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SUPERINDUSTRIA Y COMERCIO
Radicacion : 00043128 00000004 Folios: 2
Fecha (AMD): 2002-12-09 16:38:16
Tramite : 002 PATENTES D 1 REGISTRO/ 538 PETICION
Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

o.com.co

AS: 82.627

Señores
SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIVISION DE NUEVAS CREACIONES
E. S. D.

REF.: Expediente No. 00 043.128 solicitud de Patente a nombre de COLGATE – PALMOLIVE COMPANY

RAMIRO CASTRO DUQUE, vecino de Bogotá, portador de la tarjeta profesional No. 1003 del Consejo Superior de la Judicatura, obrando como apoderado de la Sociedad COLGATE – PALMOLIVE COMPANY, según lo acredita el documento de poder protocolizado en la Secretaría General bajo el No. 131, de acuerdo con el Artículo 44 de la Decisión 486 de la Comisión de la Comunidad andina, me permito solicitar que se examine si la invención contenida en la solicitud en referencia es patentable.

De acuerdo con lo anterior, me permito anexar el recibo oficial de caja No. 02-80,154 por valor de $318.000.

Señor Superintendente,

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Diciembre 09, 2002
CPB/hsr

118 421

PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : C11D 3/386, 1/62, 1/65 // 3/50 — A2

(11) International Publication Number: **WO 97/43388**

(43) International Publication Date: 20 November 1997 (20.11.97)

(21) International Application Number: PCT/US97/08444

(22) International Filing Date: 16 May 1997 (16.05.97)

(30) Priority Data:
60/017,883 17 May 1996 (17.05.96) US

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(81) Designated States: BR, CA, CN, CZ, HU, JP, MX, TR, US, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published
Without international search report and to be republished upon receipt of that report.

(54) Title: DETERGENT COMPOSITION

(57) Abstract

A detergent composition comprising an enzyme, a non-AQA surfactant and a bis-alkoxylated quaternary ammonium (bis-AQA) cationic surfactant.

DETERGENT COMPOSITION

Technical Field

The present invention relates to a detergent composition comprising an enzyme, a non-AQA surfactant and a bis-alkoxylated quaternary ammonium (bis-AQA) cationic surfactant.

Background to the Invention

The formulation of laundry detergents and other cleaning compositions presents a considerable challenge, since modern compositions are required to remove a variety of soils and stains from diverse substrates. Thus, laundry detergents, hard surface cleaners, shampoos and other personal cleansing compositions, hand dishwashing detergents and detergent compositions suitable for use in automatic dishwashers all require the proper selection and combination of ingredients in order to function effectively. In general, such detergent compositions will contain one or more types of surfactants which are designed to loosen and remove different types of soils and stains. While a review of the literature would seem to indicate that a wide selection of surfactants and surfactant combinations are available to the detergent manufacturer, the reality is that many such ingredients are speciality chemicals which are not suitable in low unit cost items such as home-use laundry detergents. The fact remains that most such home-use products such as laundry detergents still mainly comprise one or more of the conventional ethoxylated nonionic and/or sulfated or sulfonated anionic surfactants, presumably due to economic considerations and the need to formulate compositions which function reasonably well with a variety of soils and stains and a variety of fabrics.

The quick and efficient removal of different types of soils and stains such as body soils, greasy/oily soils and certain food stains, can be problematic. Such soils comprise a mixture of triglycerides, lipids, complex polysaccharides, inorganic salts and proteinaceous matter all of which are, to some extent, composed of hydrophobic moieties and are thus notoriously difficult to remove. Low levels of hydrophobic soils and residual

stains often remain on the surface of the fabric after washing. Successive washing and wearing coupled with limited hydrophobic soil removal in the wash culminates in a build up of residual soil and stain which further entraps particulate dirt leading to fabric yellowing. Eventually the fabric takes on a dingy appearance which is perceived as unwearable and discarded by the consumer.

The literature suggests that various nitrogen-containing cationic surfactants would be useful in a variety of cleaning compositions. Such materials, typically in the form of amino-, amido-, or quaternary ammonium or imidazolinium compounds, are often designed for speciality use. For example, various amino and quaternary ammonium surfactants have been suggested for use in shampoo compositions and are said to provide cosmetic benefits to hair. Other nitrogen-containing surfactants are used in some laundry detergents to provide a fabric softening and anti-static benefit. For the most part, however, the commercial use of such materials has been limited by the difficulty encountered in the large scale manufacture of such compounds. An additional limitation has been the potential precipitation of anionic active components of the detergent composition occasioned by their ionic interaction with cationic surfactants. The aforementioned nonionic and anionic surfactants remain the major surfactant components in today's laundry compositions.

It has now been discovered that certain bis-alkoxylated quaternary ammonium (bis-AQA) compounds can be used in various detergent compositions to boost detergency performance on a variety of soil and stain types, particularly the hydrophobic soil types, commonly encountered. Unexpectedly, it has now been discovered that compositions containing enzymes and a bis-AQA surfactant deliver not only superior cleaning and whiteness performance versus products containing either technology alone, but also provide improved fabric care.

The bis-AQA surfactants of the present invention provide substantial benefits to the formulator, over cationic surfactants previously known. For example, the bis-AQA surfactants used herein provide marked improvement in cleaning of "everyday" greasy/oily hydrophobic soils regularly encountered. Moreover, the bis-AQA surfactants are compatible with anionic surfactants commonly used in detergent compositions such as alkyl sulfate and alkyl benzene sulfonate; incompatibility with anionic components of the detergent composition has commonly been the limiting factor in the use of cationic surfactants to date. Low levels (as low as 3 ppm in the laundering liquor) of bis-AQA

surfactants gives rise to the benefits described herein. Bis-AQA surfactants can be formulated over a broad pH range from 5 to 12. The bis-AQA surfactants can be prepared as 30% (wt.) solutions which are pumpable, and therefore easy to handle in a manufacturing plant. Bis-AQA surfactants with degrees of ethoxylation above 5 are sometimes present in a liquid form and can therefore be provided as 100% neat materials. In addition to their beneficial handling properties, the availability of bis-AQA surfactants as highly concentrated solutions provides a substantial economic advantage in transportation costs. The bis-AQA surfactants are also compatible with various perfume ingredients, unlike some cationic surfactants known in the art.

