

Title (en)

EPOXIDE QUATERNIZED QUATERNARY AMMONIUM SALTS

Title (de)

EPOXIDQUATERNIERTE QUATERNÄRE AMMONIUMSALZE

Title (fr)

SELS D'AMMONIUM QUATERNAIERS FONCTIONNALISÉS PAR DES AGENTS DE QUATERNISATION ÉPOXYDE

Publication

**EP 3536766 B1 20201209 (EN)**

Application

**EP 19166380 A 20150529**

Priority

- US 201462005114 P 20140530
- EP 15730327 A 20150529
- US 2015033210 W 20150529

Abstract (en)

[origin: WO2015184276A1] The present technology is related to quaternary ammonium salts prepared with alcohol functionalized and/or C4 to C20 epoxide quaternizing agents, such as, for example, glycidol and 1,2-butylene oxide, and the use of such quaternary ammonium salts in fuel compositions to improve the water shedding performance of the fuel composition.

IPC 8 full level

**C10M 133/58** (2006.01); **C10L 1/188** (2006.01); **C10L 1/222** (2006.01); **C10L 1/224** (2006.01); **C10L 1/232** (2006.01); **C10L 1/2383** (2006.01); **C10L 10/04** (2006.01); **C10L 10/18** (2006.01); **C10M 133/56** (2006.01); **C10N 20/04** (2006.01); **C10N 30/04** (2006.01); **C10N 40/25** (2006.01); **C10N 40/26** (2006.01); **C10N 70/00** (2006.01)

CPC (source: CN EP US)

**C10L 1/222** (2013.01 - US); **C10L 1/2383** (2013.01 - CN EP US); **C10L 10/04** (2013.01 - CN EP US); **C10L 10/18** (2013.01 - CN EP US); **C10M 133/06** (2013.01 - US); **C10M 133/56** (2013.01 - CN EP US); **C10M 133/58** (2013.01 - CN); **C10L 1/1883** (2013.01 - CN EP US); **C10L 2200/0259** (2013.01 - US); **C10L 2200/0423** (2013.01 - CN EP US); **C10L 2200/0446** (2013.01 - CN EP US); **C10L 2270/023** (2013.01 - EP US); **C10L 2270/026** (2013.01 - EP US); **C10M 2207/127** (2013.01 - CN EP US); **C10M 2215/02** (2013.01 - CN EP US); **C10M 2215/04** (2013.01 - CN EP US); **C10M 2215/042** (2013.01 - CN EP US); **C10M 2215/28** (2013.01 - CN EP US); **C10M 2217/043** (2013.01 - CN EP US); **C10N 2020/04** (2013.01 - CN EP US); **C10N 2030/04** (2013.01 - EP US); **C10N 2030/06** (2013.01 - US); **C10N 2040/04** (2013.01 - US); **C10N 2040/25** (2013.01 - CN EP US); **C10N 2040/252** (2020.05 - CN EP US); **C10N 2040/253** (2020.05 - CN EP US); **C10N 2040/255** (2020.05 - CN EP US); **C10N 2040/26** (2013.01 - CN EP US); **C10N 2070/00** (2013.01 - CN EP US)

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

DOCDB simple family (publication)

**WO 2015184276 A1 20151203**; BR 112016028080 A2 20201215; BR 112016028080 B1 20220614; CN 106661473 A 20170510; DK 3149130 T3 20190520; EP 3149130 A1 20170405; EP 3149130 B1 20190403; EP 3536766 A1 20190911; EP 3536766 A8 20200226; EP 3536766 B1 20201209; SG 11201609882U A 20161229; US 2017107441 A1 20170420

DOCDB simple family (application)

**US 2015033210 W 20150529**; BR 112016028080 A 20150529; CN 201580041314 A 20150529; DK 15730327 T 20150529; EP 15730327 A 20150529; EP 19166380 A 20150529; SG 11201609882U A 20150529; US 201515315050 A 20150529