

Title (en)

HOT-CURING MOULD MATERIAL FOR PRODUCING CORES AND MOULDS IN THE SAND CASTING PROCESS

Title (de)

WARMHÄRTENDER FORMSTOFF ZUR HERSTELLUNG VON KERNEN UND FORMEN IM SANDFORMVERFAHREN

Title (fr)

MATIÈRE À MOULER THERMODURCISSABLE CONÇUE POUR PRODUIRE DES NOYAUX ET DES MOULES DANS LE CADRE DE PROCÉDÉS DE MOULAGE EN SABLE

Publication

EP 4021661 A1 20220706 (DE)

Application

EP 20771194 A 20200827

Priority

- DE 102019123372 A 20190830
- DE 2020100760 W 20200827

Abstract (en)

[origin: WO2021037312A1] The invention relates to a hot-curing mould material for producing cores and moulds in the sand casting process. This mould material comprises natural and/or ceramic sands and a two-component polyurethane binder free from phenolic resin, and also a heat-activatable catalyst. Said binder takes the form of a two-component polyurethane-based binder, comprising - a two-component phenol- and formaldehyde-free polyurethane-based binder comprising a resin component in the form of a mixture of two or more compounds which are hydrogen-active in respect of isocyanates and which have hydroxyl and/or mercapto and/or amino and/or carbamide groups, with an OH, SH and NH functionality of 1.5 to 8 and equivalent weights of 9 to 2000 g/equiv. of the individual constituents and with an average H functionality of 1.8 to 4.0 and an average equivalent weight of 90 to 200 g/equiv. of the resin component, and comprising a curing component with one or more diisocyanates or polyisocyanates, - a curing component consisting of one or more diisocyanates or polyisocyanates. The at least one thermally activatable catalyst, the activation temperature of which lies between 50 and 170 °C, comprises Brønsted bases and/or Lewis acids which promote the polyurethane reaction and also their associated blocking agents. The mould material comprises one or more refractory and pourable fillers having a medium particle size range from 0.1 to 0.9 mm, and comprises 0.3 to 4.0 % of the binder described, based on the mould base material, and 0.1 to 2.5 % of thermally activatable catalyst, based on the resin component of the binder.

IPC 8 full level

B22C 1/22 (2006.01)

CPC (source: EP)

B22C 1/2273 (2013.01)

Citation (search report)

See references of WO 2021037312A1

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 2021037312 A1 20210304; DE 102019123372 A1 20210304; EP 4021661 A1 20220706

DOCDB simple family (application)

DE 2020100760 W 20200827; DE 102019123372 A 20190830; EP 20771194 A 20200827