One aspect of the present invention provides a means for enhancing the removal of greasy/oily soils by combining a lipase enzyme with an AQA surfactant. Greasy/oily soils are comprised of a mixture of materials, including triglycerides. On storage of soiled garments before washing, triglycerides in the soil are converted by bacterial action to fatty acids; lipase enzymes can be used to convert any remaining triglycerides to fatty acids through-the-wash. Fatty acids in the soil interact with the hardness ion in the wash water (e.g. Mg^{2+} and Ca^{2+} ions) to form insoluble magnesium/calcium fatty acid salts or lime-soaps. Lime-soaps precipitate from the wash solution forming a layer of lime-soap deposit on the fabric. Successive washing results in the build-up of lime-soap deposits which entrap particulate dirt, hinder soil removal and enhance retension of soil residues on the fabric after the wash. A further problem exists in the degradation of the sheaths surrounding fibres of old/worn cotton fabrics or other cellulosic fabrics. The sheaths degrade to form gelatinous/amorphous cellulose "glues" which entrap dirt. In addition, the glue acts as an ideal substrate for deposition/retention of greasy/oily hydrophobic body soils (e.g., on collars and pillowcases). Upon successive wearing/washing the build-up of residual soils, lime-soap deposits and dirt entrapped therein, leads to fabric yellowing. Eventually, the fabric becomes dingy and is perceived as unwearable, and are often discarded, by the consumer.

It has now been found that detergent compositions containing bis-AQA surfactants and lipase enzyme deliver superior cleaning and whiteness performance vs. products containing either technology alone. It is believed that these benefits are the result of: (1) bis-AQA reducing lime-soap formation and thereby allowing lipase unhindered access to the soil; and (2) effective lifting off of fatty acids from the soil (by bis-AQA) to ensure maximum lipase activity (high levels of fatty acids in the soil inhibiting lipase action).

Surprisingly, it has now been found that detergent compositions containing the bis-AQA surfactants and cellulytic enzymes (e.g., cellulases and/or endoglucanases) deliver superior cleaning and whiteness performance vs. products containing either ingredient alone. These benefits appear to be the result of the effective penetration of hydrophobic body soils by the bis-AQA surfactants. This, in turn, boosts access of the cellulytic enzymes which degrade the amorphous cellulose glue (which binds the soil on the fabric) around the fibres. As the glue dissolves, the entrapped dirt is released and whiteness is restored. In addition to cleaning benefits, the combined cellulytic/bis-AQA system also provides softness and fabric care benefits vs. either the cationic or enzyme alone, by effective depilling and ungluing of worn fibres.

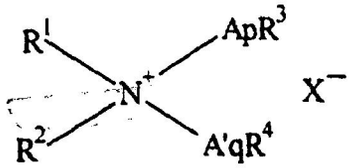
It has now further been discovered that detergent compositions containing a combination of the bis-AQA surfactants herein and amylase enzymes delivers superior cleaning and whiteness performance vs. compositions containing either technology alone. These benefits appear to be the result of improved degradation of the residual "glue" around the fibres (bis-AQA facilitating improved amylase access to sensitive soil components through effective soil solubilization). As the glue dissolves, whiteness is restored and entrapped particulate dirt is released/made accessible to the decolourizing action of other wash actives.

Background Art

U.S. Patent 5,441,541, issued August 15, 1995, to A. Mehreteab and F. J. Loprest, relates to anionic/cationic surfactant mixtures. U.K. 2,040,990, issued 3 Sept., 1980, to A. P. Murphy, R.J.M. Smith and M. P. Brooks, relates to ethoxylated cationics in laundry detergents.

Summary of the Invention

The present invention provides a composition comprising or prepared by combining an enzyme, a non-AQA surfactant and an effective amount of a bis-alkoxylated quaternary ammonium (bis-AQA) cationic surfactant of the formula:



wherein R^1 is a linear, branched or substituted C_8-C_{18} alkyl, alkenyl, aryl, alkaryl, ether or glycityl ether moiety, R^2 is a C_1-C_3 alkyl moiety, R^3 and R^4 can vary independently and are selected from hydrogen, methyl and ethyl, X is an anion, and A and A' can vary independently and are each C_1-C_4 alkoxy, p and q can vary independantly and are integers of from 1 to 30.

Detailed Description of the Invention

Enzymes

The compositions of the present invention include enzymes as essential components. Enzymes can be included in the present detergent compositions for a variety of purposes, including removal of protein-based, carbohydrate-based, or triglyceride-based stains from substrates, for the prevention of refugee dye transfer in fabric laundering, and for fabric restoration. Suitable enzymes include proteases, amylases, lipases, cellulases, peroxidases, and mixtures thereof of any suitable origin, such as vegetable, animal, bacterial, fungal and yeast origin. Preferred selections are influenced by factors such as pH-activity and/or stability optima, thermostability, and stability to active detergents, builders. In this respect bacterial or fungal enzymes are preferred, such as bacterial amylases and proteases, and fungal cellulases.

"Detersive enzyme", as used herein, means any enzyme having a cleaning, stain removing or otherwise beneficial effect in a laundry, hard surface cleaning or personal care detergent composition. Preferred detersive enzymes are hydrolases such as proteases, amylases and lipases. Preferred enzymes for laundry purposes include, but are not limited to, proteases, cellulases, lipases and peroxidases. Highly preferred for automatic dishwashing are amylases and/or proteases.

Enzymes are normally incorporated into detergent or detergent additive compositions at levels sufficient to provide a "cleaning-effective amount". The term "cleaning effective

amount" refers to any amount capable of producing a cleaning, stain removal, soil removal, whitening, deodorizing, or freshness improving effect on substrates such as fabrics, dishware. In practical terms for current commercial preparations, typical amounts are up to 5 mg by weight, more typically 0.01 mg to 3 mg, of active enzyme per gram of the detergent composition. Stated otherwise, the compositions herein will typically comprise from 0.001% to 5%, preferably 0.01%-1% by weight of a commercial enzyme preparation. Protease enzymes are usually present in such commercial preparations at levels sufficient to provide from 0.005 to 0.1 Anson units (AU) of activity per gram of composition. For certain detergents, such as in automatic dishwashing, it may be desirable to increase the active enzyme content of the commercial preparation in order to minimize the total amount of non-catalytically active materials and thereby improve spotting/filming or other end-results. Higher active levels may also be desirable in highly concentrated detergent formulations.

