

Description

KAR-ZINOX is a pure Zinc Oxide used as hydrogen sulphide (H₂S) scavenger in all types of water-base fluids and particularly in oil-base drilling fluids.

Typical Properties

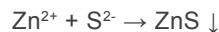
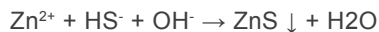
Appearance : White powder
Specific Gravity : 5.6
Zinc Content : > 80%

Features and Benefits

KAR-ZINOX is a high surface area, fine zinc oxide compound utilized as a hydrogen sulphide scavenger in all types of drilling fluids, but especially recommended for use in oil-base fluids.

KAR-ZINOX consists of higher zinc more than 80% by weight compared to other sources of zinc, such as zinc carbonate, zinc sulfate or zinc chromate.

KAR-ZINOX reacts with hydrogen sulphide to form insoluble zinc sulfide in both water and oil as follows.



This reaction is irreversible in environments with a pH of 3 or greater. This ensures a permanent removal of H₂S under normal wellbore conditions.

KAR-ZINOX is thermally stable up to temperatures of 204 °C (400 °F).

KAR-ZINOX functions well in a wide range of salinity.

Application

KAR-ZINOX is used as a H₂S scavenger in all types of water-base drilling, workover and completion fluids regardless of system pH. KAR-ZINOX is particularly recommended for use in oil-base drilling fluids.

Limitations

KAR-ZINOX may upset rheological properties of drilling fluids due to flocculation at pH levels above 11.5 where zinc becomes more soluble. This is a particular concern in non-dispersed fluids which can not effectively tolerate a pH of 10.5 or greater. Therefore, non-dispersed fluids should be dispersed prior to drilling known hydrogen sulfide zones. Pilot tests should be made to avoid problems in all cases.

Because of its high surface area KAR-ZINOX may increase the viscosity of drilling fluids when used in high concentrations. If the fluids containing KAR-ZINOX is centrifuged, large amount of KAR-ZINOX is discarded. Supplementary treatment is needed to compensate this loss.

Zinc may be toxic in certain environmental bioassay tests. This should be evaluated prior to using zinc containing scavengers.

Treatment

The level of treatment is dependent on the size of hydrogen sulphide intrusion in to the system. When using KAR-ZINOX to treat H₂S contamination:

$$\text{KAR-ZINOX (lb/bbl)} = 0.00091 \times F_w \times [\text{S}^{2-}] \text{ (mg/l)}$$

Recommended pretreatment levels are from 1 to 2 lb/bbl. Subsequent treatment should start at 1 lb/bbl per 1,100 mg/l sulfides. KAR-ZINOX should be added through mud hopper.

Packaging

KAR-ZINOX is supplied in 25 kg (55 lb) multi-wall paper sacks.