

FULLSWEET HSS1003 mixed production hydrogen sulfide scavenger

Eliminate H₂S downhole and topside without solids, emulsion, or scale

Applications

- Sour mixed production environments
- Gas treatment in tower or direct injection
- Sour oil treatment
- Mercaptan removal

Features and Benefits

- Not triazine based
- Does not produce insoluble polymer deposits
- Lowers OPEX by minimizing secondary effects
- Produces no solid deposits or scale
- Removes downstream impacts and crude penalties
- Creates no emulsification
- Reduces corrosion
- Low pour point
 - Excellent choice in cold weather conditions
- Excellent performance in gas applications too
- Maintains scavenging efficiency at various system temperatures

Baker Hughes has produced a first-of-its-kind mixed production hydrogen sulfide (H₂S) scavenger, capable of eliminating H₂S from mixed production environments without scale, corrosion, solid reaction product, or emulsion. It is less harmful, more economical, and more efficient than current offerings. H₂S is dangerous, toxic, and corrosive, and occurs naturally in crude oil. To comply with environmental and safety regulatory policies, it must be removed prior to transporting from production sites to storage tanks. The need for an effective H₂S scavenger in mixed production is essential because H₂S-related issues are increasing globally.

Efficient and Economical FULLSWEET™ HSS1003 mixed production H₂S scavenger is effective in mixed production systems that are difficult to treat, systems with low or high system temperatures, and systems with a high percentage of water. It reliably removes H₂S downhole and topside by surface treatment at the wellhead. There is no need for the extra step of fluid separation for this single-phase treatment, thereby eliminating the need for a tower, reducing CAPEX.

FULLSWEET HSS1003 H₂S scavenger minimizes the following secondary effects:

- Solid deposits
- Emulsification
- Scaling
- Corrosion

FULLSWEET HSS1003 H₂S scavenger creates no solid reaction products,

eliminating the need for a co-injection of demulsifier, removing the effect of solid reaction product with H₂S. Effective in high TDS-brine systems, FULLSWEET HSS1003 H₂S scavenger does not have a high pH like triazines; therefore, FULLSWEET HSS1003 does not produce scale and is partitioning in water and oil, but it will not rehydrate dry oil and gas systems because it does not contain water. FULLSWEET HSS1003 H₂S scavenger virtually eliminates sour corrosion, which ultimately results in the use of less-expensive, corrosion-resistant alloys. FULLSWEET HSS1003 H₂S scavenger does not produce reaction products, which results in increased corrosion in refinery processes.

There is a limited time for a scavenger to react with H₂S, so faster reaction kinetics is key toward efficiency. The FULLSWEET HSS1003 product has higher H₂S removal capacity, thereby requiring a smaller amount of scavenger to deliver in-spec oil and gas. FULLSWEET HSS1003 scavenger's performance is not significantly impacted in systems ranging from high produced water to 100% oil. FULLSWEET HSS1003 is gas lift as well as capillary-approved to 350°F (177°C). Typical product consumption is 8 to 10 HSS1003 kg/kg of H₂S to be removed, depending on system conditions.

FULLSWEET HSS1003 is viable solution for dry gas treatment thanks to its solvent package and it removes more effectively low molecular weight mercaptans from oil and gas than conventional scavengers.

Materials compatibility

Suitable

Metals: Admiralty brass, aluminum, copper, ductile steel, mild steel, 304 stainless steel, 316 stainless steel

Plastics: HD polyethylene, linear, polyethylene, Teflon, HD polypropylene

Elastomers: EPDM, TEFLON®, neoprene

Not suitable

Metals: N/A

Plastics: PVC

Elastomers: Buna N, CSM, VITON®

Compatibility testing is recommended prior to application. Materials suitability is based on analysis of test results obtained under specified laboratory conditions (60°C/140°F). All materials selection should be based on actual application. Testing results for materials will be made available on request.

Safety and handling

Before handling, storage, or use, review the Safety Data Sheet (SDS) for guidance.

Typical properties

Relative Density, 60°F (16°C)	1.128
Density	9.097 (lbs/gal)
Flash point, SFCC	131°F (55°C)
Pour point	-49°F (-45°C)
pH	8.5
Viscosity, Dynamic 60°F (16°C)	23 cP

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