Suitable examples of proteases are the subtilisins which are obtained from particular strains of *B. subtilis* and *B. licheniformis*. One suitable protease is obtained from a strain of *Bacillus*, having maximum activity throughout the pH range of 8-12, developed and sold as ESPERASE® by Novo Industries A/S of Denmark, hereinafter "Novo". The preparation of this enzyme and analogous enzymes is described in GB 1,243,784 to Novo. Other suitable proteases include ALCALASE® and SAVINASE® from Novo and MAXATASE® from International Bio-Synthetics, Inc., The Netherlands; as well as Protease A as disclosed in EP 130,756 A, January 9, 1985 and Protease B as disclosed in EP 303,761 A, April 28, 1987 and EP 130,756 A, January 9, 1985. See also a high pH protease from Bacillus sp. NCIMB 40338 described in WO 9318140 A to Novo. Enzymatic detergents comprising protease, one or more other enzymes, and a reversible protease inhibitor are described in WO 9203529 A to Novo. Other preferred proteases include those of WO 9510591 A to Procter & Gamble . When desired, a protease having decreased adsorption and increased hydrolysis is available as described in WO 9507791 to Procter & Gamble. A recombinant trypsin-like protease for detergents suitable herein is described in WO 9425583 to Novo.

In more detail, an especially preferred protease, referred to as "Protease D" is a carbonyl hydrolase variant having an amino acid sequence not found in nature, which is derived from a precursor carbonyl hydrolase by substituting a different amino acid for a plurality of amino acid residues at a position in said carbonyl hydrolase equivalent to position +76, preferably also in combination with one or more amino acid residue positions equivalent to

*The bis-AQA-1 (CocoMeEO2) surfactant of the Example may be replaced by an equivalent amount of any of surfactants bis-AQA-2 through bis-AQA-22 or other bis-AQA surfactants herein.

The following illustrates a laboratory procedure and test results, over a variety of soils and stains, using compositions within the scope of the invention. As will be seen from the data, overall cleaning improvements are achieved with a wide variety of soils and stains on various fabrics.

PERFORMANCE TEST PROCEDURE

SAMPLE PREPARATIONS :

The sample preparation basically involves following steps :

1. Preparation of premixed LAS+AS
2. Preparation of Premixed LAS+AS+Cationic
3. Preparation of stock nonionic (AE) surfactant
4. Preparation of builder solution
5. Preparation of Granules

Surfactant:

Surfactant	Weight* gms	Active %	Wash Concentrations, ppm
LAS	78.85	44.50	143.20
AS	34.55	31.00	43.70
Cationic	01.90	40.00	3.10
AE	19.44	100.00	22.00

*(The actual weights will differ with percent active)

Sequence of Product preparation for performance test :

Step I:

The individual surfactants are weighed and mixed in the following sequence :

1. 78.85 gms of LAS are weighed.
2. 34.55 gms of AS are weighed into the same beaker.
3. 498.10 mls of Distilled water are added to the mixture of LAS & AS.
4. LAS and AS are premixed until completely dissolved with heating at 40 deg C for about 30 minutes until completely dissolved.

Step II:

1. 01.90 gms of the cationic are weighed into the same beaker containing LAS+AS premixed solution.
2. Total Volume of solution now is 500 mls.

This 500 ml mixture of surfactants is good for five washes, 100 mls of this stock solution are used for per wash. This 100 ml solution when added to 49 liters of tap water gives the corresponding wash concentrations for individual surfactants.

Step III:

1. 19.44 gms of AE are weighed separately.
2. 900 mls of distilled water are added to the AE .
3. This 900 ml solution are good for 18 washes.
4. 50 mls of this solution are used per wash.

Step IV:

Silicate: 148.32 gms per 900 ml of Distilled water; 50 mls of this solution are used per wash.

Copolymer: 92.88 gms per 900 ml of Distilled water; 50 mls of this solution are used per wash.

Granules : Each granule component is weighed separately in the same beaker.

Order of addition to the washing machine :

With stirring the ingredients are added in following sequence :

1. Silicate (2.0 R)
2. Copolymer (as noted above)
3. Granules

Stirring is stopped here (to avoid sudsing during surfactant addition).

4. LAS+AS+Cationic solution
5. AE solution

Stirring for 15 sec.

Hardness : No extra hardness are added on top of tap water hardness.

Load : 2.4 kg of load of following composition are typically used,

Cotton dress shirt (1)
Worn T-shirts (from panelists) (3)
Large T-shirts (11)
DKPE T shirt (1)
P/C Short pants (2)

Premixing of CocoMeEO10 Cationic with LAS + AS

Soils	Test I	Test II	Average
In-used collar	0.48	-0.02	0.23
Insert collar	0.02	0.06	0.04
Cuffs	0.33	0.25	0.29
Dinginess	-0.28	0.11	-0.09
BODY SOIL (Ave.)	0.14	0.10	0.12
Clay C/D	0.75 S	0.44	0.60
Clay DKPE	0.27	-0.47	-0.10
BUILDER SENSITIVE SOIL (Ave.)	0.51	-0.02	0.25
Spinach	0.00	0.33	0.17
Coffee	0.38	0.82 S	0.60
BLEACH SENSITIVE SOIL (Ave.)	0.19	0.58	0.39
Meat sauce	0.05	0.96 S	0.51
Curry	0.42	0.91 S	0.67
Bacon oil	0.23	-0.07	0.08
DMO	0.31	-0.13	0.09
SURFACTANT SENSITIVE SOIL (Ave.)	0.25	0.42	0.34
Average (including Socks)	0.2	0.26	0.23
Socks (before)	0.14	0.23	0.19
Socks (after)	-0.19	0.48 S	0.15
Socks (delta)	-0.32	0.25	-0.04

TEST RESULTS II

Premixing of CoCoMeE10 Cationic With LAS Alone

Soils	
In-used collar	0.17
Insert collar	-0.52
Cuffs	0.19
Dinginess	-0.17

C45E7 : A C_{14-15} predominantly linear primary alcohol condensed with an average of 7 moles of ethylene oxide

C25E3 : A C_{12-15} branched primary alcohol condensed with an average of 3 moles of ethylene oxide

C25E5 : A C_{12-15} branched primary alcohol condensed with an average of 5 moles of ethylene oxide

CocoEO2 : $R_1.N^+(CH_3)(C_2H_4OH)_2$ with R_1 = C_{12} - C_{14}

Soap : Sodium linear alkyl carboxylate derived from an 80/20 mixture of tallow and coconut oils.

