

Title (en)  
CATIONIC GEMINI AND RELATED MULTIPLE HYDROPHILIC/HYDROPHOBIC FUNCTIONAL COMPOUNDS AND THEIR USE AS SURFACTANTS

Title (de)  
KATIONISCHE GEMINI- UND VERWANDTE MEHRFACH HYDROPHIL-/HYDROPHOB-FUNKTIONALISIERTE VERBINDUNGEN UND IHRE VERWENDUNG ALS TENSIDE

Title (fr)  
CATIONS JUMELES ET COMPOSES FONCTIONNELS HYDROPHILES/HYDROPHOBES MULTIPLES APPARENTES ET LEUR EMPLOI COMME TENSIOACTIFS

Publication  
**EP 1147158 A1 20011024 (EN)**

Application  
**EP 99967773 A 19991230**

Priority  
• US 9931246 W 19991230  
• US 11454498 P 19981231

Abstract (en)  
[origin: WO0039241A1] A compound of general formula (I), (II), or (III): wherein each of R1 through R20 are independently selected from straight or branched chain, substituted or unsubstituted C1-C22 alkyl or alkenyl groups, wherein said alkyl or alkenyl groups optionally contain at least one ester linkage, at least one amide linkage, or mixtures thereof; A is a space group of formula (1) or (2), (3) or an amide group; and X1 and X2 are the same or different and are selected from C1-C22 substituted or unsubstituted alkyl, C1-C22 substituted, or unsubstituted alkenyl wherein said alkyl or alkenyl group optionally contain at least one ester linkage; and wherein in each of formula (I), (II) and (III), Z is an anion, with the proviso that R15 and R20 are not the same. The invention also relates to a compound of formula (IV) wherein R21, R22, R23, R24, R25, R26, R27, and R28 are the same or different and are selected from straight or branched chain, substituted, or unsubstituted C1-C22 alkyl or alkenyl groups, wherein said alkyl or alkenyl groups optionally contain at least one ester linkage, at least one amide linkage or mixtures thereof, and where x and y are each independently an integer of from 1-20, n is greater than 1 and Z is an anion, and to processes for preparing these compounds.

IPC 1-7  
**C09K 3/22**; **C11D 3/02**; **C07C 211/00**; **C07C 303/00**

IPC 8 full level  
**C09K 23/18** (2022.01); **C07C 209/12** (2006.01); **C07C 211/63** (2006.01); **C07C 213/08** (2006.01); **C07C 219/06** (2006.01); **C07C 231/02** (2006.01); **C07C 233/36** (2006.01); **C09K 3/00** (2006.01); **C09K 23/22** (2022.01); **C11D 1/62** (2006.01)

CPC (source: EP KR)  
**C07C 211/00** (2013.01 - KR); **C07C 211/63** (2013.01 - EP); **C07C 219/06** (2013.01 - EP); **C07C 233/36** (2013.01 - EP); **C09K 3/00** (2013.01 - EP); **C11D 1/62** (2013.01 - EP)

Citation (search report)  
See references of WO 0039241A1

Designated contracting state (EPC)  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)  
**WO 0039241 A1 20000706**; AU 2399500 A 20000731; AU 771929 B2 20040408; BR 9916711 A 20010925; CA 2357756 A1 20000706; CN 1227321 C 20051116; CN 1346395 A 20020424; EP 1147158 A1 20011024; HK 1043383 A1 20020913; JP 2003505339 A 20030212; KR 20010101352 A 20011114; ZA 200105408 B 20020930

DOCDB simple family (application)  
**US 9931246 W 19991230**; AU 2399500 A 19991230; BR 9916711 A 19991230; CA 2357756 A 19991230; CN 99815940 A 19991230; EP 99967773 A 19991230; HK 02103069 A 20020424; JP 2000591141 A 19991230; KR 20017008425 A 20010630; ZA 200105408 A 20010629