

## **The effect of mdea/amp and span-80 in water-in-oil (w/o) emulsion for carbon dioxide absorption**

### **ABSTRACT**

Emulsion liquid membrane (ELM) has been widely studied as an alternative method for amine absorption technology in the removal of acid gases such as carbon dioxide (CO<sub>2</sub>) and hydrogen sulphide (H<sub>2</sub>S). However, searching for stable ELM formulation with an enhanced CO<sub>2</sub> absorption remains as challenge. Therefore, in this study, the aqueous solution containing a mixture of methyl diethanolamine (MDEA) and 2-amino-2-methyl-1-propanol (AMP) in sodium hydroxide (NaOH) solution was introduced as a dispersed phase, kerosene as continuous phase and Span-80 acts as a surfactant for the formation of water-in-oil (W/O) emulsion. In this study, the dispersed phase consists of 8% v/v MDEA and 4% v/v AMP and the continuous phase which contains 6% v/v Span-80 produced a stable emulsion and exhibited 65.2% of CO<sub>2</sub> removal. This study indicates that the introduction of blended amine able to produce stable emulsion with an enhanced CO<sub>2</sub> removal