TFAA : C_{16}-C_{18} alkyl N-methyl glucamide

TPKFA : C12-C14 topped whole cut fatty acids

STPP : Anhydrous sodium tripolyphosphate

Zeolite A : Hydrated Sodium Aluminosilicate of formula $Na_{12}(AlO_2SiO_2)_{12}.27H_2O$ having a primary particle size in the range from 0.1 to 10 micrometers

NaSKS-6 : Crystalline layered silicate of formula δ -$Na_2Si_2O_5$

Citric acid : Anhydrous citric acid

Carbonate : Anhydrous sodium carbonate with a particle size between 200µm and 900µm

Bicarbonate : Anhydrous sodium bicarbonate with a particle size distribution between 400µm and 1200µm

Silicate : Amorphous Sodium Silicate (SiO_2:Na_2O; 2.0 ratio)

Sodium sulfate : Anhydrous sodium sulfate

Citrate : Tri-sodium citrate dihydrate of activity 86.4% with a particle size distribution between 425µm and 850 µm

MA/AA : Copolymer of 1:4 maleic/acrylic acid, average molecular weight 70,000.

CMC : Sodium carboxymethyl cellulose

Protease : Proteolytic enzyme of activity 4KNPU/g sold by NOVO Industries A/S under the tradename Savinase

Alcalase : Proteolytic enzyme of activity 3AU/g sold by NOVO Industries A/S

Cellulase : Cellulytic enzyme of activity 1000 CEVU/g sold by NOVO Industries A/S under the tradename Carezyme

Amylase : Amylolytic enzyme of activity 60KNU/g sold by NOVO Industries A/S under the tradename Termamyl 60T

Lipase : Lipolytic enzyme of activity 100kLU/g sold by NOVO Industries A/S under the tradename Lipolase

Endolase : Endoglunase enzyme of activity 3000 EVU/g sold by NOVO Industries A/S

PB4 : Sodium perborate tetrahydrate of nominal formula $NaBO_2.3H_2O.H_2O_2$

PB1 : Anhydrous sodium perborate bleach of nominal formula $NaBO_2.H_2O_2$

Percarbonate : Sodium Percarbonate of nominal formula $2Na_2CO_3.3H_2O_2$

NOBS : Nonanoyloxybenzene sulfonate in the form of the sodium salt.

TAED : Tetraacetylethylenediamine

NACA-OBS : (6 nonanamido caproyl) oxybenzene sulphonate

DTPMP : Diethylene triamine penta (methylene phosphonate), marketed by Monsanto under the Trade name Dequest 2060

Co Catalyst : Pentaamine acetate cobalt (III) salt

Mn Catalyst : $Mn^{IV}_2(m\text{-}O)_3$(1,4,7-trimethyl-1,4,7-triazacyclononane)$_2$-$(PF_6)_2$as described in U.S.pat. nos 5 246 621 and 5 244 594

Photoactivated : Sulfonated Zinc Phthalocyanine encapsulated in bleach dextrin soluble polymer

Brightener 1 : Disodium 4,4'-bis(2-sulphostyryl)biphenyl

Brightener 2 : Disodium 4,4'-bis(4-anilino-6-morpholino-1.3.5-triazin-2-yl)amino) stilbene-2:2'-disulfonate.

HEDP : 1,1-hydroxyethane diphosphonic acid

PVNO : Polyvinylpyridine N-oxide

PVPVI : Copolymer of polyvinylpyrrolidone and vinylimidazole

SRA 1 : Sulfobenzoyl end capped esters with oxyethylene oxy and terephthaloyl backbone

SRA 2 : Diethoxylated poly (1, 2 propylene terephthalate) short block polymer

Silicone antifoam : Polydimethylsiloxane foam controller with siloxane-oxyalkylene copolymer as dispersing agent with a ratio of said foam controller to said dispersing agent of 10:1 to 100:1.

In the following Examples all levels are quoted as % by weight of the composition.

EXAMPLE I

The following detergent formulations according to the present invention are prepared, where A and C are phosphorus-containing detergent compositions and B is a zeolite-containing detergent composition.

	A	B	C
Blown Powder			
STPP	24.0	-	24.0
Zeolite A	-	24.0	-
C45AS	8.0	5.0	11.0
MA/AA	2.0	4.0	2.0
LAS	6.0	8.0	11.0
TAS	1.5	-	-

Sodium sulfate	0.0	5.0	1.0
LAS	2.0	2.0	-
CocoMeEO2*	1.0	1.0	1.5
DTPMP	0.4	0.5	-
CMC	0.4	0.4	-
MA/AA	4.0	4.0	-
Agglomerates			
C45AS	-	-	9.0
LAS	6.0	5.0	2.0
TAS	3.0	2.0	-
Silicate	4.0	4.0	-
Zeolite A	10.0	15.0	13.0
CMC	-	-	0.5
MA/AA	-	-	2.0
Carbonate	9.0	7.0	7.0
Spray On			
Perfume	0.3	0.3	0.5
C45E7	4.0	4.0	4.0
C25E3	2.0	2.0	2.0
Dry additives			
MA/AA	-	-	3.0
NaSKS-6	-	-	12.0
Citrate	10.0	-	8.0
Bicarbonate	7.0	3.0	5.0
Carbonate	8.0	5.0	7.0
PVPVI/PVNO	0.5	0.5	0.5
Alcalase	0.5	0.3	0.9
Lipase	0.4	0.4	0.4
Amylase	0.6	0.6	0.6
Cellulase	0.6	0.6	0.6
Silicone antifoam	5.0	5.0	5.0
Dry additives			
Sodium sulfate	0.0	9.0	0.0
Balance (Moisture &			
Miscellaneous)	To: 100.0	100.0	100.0

Density (g/litre)	700	700	850

*The bis-AQA-1 (CocoMeEO2) surfactant of the Example may be replaced by an equivalent amount of any of surfactants bis-AQA-2 through bis-AQA-22 or other bis-AQA surfactants herein.

