

## Influence of additives with hydroxyl groups on ammonia absorbent for CO<sub>2</sub> capture

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Aqueous ammonia absorbent (10 wt%) was modified with additives containing hydroxyl groups (1 wt%), i.e. 2-Amino-2-Methyl-1-Propanol (AMP), 2-Amino-2-Methyl-1,3-Propanediol (AMPD), 2-Amino-2-Ethyl-1,3-Propanediol (AEPD), Tri(Hydroxymethyl) AminoMethane (THAM), for CO<sub>2</sub> capture. The loss of ammonia by vapor pressure was reduced by additives, while the removal efficiency of CO<sub>2</sub> was improved. These results were analyzed by those calculated by Gaussian type orbital 6-311G. In addition, overall mass transfer coefficient, reaction constant and activation energy of aqueous ammonia and additive-modified ammonia solution were obtained by using stirred cell. These experimental and theoretical results demonstrate that additives containing hydroxyl group are suitable for modifying aqueous ammonia absorbent for CO<sub>2</sub> removal.