13.1 ppg (1,007 to 1,570 kg/m<sup>3</sup>). The maximum solubility of potassium formate is 75% at ambient temperature.

## Applications

Potassium formate is used to form solid-free fluids with densities ranging from 8.4 to 13.1 ppg (1,007 to 1,570 kg/m<sup>3</sup>). It has low rheological values when ran as a clean, solid-free system which promotes turbulent flow to optimize horizontal wellbore cleaning.

## Features and Benefits

- Reduces water activity and shale hydration due to K<sup>+</sup> ion presence.
- Increases polymer temperature stability.
- Reduced corrosion rate compared to other brines.
- Naturally alkaline pH and can be buffered with carbonate/bicarbonate to handle acid gas.
- It has been proven as an excellent lubricant at high concentration.
- Formate anion is an anti-oxidant which reduces the occurrence of oxidation and the need for oxygen scavengers.
- Potassium formate based fluid ensures minimal formation damage.
- Non-toxic and biodegradable.

## Typical Properties

Appearance	White Crystal
Molecular Weight	84.12 g/mol
Specific Gravity	1.91
Purity	97%
Solubility	331g/100mL@70°F

## Recommended Treatment

Add Potassium formate crystals gently through the rig hopper. Use the mixing table for determining the required product concentration.

Potassium formate is deliquescent and must be stored in dry conditions, with packaging completely sealed.

Barite additions to potassium formate fluid are not recommended due to the potential to create barium ions which pose an environmental risk.

## Safety and Handling

Prior to using this product, refer to the safety data sheet for information on use of personal protective equipment, safe handling, storage, transport, and disposal.

## Packaging

Potassium formate is packaged in 55 lb (25 kg) bags and 1 MT sacks.

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