

Title (en)
APPARATUS FOR RECOVERING ALKALI METALS AND SULFUR FROM ALKALI METAL SULFIDES AND POLYSULFIDES

Title (de)
VORRICHTUNG ZUR RÜCKGEWINNUNG VON METALLEN UND SCHWEFEL AUS ALKALIMETALLSULFIDEN UND POLYSULFIDEN

Title (fr)
DISPOSITIF DE RÉCUPÉRATION DE MÉTAUX ALCALINS ET DE SOUFRE À PARTIR DE SULFURES ET DE POLYSULFURES DE MÉTAUX ALCALINS

Publication
EP 2970780 A1 20160120 (EN)

Application
EP 14770492 A 20140314

Priority
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• US 2014027292 W 20140314

Abstract (en)
[origin: WO2014152393A1] Alkali metals (126) and sulfur (128) may be recovered from alkali monosulfide and polysulfides (122) in an electrolytic process that utilizes an electrolytic cell (120) having an alkali ion conductive membrane. An anolyte solution includes an alkali monosulfide, an alkali polysulfide, or a mixture thereof and a solvent that dissolves elemental sulfur. A catholyte includes molten alkali metal. Applying an electric current oxidizes sulfide and polysulfide in the anolyte compartment, causes alkali metal ions to pass through the alkali ion conductive membrane to the catholyte compartment, and reduces the alkali metal ions in the catholyte compartment. Liquid sulfur separates from the anolyte solution and may be recovered. The electrolytic cell is operated at a temperature where the formed alkali metal and sulfur are molten.

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