

Zinc Oxide

Zinc oxide sulphide scavenger contains a high-quality zinc oxide.

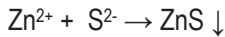
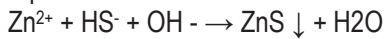
The very fine particle-size of Zinc oxide scavenger results in a maximum amount of surface area for fast, efficient sulphide scavenging. It reacts with sulphides (see APPLICATIONS below) to form ZnS. This precipitate is an insoluble, inert, fine solid that remains harmlessly in the mud system or is removed by the solids-control equipment.

Typical Physical Properties

Physical appearance	White to off-white powder
Specific Gravity.....	5.4 – 5.6
Bulk density.....	2627 kg/m ³

Applications

Under operating conditions, Zinc oxide scavenger reacts with sulfides to form ZnS, as shown in these equations:



Zinc oxide scavenger is effective at the pH levels found in drilling fluids. It is recommended that a pH above 11 be maintained whenever H₂S is expected. This high alkalinity converts the dangerous H₂S gas to less toxic bisulfide (HS⁻) and sulphide (S²⁻) ions. The alkaline pH (>11) allows an extra margin of safety.

The initial treatment of Zinc oxide scavenger is usually 1 to 2 lb/bbl (3 to 6 kg/m³). Subsequent field treatments should be based on approximately 1 lb/bbl (3 kg/m³) of Zinc oxide scavenger per 600 mg/L of sulphides detected. On a stoichiometric basis, 1 lb/bbl (3 kg/m³) of Zinc Oxide scavenger removes 1100 mg/L of sulphides. Removal is less effective under actual field conditions. Use a Garrett Gas Train and proper Dräger tubes to measure the sulphide content. Zinc oxide scavenger should be added through the hopper.

Advantages

- Has a higher percentage of zinc (>80% by weight) compared to competitive sources of zinc, such as basic zinc carbonate, zinc sulphate or zinc chromate
- Is not pH-dependent; it is effective at very alkaline pH, such as 11.5 to 12.5, whereas iron materials are less effective
- Helps remove the hazard of dangerous H₂S gas escaping at the surface
- Lessens the possibility of hydrogen embrittlement occurring on downhole tubulars

This document is supplied solely for informational purposes and M-I LLC makes no guarantees or warranties, either expressed or implied, with respect to the accuracy and use of this data. All product warranties and guarantees shall be governed by the Standard Terms of Sale. Nothing in this document is legal advice or is a substitute for competent legal advice.

Eastern Hemisphere	Western Hemisphere
Gamle Forusvei 43	P.O. Box 42842
N-4033 Stavanger,	Houston, Texas 77242-2842
Norway	Phone: 281-561-1300
Phone: +47-51-57-73-00	Fax: 281-561-1441
Fax: +47-51-57-74-51	www.miswaco.slb.com



A Teniz Service M-I SWACO Enterprise



Limitations

- Flocculation can occur in lightly-treated water-base mud systems
- While ZnS is inert to most drilling and completion environments, concentrated HCL can cause the release of H₂S

Toxicity and Handling

Information on biological data can be provided upon request.

Handle in accordance with the Material Safety Data Sheet (MSDS) and general requirements for working with industrial reagents

Zinc and other heavy metals present may impact waste disposal. Check with local environmental staff before use.

Packaging and Storage

Zinc oxide scavenger is packaged in 25 kg multi-wall, paper sacks; packing container sizes vary based on local area of purchase.

Store at moderate temperatures in a dry, well-ventilated area

This document is supplied solely for informational purposes and M-I LLC makes no guarantees or warranties, either expressed or implied, with respect to the accuracy and use of this data. All product warranties and guarantees shall be governed by the Standard Terms of Sale. Nothing in this document is legal advice or is a substitute for competent legal advice.

Eastern Hemisphere
Gamle Forusvei 43
N-4033 Stavanger,
Norway
Phone: +47-51-57-73-00
Fax: +47-51-57-74-51

Western Hemisphere
P.O. Box 42842
Houston, Texas 77242-2842
Phone: 281-561-1300
Fax: 281-561-1441
www.miswaco.slb.com



A Teniz Service M-I SWACO Enterprise

Schlumberger