EXAMPLE III

The following detergent formulations, according to the present invention are prepared:

	G	H	I
Blown Powder			
Zeolite A	30.0	22.0	6.0
Sodium sulfate	19.0	5.0	7.0
MA/AA	3.0	3.0	6.0
LAS	13.0	11.0	21.0
C45AS	8.0	7.0	7.0
CocoMeEO2*	1.0	1.0	1.0
Silicate	-	1.0	5.0
Soap	-	-	2.0
Brightener 1	0.2	0.2	0.2
Carbonate	8.0	16.0	20.0
DTPMP	-	0.4	0.4
Spray On			
C45E7	1.0	1.0	1.0
Dry additives			
PVPVI/PVNO	0.5	0.5	0.5
Protease	1.0	1.0	1.0
Lipase	0.4	0.4	0.4
Amylase	0.1	0.1	0.1
Cellulase	0.1	0.1	0.1
NOBS	-	6.1	4.5
PB1	1.0	5.0	6.0
Sodium sulfate	-	6.0	-
Balance (Moisture & Miscellaneous) To:	100	100	100

*The bis-AQA-1 (CocoMeEO2) surfactant of the Example may be replaced by an equivalent amount of any of surfactants bis-AQA-2 through bis-AQA-22 or other bis-AQA surfactants herein.

EXAMPLE IV

The following high density and bleach-containing detergent formulations, according to the present invention are prepared:

	I	K	L
Blown Powder			
Zeolite A	15.0	15.0	15.0
Sodium sulfate	0.0	5.0	0.0
LAS	3.0	3.0	3.0
CocoMeEO2*	1.0	1.5	1.5
DTPMP	0.4	0.4	0.4
CMC	0.4	0.4	0.4
MA/AA	4.0	2.0	2.0
Agglomerates			
LAS	5.0	5.0	5.0
TAS	2.0	2.0	1.0
Silicate	3.0	3.0	4.0
Zeolite A	8.0	8.0	8.0
Carbonate	8.0	8.0	4.0
Spray On			
Perfume	0.3	0.3	0.3
C45E7	2.0	2.0	2.0
C25E3	2.0	-	-
Dry additives			
Citrate	5.0	-	2.0
Bicarbonate	-	3.0	-
Carbonate	8.0	15.0	10.0
TAED	6.0	2.0	5.0
PB1	13.0	7.0	10.0
Polyethylene oxide of MW 5,000,000	-	-	0.2

Bentonite clay	-	-	10.0
Protease	1.0	1.0	1.0
Lipase	0.4	0.4	0.4
Amylase	0.6	0.6	0.6
Cellulase	0.6	0.6	0.6
Silicone antifoam	5.0	5.0	5.0
Dry additives			
Sodium sulfate	0.0	3.0	0.0
Balance (Moisture & Miscellaneous) To:	100.0	100.0	100.0
Density (g/litre)	850	850	850

*The bis-AQA-1 (CocoMeEO2) surfactant of the Example may be replaced by an equivalent amount of any of surfactants bis-AQA-2 through bis-AQA-22 or other bis-AQA surfactants herein.

EXAMPLE V

The following high density detergent formulations according to the present invention are prepared:

	M	N
Blown Powder		
Zeolite A	2.5	2.5
Sodium sulfate	1.0	1.0
CocoMeEO2*	1.5	1.5
Agglomerate		
C45AS	11.0	14.0
Zeolite A	15.0	6.0
Carbonate	4.0	8.0
MA/AA	4.0	2.0
CMC	0.5	0.5
DTPMP	0.4	0.4
Spray On		
C25E5	5.0	5.0
Perfume	0.5	0.5
Dry Adds		
HEDP	0.5	0.3

SKS 6	13.0	10.0
Citrate	3.0	1.0
TAED	5.0	7.0
Percarbonate	15.0	15.0
SRA 1	0.3	0.3
Protease	1.4	1.4
Lipase	0.4	0.4
Cellulase	0.6	0.6
Amylase	0.6	0.6
Silicone antifoam	5.0	5.0
Brightener 1	0.2	0.2
Brightener 2	0.2	-
Balance (Moisture & Miscellaneous) To:	100	100
Density (g/litre)	850	850

*The bis-AQA-1 (CocoMeEO2) surfactant of the Example may be replaced by an equivalent amount of any of surfactants bis-AQA-2 through bis-AQA-22 or other bis-AQA surfactants herein.

EXAMPLE VI

The following liquid detergent formulations, according to the present invention are prepared:

	O	P	Q	R	S
LAS	10.0	13.0	9.0	2.0	15.0
C25AS	4.0	1.0	2.0	8.0	10.0
C25E3S	1.0	-	-	3.0	-
C25E7	5.5	7.0	11.0	2.0	-
TFAA	-	-	-	3.5	-
CocoMeEO2*	0.5	1.0	2.0	1.5	3.0
TPKFA	2.0	-	13.0	2.0	-
Rapeseed fatty acids	-	-	-	5.0	-
Citric acid	2.0	3.0	1.0	1.5	1.0
Dodecenyl/tetradecenyl succinic acid	12.0	10.0	-	-	15.0

The composition is prepared by mixing the bis-AQA and LAS, then the hexylene glycol and alcohol ethoxylate, together at 54°C (130°F) for 1/2 hour. This mixture is then cooled to 29°C (85°F) whereupon the remaining components are added. The resulting composition is then stirred at 29°C (85°F) for another 1/2 hour.

The resulting composition is a stable anhydrous heavy duty liquid laundry detergent which provides excellent stain and soil removal performance when used in normal fabric laundering operations.

The following Examples A and B further illustrate the invention herein with respect to a laundry bar.

EXAMPLE VIII

Ingredient	% (wt.)		Range (% wt.)
	A	B	
C_{12}-C_{18} Sulfate	15.75	13.50	0-25
LAS	6.75	---	0-25
Na_2CO_3	15.00	3.00	1-20
DTPP[1]	0.70	0.70	0.2-1.0
Bentonite clay	---	10.0	0-20
Sokolan CP-5[2]	0.40	1.00	0-2.5
bis-AQA-1[3]	2.0	0.5	0.15-3.0
TSPP	5.00	0	0-10
STPP	5.00	15.00	0-25
Zeolite	1.25	1.25	0-15
Sodium laurate	---	9.00	0-15
SRA-1	0.30	0.30	0-1.0
Protease enzyme	---	0.12	0-0.6
Amylase enzyme	0.12	---	0-0.6
Lipase enzyme	---	0.10	0-0.6
Cellulase enzyme	---	0.15	0-0.3
------Balance[4]---------			

[1]Sodium diethylenetriamine penta (phosphonate)

[2]Sokolan CP-5 is maleic-acrylic copolymer

3bis-AQA-1 may be replaced by an equivalent amount of bis-AQA surfactants bis-AQA2 through bis-AQA-22 or other bis-AQA surfactants herein.

[4]Balance comprises water (2% to 8%, including water of hydration), sodium sulfate, calcium carbonate, and other minor ingredients.

