

Studi eksperimental performa metil-dietanol-amina (MDEA)-2-amino-2-metil-1-propanol (AMP)- trietilena-tetramina (TETA) untuk absorpsi-desorpsi karbon dioksida = Studi eksperimental performa metil dietanol amina (MDEA)-2 amino-2-metil-1-propanol (AMP)-trietilena-tetramina (TETA) untuk absorpsi-desorpsi karbon dioksida / Restianny Hanindya

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Abstrak

**ABSTRAK**

Metil-Dietanol-Amina MDEA - 2-Amino-2-Metil-1-Propanol AMP - Trietilena-Tetramina TETA adalah campuran alkanolamina yang menjanjikan untuk menangkap karbon dioksida CO<sub>2</sub>. Kemampuan absorpsi dan desorpsi MDEA-AMP-TETA dengan menggunakan campuran alkanolamina diketahui dari hasil studi eksperimental ini. Eksperimen absorpsi dilakukan pada 1 atm dan 40 C dengan menggunakan 15 v/v CO<sub>2</sub>. Pada proses absorpsi CO<sub>2</sub>, konsentrasi alkanolamina memiliki peranan penting pada kemampuan absorpsi. Konsentrasi masing-masing alkanolamina sebesar 1 mol/L M MDEA-2M AMP-1,5M TETA, 1,5M MDEA-1,5M AMP-1,5M TETA, 2M MDEA-1M AMP-1,5M TETA, dengan total konsentrasi dibuat konstan pada 4,5M. Eksperimen desorpsi CO<sub>2</sub>, temperatur desorpsi memiliki peranan penting, sehingga dilakukan variasi temperatur desorpsi 70 -90 C. Didapatkan 1,5M MDEA-1,5M AMP-1,5M TETA memiliki kapasitas CO<sub>2</sub> loading terbesar. 2M MDEA-1M AMP-1,5M TETA dengan temperatur desorpsi 90 C dapat mendesorpsi CO<sub>2</sub> terbesar.

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**ABSTRACT**

Methyl Diethanol Amine MDEA 2 Amino 2 Methyl 1 Propanol AMP Triethylene Tetramine TETA is a promising aqueous alkanolamina blends for carbon dioxide CO<sub>2</sub> capture. The absorption and desorption performance of MDEA AMP TETA using alkanolamina blends solutions were investigated. The absorption experiment were carried out at 1 atm and 40 C using 15 v v CO<sub>2</sub>. In the process of CO<sub>2</sub> absorption, alkanolamina concentration played important effects on the absorption performance. Concentration of each alkanolamina were varied into 1 mol L M MDEA 2M AMP 1,5M TETA, 1,5M MDEA 1,5M AMP 1,5M TETA, 2M MDEA 1M AMP 1,5M TETA, total alkanolamina solutions concentration were kept constant at 4.5M. In the process of CO<sub>2</sub> desorption from the used absorbent, desorption temperature played an important role on the desorption behavior. It will be varied into 70 90 C. It was discovered 1,5M MDEA 1,5M AMP 1,5M TETA has the greatest CO<sub>2</sub> loading capacity. 2M MDEA 1M AMP 1,5M TETA with temperature desorption at 90 C has the greatest CO<sub>2</sub> desorption.