CASE STUDY – MBO IN DOWNSTREAM - REFINERIES

OVERVIEW

The processing of crude oil in refineries is a complex continuous process with very reduced to no time for unplanned interruptions. It is important to assure smooth operations supported by reliable equipment integrity and subsequent value protection of the finished products. Diesel is produced in a distillation process at elevated temperatures and hence is free of any microbial contamination.

Refineries strive for controlling microbiological growth during the necessary storage of the hydrocarbons. Applying best practice operation procedures may ensure that no water contamination will occur. Below are examples of major refineries in Europe and South America, looking for the best suited solution to protect their assets.

During storage they faced issues with the diesel like foaming, corrosion (incl. MIC), and biological deterioration. Because time span of storage may vary according to demand and time of the year, a biocide with an extended efficacy was desired.

Vink's highly experienced application team carefully evaluated the specific situation of each refinery and its KPIs. To provide a tailor-made solution, the ASTM E1259 test methodology was applied. The process conditions of each refinery (diesel quality, type of microbial contamination, diesel:water ratio, turnover) were adopted as test criteria.

SCENARIOS

Scenario R1
European refinery
Diesel B7
50 ppm and 100 ppm grotamar®71
Reinoculation after 7 and 28d
Test duration: 29d

The results of the microbial evaluation confirm the excellent performance of 50 ppm grotamar®71 as a fuel biocide both in the aqueous and organic phase.

Scenario R2
European refinery
Customized diesel (highly contaminated)
100 ppm, 200 ppm and 800 ppm grotamar®71
Reinoculation after 14d
Test duration: 28d

The results of the microbial evaluation confirm the excellent performance of 200 ppm grotamar®71 as a fuel biocide both in the aqueous and organic phase.

Scenario R3
European refinery
Customized diesel
50 ppm and 100 ppm grotamar®71
Reinoculation at 14d, 28d and 42d
Test duration: 8 weeks (56d)

The results of the microbial evaluation confirm the excellent performance of 50 ppm grotamar®71 as a fuel biocide both in the aqueous and organic phase.

CHALLENGE

- Microbial fouling
- Corrosion (incl. MIC)
- Environmental requirements

SOLUTION

- MBO can be easily blended
- MBO is efficient at low dosage

RESULT

- Long-term protection of fuel
- Anti-corrosion properties
- Preservation of the oil and water phase

Vink Chemicals GmbH & Co. KG | Eichenhöhe 29 | 21255 Kakenstorf
OilfieldFuel@vink-chemicals.com | www.vink-chemicals.com