EXAMPLE IX

The following hand wash detergent formulations, according to the present invention, are prepared by mixing the ingredients together in the percentage weight amounts as indicated below.

	A	B	C	D
LAS	15.0	12.0	15.0	12.0
TFAA	1.0	2.0	1.0	2.0
C25E5	4.0	2.0	4.0	2.0
AQA-9*	2.0	3.0	3.0	2.0
STPP	25.0	25.0	15.0	15.0
MA/AA	3.0	3.0	3.0	3.0
CMC	0.4	0.4	0.4	0.4
DTPMP	1.0	1.6	1.6	1.6
Carbonate	2.0	2.0	5.0	5.0
Bicarbonate	-	-	2.0	2.0
Silicate	7.0	7.0	7.0	7.0
Protease	1.0	-	1.0	1.0
Amylase	0.4	0.4	0.4	-
Lipase	0.12	0.12	-	0.12
Photoactivated bleach	0.3	0.3	0.3	0.3
Sulfate	2.2	2.2	2.2	2.2
PB1	4.0	5.4	4.0	2.3
NOBS	2.6	3.1	2.5	1.7
SRA 1	0.3	0.3	0.7	0.3
Brightener 1	0.15	0.15	0.15	0.15
Balance misc./water to 100	100.0	100.0	100.0	100.0

AQA-9*; May be replaced by any AQA surfactant described herein. Preferred AQA surfactants for use in this example are those with from 10 to 15 ethoxy groups; for example AQA-10, AQA-16.

typically in the form of granules or gels. If used in gel form, various gelling agents known in the literature can be employed.

The following Example further illustrates the invention herein with respect to a hand dishwashing liquid.

EXAMPLE X

Ingredient	% (wt.)	Range (% wt.)
bis-AQA-1*	2.0	0.15-3
Ammonium C_{12-13} alkyl sulfate	7.0	2-35
C_{12}-C_{14} ethoxy(1) sulfate	20.5	5-35
Coconut amine oxide	2.6	2-5
Betaine/Tetronic 704®	0.87-0.10	0-2 (mix)
Alcohol Ethoxylate C_8E_{11}	5.0	2-10
Ammonium xylene sulfonate	4.0	1-6
Ethanol	4.0	0-7
Ammonium citrate	0.06	0-1.0
Magnesium chloride	3.3	0-4.0
Calcium chloride	2.5	0-4.0
Ammonium sulfate	0.08	0-4.0
Hydrogen peroxide	200 ppm	0-300 ppm
Perfume	0.18	0-0.5
Maxatase® protease	0.50	0-1.0
Water and minors	----------Balance----------	

*May be replaced by bis-AQA-2 - bis-AQA-22 or other bis-AQA surfactants herein.
**Cocoalkyl betaine.

The following Examples A and B further illustrate the invention herein with respect to a granular phosphate-containing automatic dishwashing detergent.

EXAMPLE XI

	% by weight of active material	
INGREDIENTS	A	B
STPP (anhydrous)[1]	31	26

Sodium Carbonate	22	32
Silicate (% SiO_2)	9	7
Surfactant (nonionic)	3	1.5
NaDCC Bleach[2]	2	--
bis-AQA-1*	0.5	1.0
Sodium Perborate	--	5
TAED	--	1.5
Savinase (Au/g)	0.1	0.04
Termamyl (Amu/g)	0.5	0.5
Sulfate	25	25
Perfume/Minors	to 100%	to 100%

[1]Sodium tripolyphosphate

[2]Sodium dichlorocyanurate

*The bis-AQA-1 surfactant can be replaced by bis-AQA-2 through bis-AQA-22.

EXAMPLE XII

The following Examples further illustrate the invention herein with respect to a liquid-gel automatic dishwashing or other detergent with increased levels of stain removal benefits.

% by weight of active material

INGREDIENTS	A	B	C	D	E	F	G
Citric acid	16.5	16.5	16.5	16.5	16.5	10	10
Na2CO3/K2C03	--	--	25	25	25	15	15
bis-AQA-1*	0.5	0.7	0.5	0.5	0.4	0.6	0.7
Dispersant (480N)	4	4	4	4	4	4	4
HEDP/SS-EDDS	2	2	0-2	2	2	1.5	1.5
Benzoyl Peroxide	8	8	8	8	8	1.5	1.5
Butylated Hydroxy Toluene (BHT)	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Surfactant	2.5	2.5	1.5	1.5	1.5	1.5	1.5
Boric Acid	--	4	4	4	4	4	4
Sorbitol	--	6	6	6	6	6	6
Savinase 24L	--	--	0.2	0.53	--	0.53	--
Slurried Savinase 16L	--	--	--	--	0.53	--	0.53

compositions advantageously provide improved detergency performance (especially in a fabric laundering context) over a broader range of water hardness than do the cationic surfactants herein used individually. It has now been discovered that shorter EO cationics (e.g., EO2) improve the cleaning performance of anionic surfactants in soft water, whereas higher EO cationics (e.g., EO15) act to improve hardness tolerance of anionic surfactants, thereby improving the cleaning performance of anionic surfactants in hard water. Conventional wisdom in the detergency art suggests that builders can optimize the performance "window" of anionic surfactants. Until now, however, broadening the window to encompass essentially all conditions of water hardness has been impossible to achieve.

EXAMPLE XIV

This Example illustrates perfume formulations (A-C) made in accordance with the invention for incorporation into any of the foregoing Examples of bis-AQA-containing detergent compositions. The various ingredients and levels are set forth below.

	(% Weight)		
Perfume Ingredient	A	B	C
Hexyl cinnamic aldehyde	10.0	-	5.0
2-methyl-3-(para-tert-butylphenyl)-propionaldehyde	5.0	5.0	-
7-acetyl-1,2,3,4,5,6,7,8-octahydro-1,1,6,7-tetramethyl naphthalene	5.0	10.0	10.0
Benzyl salicylate	5.0	-	-
7-acetyl-1,1,3,4,4,6-hexamethyltetralin	10.0	5.0	10.0
Para-(tert-butyl) cyclohexyl acetate	5.0	5.0	-
Methyl dihydro jasmonate	-	5.0	-
Beta-napthol methyl ether	-	0.5	-
Methyl beta-naphthyl ketone	-	0.5	-
2-methyl-2-(para-iso-propylphenyl)-propionaldehyde	-	2.0	-
1,3,4,6,7,8-hexahydro-4,6,6,7,8,8-hexamethyl-cyclopenta-gamma-2-benzopyrane	-	9.5	-
Dodecahydro-3a,6,6,9a-tetramethylnaphtho-[2,1b]furan	-	-	0.1
Anisaldehyde	-	-	0.5
Coumarin	-	-	5.0

Maxamyl/Termamy	0.54	--	0.31	1.0	1.0	--	--
Slurried Termamyl	--	0.54	--		--	0.31	0.31
Water	----------			Balance		----------	

*The bis-AQA-1 (CocoMeEO2) surfactant of the Example may be replaced by an equivalent amount of any of surfactants bis-AQA-2 through bis-AQA-22 or other bis-AQA surfactants herein.

