

Title (en)

Use of oxidized humic acid its salts and derivatives in dishwashing compositions

Title (de)

Verwendung von oxidierte Huminsäure deren Salze und Derivate in Geschirrspülzusammensetzungen

Title (fr)

UTILISATION DE PRODUITS D'OXYDATION DE L'ACIDE HUMIQUE OXYDE, DE LEURS SELS ET DÉRIVES DANS DES COMPOSITIONS DE LAVAGE DE LA VAISSELLE

Publication

**EP 2942384 A1 20151111 (EN)**

Application

**EP 14001599 A 20140507**

Priority

EP 14001599 A 20140507

Abstract (en)

The present invention relates to the field of dishwashing compositions. In particular this invention relates to the use of oxidized humic acid compounds, its salts and derivatives or its mixtures in dishwashing compositions. Such cleaning compositions have improved foaming capacities due to excellent builder properties of oxidized humic acid, its salts and derivatives. This effective builder is useful for enhancement of cleaning capacity. Dishwashing compositions of the present invention are prepared by using oxidized humic acid, its salts and derivatives or mixtures thereof and used for cleaning purposes of glass, metal, porcelain and plastic dishes.

IPC 8 full level

**C11D 1/04** (2006.01); **C11D 1/36** (2006.01); **C11D 3/20** (2006.01)

CPC (source: EP)

**C11D 3/221** (2013.01); **C11D 3/28** (2013.01); **C11D 3/30** (2013.01); **C11D 3/33** (2013.01)

Citation (applicant)

- US 5451244 A 19950919 - CASTLEDINE B WAYNE [US]
- WO 2010094985 A1 20100826 - LOMOVSKIY OLEG IVANOVICH [RU], et al
- DE 19624982 A1 19980108 - PFUELLER UWE DR [DE], et al

Citation (search report)

- [I] WO 2008075084 A1 20080626 - RECKITT BENCKISER NV [NL], et al
- [I] ALLARD ET AL: "Oxidation of humic acids from an agricultural soil and a lignite deposit: Analysis of lipophilic and hydrophilic products", ORGANIC GEOCHEMISTRY, PERGAMON, AMSTERDAM, NL, vol. 38, no. 12, 14 November 2007 (2007-11-14), pages 2036 - 2057, XP022344502, ISSN: 0146-6380, DOI: 10.1016/J.ORGGEOCHEM.2007.08.005
- [A] SILVIA SALATI ET AL: "Perspective on the use of humic acids from biomass as natural surfactants for industrial applications", BIOTECHNOLOGY ADVANCES, ELSEVIER PUBLISHING, BARKING, GB, vol. 29, no. 6, 21 July 2011 (2011-07-21), pages 913 - 922, XP028306425, ISSN: 0734-9750, [retrieved on 20110729], DOI: 10.1016/J.BIOTECHADV.2011.07.012

Cited by

CN116675873A; WO2017078636A1

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)

**EP 2942384 A1 20151111**; WO 2015171089 A1 20151112

DOCDB simple family (application)

**EP 14001599 A 20140507**; TR 2015000174 W 20150429