



PT3165

ChemTreat PT3165 for Crude Oil H₂S Removal

PT3165 is a patented, proprietary H₂S mitigation product that is miscible and non-corrosive. It is effective in removing H₂S from crude oil under standard conditions, and laboratory tests have shown no reemergence of H₂S 48 hours after treatment.

ChemTreat PT3165, unlike triazine-based chemistries, is not fed stoichiometrically in relation to the amount of H₂S to be removed. Field studies and applications have shown the feed rate is dependent on mixing energy and residence time. This has the potential to significantly reduce chemical usages and related treatment costs.

BACKGROUND

Hydrogen sulfide is a natural component of crude oils and may be present in significant quantities in certain crudes. Many refineries and terminals have H₂S specifications that must be met before crude oil is transferred into storage prior to refining because of the risks associated with high-level exposure. When treating crude oil for H₂S, it is important to consider the downstream impacts scavengers and reaction products may have on refinery process equipment.

Monoethanolamine (MEA) triazine (Hexahydro-1,3,5-tris(hydroxyethyl)-s-triazine) and monomethylamine (MMA) triazine (Hexahydro-1,3,5-trimethyl-s-triazine) are the most commonly used triazine-based H₂S scavengers in today's oil and gas industry.

Using MEA triazine causes MEA hydrochloride salt formation, which can create significant corrosion issues inside an atmospheric crude oil overhead distillation unit. For this reason, refineries prefer to process crude oil that has not been treated with MEA triazine.

MMA triazine is thought to distill through the overhead system and will cause the system pH to increase 2 to 3 units. Adjusting overhead neutralizer programs can prevent amines from concentrating which stops amine salt formation in the distillation column's top trays, though it can increase costs. Refineries will generally accept crude oils treated with MMA triazine.

ChemTreat cannot guarantee results.



GENERAL APPLICATION DETAILS

As with any chemical, application is critical. **ChemTreat PT3165** performance can be enhanced with strong mixing energy and residence time. For crude oil treatment, the product should be injected into the system at a point where enough mixing energy is present. It can also be added to a storage tank or vessel and mixed or circulated.

FIELD RESULTS

In a field trial, the initial H₂S level was at 1.6% (16,000 ppm) in the crude oil vapor phase. The initial temperature was 90°F, and no additional heat was added.

<i>PT3165 Dosage (ppm)</i>	<i>H₂S in Vapor Phase (ppm)</i>		
	One Hour	Three Hours	Eight Hours
200	4,000	700	<2.5
300	1,000	800	<2.5
500	400	350	<2.5
750	400	300	<2.5
1,000	225	<2.5	

The field test results illustrate **ChemTreat PT3165's** ability to mitigate H₂S in crude oil. Dosage rate is determined by available residence time for the reaction to occur and the amount of H₂S reduction desired. A longer reaction time requires a lower PT3165 dosage and vice versa.

Summary

ChemTreat PT3165 is an exciting patented chemistry that has the potential to remove H₂S from crude oil at lower dosages and costs than traditionally-used chemistries.

ChemTreat cannot guarantee results.

