

A review of the red mud utilization possibilities

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Abstract. Red mud, a voluminous industrial waste produced during the Bayer process in the alumina industry, has numerous application possibilities across various fields. Its potential uses are diverse, ranging from the construction industry and metallurgy to environmental protection and agriculture. There are three main aspects of red mud utilization. First, it can be analyzed from the point of view of resource utilization, where it could be applied as raw material mostly in the construction industry. Second, it could be a useful source of valuable components, such as rare earths and metals, especially iron. Third, red mud could have different environmental applications, in wastewater treatment, soil remediation, etc. The paper summarizes current data on red mud utilization methods and aims to emphasize the potential for red mud utilization in various fields.

Keywords: environmental protection; industrial waste utilization; metals recovery; red mud; secondary raw material.

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