Development of the energy-saving CO_2 Removal Process for OCM Plant

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The oxidative coupling of methane (OCM) process is a alternative ethylene production process using methane because of its huge reserves and financial advantages. CO_2, the side product of OCM reaction, cause the operating trouble of cryogenic distillation such as hydrate. Thus, CO_2 removal process should be required if the overall separation process contain the cryogenic distillation, such as demethnizer. In this study, the case study of CO_2 absorption process using amine aqueous solution was conducted for studying the effect of the operating conditions on the total energy consumption. Through the case, we concluded that CO_2 solubility in amine aqueous solution was the dominant factor of energy consuming. Total energy consumption of high pressure, including compressor and reboiler of stripping tower, was much lower than that of the ambient pressure.