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23 December 2010



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(54) **Title:** HIGH ALKALINE DETERGENT COMPOSITION WITH ENHANCED SCALE CONTROL

(57) **Abstract:** A detergent composition for preventing scale on various surfaces includes a threshold system, a caustic and a surfactant system. The threshold system includes a sulfonate/acrylate copolymer, an acrylate homopolymer and a phosphonoalkane carboxylic acid with a sulfonate/acrylate copolymer to acrylate homopolymer weight ratio of between about 2:1 to about 1:2. The pH of the detergent composition is between about 10 and about 13.

**A. CLASSIFICATION OF SUBJECT MATTER***C11D 3/60(2006.01)i, C11D 3/37(2006.01)i*

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

C11D 3/60; C11D3/10;C11D 1/00; C02F 5/14; C23F 11/167

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) &amp; Keywords:"scale","threshold","water-soluble polymer","acrylate homopolymer","phosphonoalkane carboxylic acid","inhibitor","detergent","alkali"

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4936987 A1 (PERSINSKI; LEONARD J. et al.) 26 June 1990	1-7
Y	See claim 1, col.3 line 14-col.4 line 46, col.5 line 10-16	8-20
Y	EP 0364067 A2 (The Clorox company) 18 April 1990 See claims 1-3,5-16, page 3 line 40-page5 line 25, page 6 line 26-58	8-20
A	US 2003-0091467 A1 (PAVOL KMEC et al.) 15 May 2003 See claims 1-5, para.13-14	1-20
A	US 4652377 A1 (AMJAD; ZAHID) 24 March 1987 See claims 1-8	1-20
A	US 2004-0106534 A1 (CHRISTIAN NITSCH et al.) 03 June 2004 See claims 1-7,13,15,16,22-30	1-20

 Further documents are listed in the continuation of Box C. See patent family annex.

\* Special categories of cited documents:

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"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

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Date of mailing of the international search report

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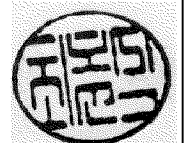
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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/IB2010/050398**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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