Regeneration heat characteristic analysis of new amine absorbent

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It is important that reduce CO_2 emission from flue gases due to mitigating the global warming problem. Absorbents for CO_2 removal have recycled because of massive quanties and the price of absorbent. Most regeneration processes using chemical solvent have consumed 50~80% of entire energy. This is the main reason for developing high efficient absorbents for regeneration process. In this study, five alkanol amine aqueous solutions[MDEA, AMP, KIER-C3, MDEA/KIER-C3(KMC3-1), AMP/KIER-C3 (KAC3-1)] were used for CO_2 absorption from flue gases to investigate regeneration heat by TGA-DSC analysis. The regeneration heat of KIER-C3(544 kcal/kg-CO_2) was superior to that of MEA(964 kcal/kg-CO_2). Also regeneration heat of CO_2 loaded aqueous blends MDEA/KIER-C3(KMC3-1), AMP/KIER-C3 (KAC3-1) was 570~677 kcal/kg-CO_2 and these values are still superior than that of MEA.