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Possible alternatives for cost-effective neutralisation of fluoroanhydrite minimising environmental impact(Article)

Zhakupova, G.a, Sadenova, M.a, Varbanov, P.S.b View Correspondence (jump link)

aD. Serikbayev East Kazakhstan State Technical University, Priority Development Center VERITAS, 69 Protazanov str 070004, Ust-Kamenogorsk, Kazakhstan

bSustainable Process Integration Laboratory – SPIL, NETME Centre, Faculty of Mechanical Engineering, Brno University of Technology - VUT, Brno, Czech Republic

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This article discusses the options for neutralising the waste fluoroanhydrite also containing residues of sulphuric acid. A process is proposed by which all reagents provide a neutral or alkaline environment with $\text{pH} \geq 7$ which remains unchanged for more than 28 d. This indicates that complete and irreversible neutralisation of the toxic fluorine-containing waste materials was ensured. The used reagents were CaO, CaCO₃, KOH, Na₂CO₃ and Ca(OH)₂. The most efficient reagents, also resulting in stability of the product are CaO and Ca(OH)₂. The obtained results lead to proposing the use of the process output as a component for the production of ceramic products for the construction industry. This will allow obtaining additional benefits from replacing primary natural materials and the associated emissions for their sourcing and production. Copyright © 2019, AIDIC Servizi S.r.l.