CASE STUDY

Improving MEG regeneration management

BACKGROUND

Monoethylene glycol (MEG) is a commonly used hydrate inhibitor in locations where continual inhibition is required. Whilst not an expensive chemical to use, the volume lost in production fluids can prove costly when calculated per barrel. MEG reclamation/regeneration therefore provides operators with a cost-effective solution to keep control of chemical spend.

OMMICA™ is an operator-deployable technology which delivers near real-time results, and allows operators to improve the management of the regeneration process in two key areas: minimising MEG losses and managing rich and lean MEG.

THE CHALLENGE

Before re-injecting MEG that has been recovered from the system, it must be regenerated to remove the water and salts that are now present. The slightest change within a regeneration unit can significantly impact the concentration of lean MEG produced, so it is important for operators to constantly monitor the fluids entering and leaving the unit. If the levels of MEG re-injected are too low the operator is at risk of hydrate formation, blocking pipelines and causing unnecessary shutdowns.

Whilst MEG is not an expensive per-litre chemical, even excluding costly operational problems, continual usage without regeneration would not be economically viable, and even small losses can become costly. For example, in a 10,000 bbl/day operation, a loss of 100 ppm of MEG into produced fluids could result in a total loss of 70,000 litres of MEG per year. This volume of MEG represents a potential saving of $130,000 per year spent replacing this lost MEG, if operators are able to monitor and respond to losses in near real-time to efficiently manage regeneration systems.

With this importance in mind, traditional monitoring techniques are often problematic. The ASTM method for measurement, gas chromatography (GC), is a high CAPEX/OPEX method which provides accurate results but poses significant logistical issues due to the transportation of samples onshore, and the delay in receiving results. In the past, the only alternative enabling testing in the offshore environment was to use indirect measurements or measurements susceptible to interferences, forcing operators to sacrifice accuracy and limiting their ability to optimise their MEG regeneration units effectively.

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THE SOLUTION

OMMICA Ltd offer an alternative method to GC. OMMICA has been shown to be as accurate, whilst being sufficiently robust to deploy offshore, and in low tech environments. Results show a direct correlation between the on-site OMMICA™ technology and GC at the same PPM level, with an accuracy of +/-2 ppm.

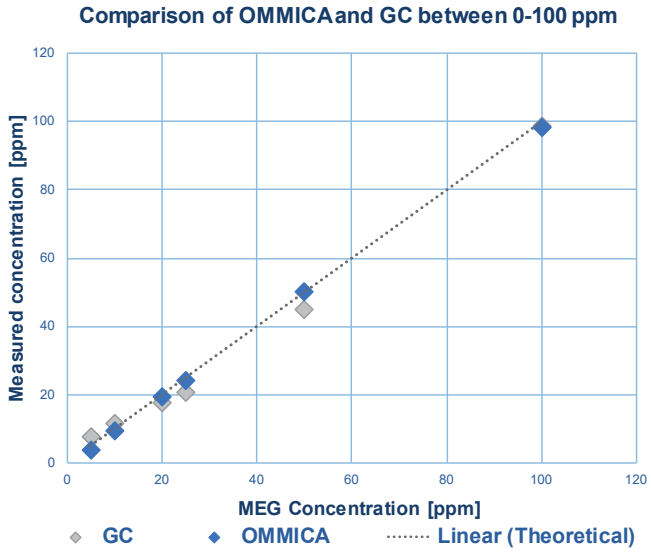

Figure 1: Correlation of OMMICA and GC methods for MEG in water results between 0 and 100 ppm - for the analysis of MEG losses.

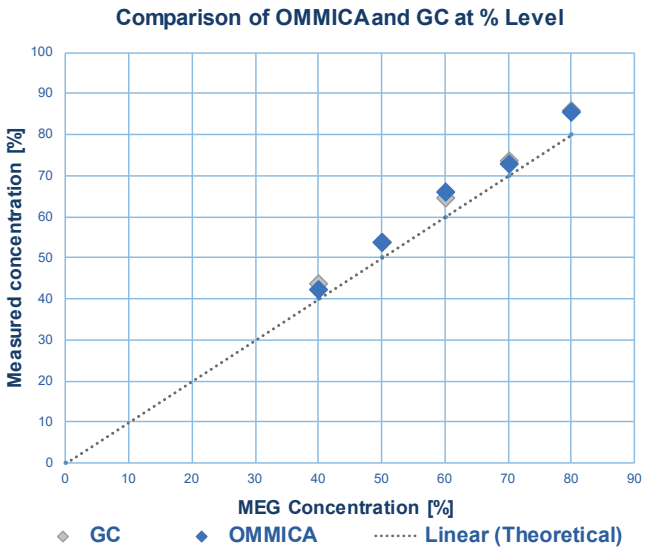

Figure 2: Correlation of OMMICA and GC methods for MEG in water results at % level - for the analysis of Rich and Lean MEG.

OMMICA Ltd have also conducted interference testing, which has shown OMMICA™ to be robust to the interference of common chemicals present within a MEG regeneration unit across a wide range of concentrations. A full list of results can be provided upon request.

Figure 3: OMMICA MEG in water Kit and contents

SUMMARY

PROBLEM	SOLUTION	RESULT
MEG regeneration units require close monitoring and there is a delay in receiving results due to sending samples onshore for testing (which can be costly.)	OMMICA™ is an easy to use, inexpensive method, which delivers results in near-real time, and is as accurate as the ASTM method gas chromatography.	Operators can closely monitor MEG regeneration systems to maximise efficiency and minimise chemical and financial losses, saving time and money.

Simple, onsite analysis of MEG and methanol in produced fluids

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