

# SAFE & ECONOMICAL H<sub>2</sub>S SCAVENGER FOR OILFIELD APPLICATIONS



## INVENTION

This invention is about H<sub>2</sub>S Scavenger suitable for use with oil-based drilling fluid for oil and gas applications. It also covers a method for using the said drilling fluid for H<sub>2</sub>S scavenging during well drilling, scale removal and well stimulation. The scavenger is incorporated in a formulation of invert emulsion of diesel comprising several ingredients. The concentration of the scavenger is 1 gram per 100 mL of the invert emulsion.

## MARKET SIZE AND GROWTH

The value of Hydrogen Sulfide Scavengers Market size was USD 2.1 Billion in 2020. It is projected to reach USD 3.3 Billion by 2028. About 1,214.21 billion barrels of proven crude oil reserves are currently available globally. The crude oil is continuously explored to serve increasing energy need. This is a driver for the demand for production chemicals such like drilling mud with hydrogen sulfide scavengers.

## APPLICATIONS

The technology is useful for conversion of H<sub>2</sub>S gas released during upstream oil and gas operations such as drilling, completion, and well stimulation.

## ADVANTAGES

- Safe and environmentally friendly.
- Raw material is cheap and readily available.
- The composition is effective in scavenging H<sub>2</sub>S.

## PROJECT STATUS

- Materials synthesis and testing was carried out in lab.
- The performance of the H<sub>2</sub>S scavenger was assessed by measuring the concentration of H<sub>2</sub>S in exit gas stream after applying scavenging. Zero concentration was maintained for about 30 hrs.

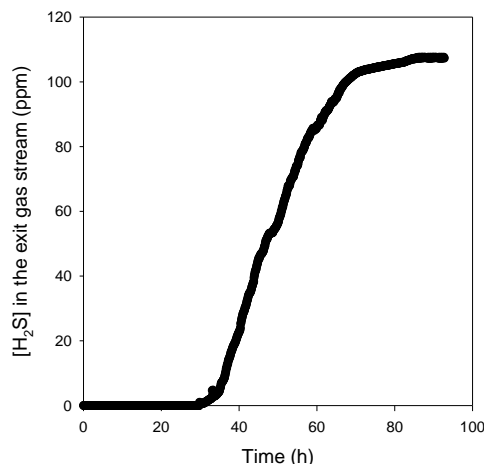


Fig. The H<sub>2</sub>S breakthrough curve.

## LOOKING FOR DEVELOPMENT PARTNER

We are looking for industry feedback on testing the current technology with any benchmark. We are also looking for a company who can partner with us to develop the technology readiness level and scaling up the process. Our ultimate objective is to license the intellectual property (IP) to a company for commercialization.

## PATENT PROTECTION

US17751764 patent application covers a method of drilling a subterranean geological formation and injecting a drilling fluid that contains H<sub>2</sub>S scavenger into the formation. The IP is owned by King Fahd University of Petroleum & Minerals (KFUPM).

## ABOUT KFUPM

KFUPM is located in Dhahran city of Saudi Arabia. KFUPM currently ranks at 160 in QS World University Rankings 2023. KFUPM's Innovation & Technology Transfer office strives for taking innovation from lab to market place.

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