Various gelling agents such as CMC and clays, can be used in the compositions to provide varying degrees of viscosity or rigidity, according to the desires of the formulator.

EXAMPLE XIII

The following illustrates mixtures of bis-AQA surfactants which can be substituted for the bis-AQA surfactants listed in any of the foregoing Examples. As disclosed hereinabove, such mixtures can be used to provide a spectrum of performance benefits and/or to provide cleaning compositions which are useful over a wide variety of usage conditions. Preferably, the bis-AQA surfactants in such mixtures differ by at least 1.5, preferably 2.5-20, total EO units. Ratio ranges (wt.) for such mixtures are typically 10:1-1:10. Non-limiting examples of such mixtures are as follows.

Components	Ratio (wt.)
bis-AQA-1 + bis-AQA-5	1:1
bis-AQA-1 + bis-AQA-10	1:1
bis-AQA-1 + bis-AQA-15	1:2
bis-AQA-1 + bis-AQA-5 + bis-AQA-20	1:1:1
bis-AQA-2 + bis-AQA-5	3:1
bis-AQA-5 + bis-AQA-15	1.5:1
bis-AQA-1 + bis-AQA-20	1:3

Mixtures of the bis-AQA surfactants herein with the corresponding cationic surfactants which contain only a single ethoxylated chain can also be used. Thus, for example, mixtures of ethoxylated cationic surfactants of the formula $R^1N^+CH_3[EO]_x[EO]_yX^-$ and $R^1N^+(CH_3)_2[EO]_zX^-$, wherein R^1 and X are as disclosed above and wherein one of the cationics has (x+y) or z in the range 1-5 preferably 1-2 and the other has (x+y) or z in the range 3-100, preferably 10-20, most preferably 14-16, can be used herein. Such

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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIVISIÓN DE NUEVAS CREACIONES

2020
Bogotá, D.C.,

Doctora (señora):
Ramiro Castro Duque

Oficio N° 3627

REFERENCIA:

Radicación No.	00-43128.
Trámite	002.
Evento	001.
Actuación	430.
Folios	003.

Realizado el examen de patentabilidad de la presente solicitud según el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, "**art. 45**.- *Si la oficina nacional competente encontrara que la invención no es patentable o que no cumple con alguno de los requisitos establecidos en esta Decisión para la concesión de la patente, lo notificará al solicitante. Este deberá responder a la notificación dentro del plazo de sesenta días contados a partir de la fecha de la notificación. Este plazo podrá ser prorrogado por una sola vez por un período de treinta días adicionales.*
Cuando la oficina nacional competente estimara que ello es necesario para los fines del examen de patentabilidad, podrá notificar al solicitante dos o más veces conforme al párrafo precedente.
Si el solicitante no respondiera a la notificación dentro del plazo señalado, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, la oficina nacional competente denegará la patente." se notifica el siguiente Concepto Técnico:

1. DOCUMENTOS ESTUDIADOS

Para el presente estudio se tuvo en cuenta el capítulo descriptivo, folios 94 A 111 y reivindicaciones 1 a 9, folios 112 a 114 anexados como respuesta al requerimiento formal; lo cual fue aceptado dado que éste no implica una ampliación de la solicitud originalmente presentada conforme lo establece el artículo 34 de la decisión 486 de la Comisión de la Comunidad Andina "**art. 34**.- *El solicitante de una patente podrá pedir que se modifique la solicitud en cualquier momento del trámite. La modificación no podrá implicar una ampliación de la protección que correspondería a la divulgación contenida en la solicitud inicial.*
Del mismo modo, se podrá pedir la corrección de cualquier error material.".

- Se acepta reivindicación de prioridad US 09/332.773 del 14 de junio de 1999.

2. OBJETO DE LA INVENCIÓN

- Título: Composición líquida detergente para lavado que contiene tensioactivo etoxilado de amina cuaternaria.

- La invención consiste en:

Reivindicaciones 1 a 5: Una composición detergente para lavado estructurada, líquida, estable, que es particularmente efectiva para retirar suciedades aceitosas de las telas que comprende en peso:

a) de 10 a 20% de un tensioactivo aniónico de sulfonato de alquil benceno lineal
b) de 0 a 10% de un tensioactivo aniónico de sulfato de éter alquilo,
c) de 5 a 30% de un contstructor que contiene un metal alcalino fosforoso,
d) de 2 a 15% de carbonato de sodio; donde la cantidad total de componentes (c) más (d) en la composición detergente es mínimo 10%,

e) de 0,1 a 5% de un tensioactivo catiónico etoxilado de amina cuaternaria que tiene la fórmula estructural que se describe en los folios 112 a 113,
f) el balance es agua.

Dicha composición líquida estructurada está libre de tensioactivo no iónico.

Reivindicaciones 6 a 9: Un método de lavar telas ensuciadas y/o manchadas que comprende: a) formar una solución de lavado acuosa o baño de lavado que contiene una cantidad efectiva de una composición detergente de lavado y b) someter las telas a la acción de lavado con dicha solución.

❖ La clasificación según la IPC correspondiente al objeto de la solicitud es C11D1/65.

3. CLARIDAD DE LA SOLICITUD

De acuerdo a la Decisión 486 de la Comisión de la Comunidad Andina en su Artículo 30.- "*Las reivindicaciones definirán la materia que se desea proteger mediante la patente. Deben ser claras y concisas y estar enteramente sustentadas por la descripción*", en este sentido se anota que en la reivindicación 1 se debería indicar de una manera más precisa que el constructor que contiene el metal alcalino fosforoso es el tripolifosfato de sodio debido a que particularmente todos los ejemplos están enfocados a composiciones que comprenden únicamente dicha sustancia y no otro tipo de sal de fosforosa, de tal manera que el capítulo reivindicatorio contenga materia que esté enteramente sustentada en la descripción.

