

Removal of carbon dioxide using diisopropanolamine in aqueous xanthan gum solution

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Carbon dioxide was removed from nitrogen gas mixture by absorbing with diisopropanolamine (DIPA) of 0–2 kmol/m³ in the aqueous xanthan gum solution of 0–0.15 wt% using a flat-stirred vessel with an impeller of 0.05 m and agitation speed of 50 rpm at 25°C and 0.101 MPa. The absorption rate of carbon dioxide was estimated by the film theory using the volumetric liquid-side mass transfer coefficient of carbon dioxide, which was correlated with elasticity of the aqueous xanthan gum and compared with the measured rate.