

عنوان مقاله:

A Review on Ammono-Carbonation Reactions: Focusing on the Merseburg Process

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خلاصه مقاله:

Various approaches for sustainable waste management to develop the most cost efficient and feasible one are of importance, and valorization of industrial wastes or by-products has been gaining attention. Due enormous amounts of generated industrial wastes promising solutions are required to overcome increasing pressure on their environmental effects. Recycling of wastes and converting them into added value provides bulk consumption. One of the mostly accumulated industrial wastes, phosphogypsum (PG) and as well as flue gas desulfurization gypsum (FGD gypsum) might perform good effectiveness in production of sulfate compounds. Ammono-carbonation reaction of any kind of gypsum (pure, PG or FGD gypsum) with ammonium carbonate known as Merseburg Process is used to produce ammonium sulfate and calcium carbonate. This study focuses on a brief review of describing the reaction sequence, thermodynamics, and mechanism, as well as operating conditions affecting gypsum conversion, product yield and purity, to evaluate the more strategic and efficient process

کلمات کلیدی:

Merseburg Process Gypsum ammonium sulphate, CO₂ capture, Waste treatment, ammono-carbonation

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