

## Cycle Effects of Carbon Dioxide in the Chemical Absorbent Solutions

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Levels of greenhouse gases such as carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF<sub>6</sub>) have risen steeply during the industrial era owing to human activities like deforestation or heavy fossil fuel use, spurred on by economic and population growth. A wide variety of processes have been developed for the removal of acid gases such as carbon dioxide and hydrogen sulfide from gas streams including physical/chemical absorption, adsorption, membrane process, and oxygen recovery from air (O<sub>2</sub>/CO<sub>2</sub> recycle combustion).

The aim of this paper is to study the characteristics of CO<sub>2</sub> absorption and regeneration. The change of CO<sub>2</sub> loading of absorbent solution during absorption-regeneration cycle was measured using absorbent such as MEA and Sodium glycinate. The Cycle effects of CO<sub>2</sub> were measured using a semi-continuous flow reactor. The absorption-regeneration cycle was repeated for three times. The lean/rich loading capacity of aqueous absorbent solutions for separation of CO<sub>2</sub> were recorded. The lean/rich amine samples in liquid phase were extracted from the absorber and stripper and CO<sub>2</sub> was measured by titration method.