

Title (en)

METHOD FOR PURIFYING AND FOR CONCENTRATING RARE EARTHS FROM PHOSPHOGYPSUM

Title (de)

VERFAHREN ZUR REINIGUNG UND ZUR KONZENTRATION SELTENER ERDEN AUS PHOSPHOGIPS

Title (fr)

PROCEDE DE PURIFICATION ET DE CONCENTRATION DES TERRES RARES A PARTIR DU PHOSPHOGYPSE

Publication

**EP 3856940 A1 20210804 (FR)**

Application

**EP 19783383 A 20190930**

Priority

- FR 1858946 A 20180928
- MA 2019000008 W 20190930

Abstract (en)

[origin: WO2020067856A1] The present invention relates to a method for purifying and for concentrating rare earths contained in phosphogypsum, characterised in that it comprises the following steps: from a phosphogypsum, a) lixiviation of the phosphogypsum using a solution of one or more strong acids selected from: sulphuric acid, nitric acid and hydrochloric acid in order to obtain a lixiviation mixture comprising a liquid phase formed by a lixiviation solution containing rare earths originating from the phosphogypsum and the lixiviation acid, and a solid phase comprising the phosphogypsum; b) adding an oxidising agent to the phosphogypsum in order to promote the passage of the rare earths of the phosphogypsum in the lixiviation solution, and/or a reducing agent for reducing the solubility of the mineral impurities contained in the lixiviation solution in order to allow them to pass from the lixiviation solution in the solid phase; c) separating the liquid phase enriched with rare earths and depleted of mineral impurities and the solid phase enriched with mineral impurities.

IPC 8 full level

**C22B 3/06** (2006.01); **C22B 3/08** (2006.01); **C22B 3/10** (2006.01); **C22B 3/44** (2006.01); **C22B 59/00** (2006.01)

CPC (source: EP IL US)

**C01F 17/10** (2020.01 - US); **C22B 3/065** (2013.01 - EP IL US); **C22B 3/08** (2013.01 - EP IL US); **C22B 3/10** (2013.01 - EP IL); **C22B 3/44** (2013.01 - EP IL US); **C22B 59/00** (2013.01 - EP IL US); **Y02P 10/20** (2015.11 - EP)

Citation (search report)

See references of WO 2020067856A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**WO 2020067856 A1 20200402**; CN 112771185 A 20210507; CN 112771185 B 20230411; EP 3856940 A1 20210804; FR 3086672 A1 20200403; FR 3086672 B1 20201113; IL 281830 A 20210531; JO P20210055 A1 20210324; MA 53725 A 20220105; US 2021388466 A1 20211216

DOCDB simple family (application)

**MA 2019000008 W 20190930**; CN 201980063988 A 20190930; EP 19783383 A 20190930; FR 1858946 A 20180928; IL 28183021 A 20210325; JO P20210055 A 20190930; MA 53725 A 20190930; US 201917279932 A 20190930