

Title (en)  
METHOD OF PRODUCING COMPOUNDS OF LITHIUM AND OPTIONALLY OF OTHER ALKALI METALS

Title (de)  
VERFAHREN ZUR HERSTELLUNG VON VERBINDUNGEN VON LITHIUM UND OPTIONAL VON ALKALIMETALLEN

Title (fr)  
PROCÉDÉ DE PRODUCTION DE COMPOSÉS DE LITHIUM ET ÉVENTUELLEMENT D'AUTRES MÉTAUX ALCALINS

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Application  
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Abstract (en)  
[origin: WO2018228618A1] The invention provides a method for recovering lithium and optionally further alkali metal compounds, a mineral from the group of phyllosilicates containing lithium and optionally further alkali metals and also at least 0.2 wt. %, preferably at least 0.9 wt. %, of fluorine, is subjected to a thermal treatment in a furnace at a temperature within the range of from 1100 °C to 1700 °C, preferably at a temperature within the range of from 1220 °C to 1700 °C, at a pressure within the range of from 20 kPa to 150 kPa for a period of 15 to 360 minutes, in the presence of a reagent which contains a) at least one substance from a group comprising carbonates, oxides, hydroxides, sulfates, sulfites and chlorides of alkaline earth metals, in particular calcium; and b) at least one substance capable of releasing chlorine and/or hydrogen chloride and/or sulfur trioxide and/or sulfur dioxide during the thermal treatment, wherein the molar ratio of the total amount of sulfur trioxide and/or sulfur dioxide expressed as SO<sub>3</sub> and/or of chlorine and/or hydrogen chloride expressed as Cl<sub>2</sub> to the total amount of alkali metals including lithium, released from the silicate mineral in the reaction space in the furnace, is at least 0.5, the content of alkaline earth metals, in particular calcium, recalculated as the their oxide content, in the mixture of the phyllosilicate mineral with the reagent is at least 20 wt. %, and the fluorine content in the mixture of the phyllosilicate mineral with the reagent is from 0.1 to 2 wt. %, preferably from 0.2 to 2 wt. %, for decomposition of the structure of the phyllosilicate mineral and for volatilization of lithium compounds and optionally further alkali metal compounds from the thermally treated phyllosilicate mineral, and the compounds of lithium and optionally of further alkali metals are subsequently recovered by condensation by drawing off from 50 to 100 vol. % of flue gas formed in the furnace from the furnace from one or more different places having different temperatures., wherein the rate and volume of the drawn off flue gases from different places can be different for the selective recovery of compounds of individual alkali metals or their groups.

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