4. DETERMINACIÓN DEL ESTADO DE LATÉCNICA

❖ La fecha a partir de la cual se realizó la búsqueda de anterioridades corresponde al 13 de junio de 1999.
❖ Con base a lo anterior y la definición dada en el **art. 16.-** "Una invención se considerará nueva cuando no está comprendida en el estado de la técnica.
El estado de la técnica comprenderá todo lo que haya sido accesible al público por una descripción escrita u oral, utilización, comercialización o cualquier otro medio antes de la fecha de presentación de la solicitud de patente o, en su caso, de la prioridad reconocida.
Sólo para el efecto de la determinación de la novedad, también se considerará dentro del estado de la técnica, el contenido de una solicitud de patente en trámite ante la oficina nacional competente, cuya fecha de presentación o de prioridad fuese anterior a la fecha de presentación o de prioridad de la solicitud de patente que se estuviese examinando, siempre que dicho contenido esté incluido en la solicitud de fecha anterior cuando ella se publique o hubiese transcurrido el plazo previsto en el artículo 40.", se realizó la búsqueda de anterioridades en los archivos con que cuenta esta Oficina y se encontró el siguiente documento relacionado con la materia de la presente solicitud:

N°	DOCUMENTO	TÍTULO	FECHA DE PUBLICACIÓN
D1	WO97/43388	Detergent composition	1997-11-20

2.EVALUACIÓN DE LOS REQUISITOS DE PATENTABILIDAD

El artículo 14 de la Decisión 486 de la Comisión de la Comunidad Andina establece que: "Los Países Miembros otorgarán patentes para las invenciones, sean de producto o de procedimiento, en todos los campos de la tecnología , siempre que sean nuevas, tengan nivel inventivo y sean susceptibles de aplicación industrial."

En cumplimiento del artículo 14 de la Decisión 486, se procedió a evaluar los requisitos de novedad, nivel inventivo y aplicación industrial con el fin de establecer la patentabilidad de la invención reivindicada en la solicitud en estudio.

2.1Evaluación del NIVEL INVENTIVO

De acuerdo al **art. 18.-** "*Se considerará que una invención tiene nivel inventivo, si para una persona del oficio normalmente versada en la materia técnica correspondiente, esa invención no hubiese resultado obvia ni se hubiese derivado de manera evidente del estado de la técnica.*", se conceptúa:

D1 afecta el nivel inventivo de la presente solicitud puesto que divulga composiciones que contienen la combinación específica de un tensioactivo aniónica con uno catiónico, donde dichos agentes de superficies se pueden seleccionar de sulfonato de alquil benceno lineal y un alquil sulfato como surfactantes aniónicos. El tensioactivo catiónico puede ser la amina visible en la página 5 de esta anterioridad; y como se puede apreciar en la descripción este tipo de formulaciones pueden contener tripolifosfato de sodio. Lo anterior pone en evidencia el hecho de que ya se habían combinado este tipo de componentes para formar una composición detergente para superficies duras.

Del arte previo y del conocimiento de conjunto de la persona medianamente versada en el oficio es posible derivar que ya se había utilizado en las formulaciones detergentes la combinación de tensioactivos aniónico-catiónico junto con tripolifosfato de sodio donde se encuentra un alto desempeño en la remoción de manchas y suciedad grasosa. Más aún ya se habían utilizado la combinación del sulfonato de alquilbenceno con la amina cuaternaria descrita en la solicitud en estudio.

Con esta información podría cualquier persona con los conocimientos mínimos en este arte llegar a la composición detergente reclamada sin que ello constituya un salto en la formulación de la regla técnica y mucho menos una actividad creadora del hombre que amerite el privilegio solicitado. Por lo anterior, las reivindicaciones 1 a 5 carecerían de nivel inventivo.

Adicionalmente, el método de lavar las telas reivindicado en las cláusulas 6 a 9 no tendría nivel inventivo porque no define ninguna condición o etapa característica diferente a la forma comúnmente utilizada para lavar o limpiar las telas, aún a escala doméstica, ya que, es obvio que si se quiere limpiar tejidos, lo más lógico es que se coloquen en contacto con una solución que tenga propiedades detergentes; por lo que tal como se reivindica no se indican condiciones especiales de aplicación de la composición que lo diferencien de los demás métodos convencionales de limpieza. Por lo anterior, carecería de nivel inventivo.

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta días contados a partir de la fecha de la notificación de la presente comunicación. **En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.**

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2,literal e), del capítulo quinto del título primero de la circular única No. 10 de 2001.

ALIX CARMENZA CÉSPEDES DE VERGEL
Jefe de la División de Nuevas Creaciones.

El anterior requerimiento fue notificado por fijación en lista, de fecha 30 MAR. 2006

CONCEPTO TÉCNICO N° 407 (2006-03-10)	EXAMINADOR TÉCNICO CÓDIGO 202001	EXAMINADOR JURÍDICO CÓDIGO

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SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

RADICACIÓN: **0-43128** EDICTO No. **11912**

LA SECRETARÍA GENERAL AD-HOC
HACE SABER:

Que esta Superintendencia profirió **Resolución** No. **19611** de **26-JUL-2006**. Que el contenido de la parte resolutiva es como sigue: El Superintendente de Industria y Comercio.

RESUELVE

ARTICULO PRIMERO: Negar el privilegio de patente de invención para la solicitud correspondiente a "COMPOSICION LIQUIDA DETERGENTE PARA LAVADO QUE CONTIENE TENSIOACTIVO ETOXILADO DE AMINA CUATERNARIA".

ARTICULO SEGUNDO: Notificar personalmente el contenido de la presente resolución al doctor Ramiro Castro Duque, o a quien haga sus veces, en su calidad de apoderado de Colgate – Palmolive Company., entregándole copia de la misma, advirtiéndole que contra ella procede el recurso de reposición interpuesto ante el Superintendente de Industria y Comercio, al momento de la notificación o dentro de los 5 días hábiles siguientes a ella.

NOTIFÍQUESE Y CUMPLASE
Dada en Bogotá, D.C., a los 26 JUL. 2006

EL SUPERINTENDENTE DE INDUSTRIA Y COMERCIO,

JAIRO RUBIO ESCOBAR

Para notificar a los interesados, se fija el presente EDICTO en lugar visible al público en la SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO, por el término de (10) diez días hábiles contados a partir de las 8:30 a.m. de hoy.

Secretaría General Ad-Hoc **10-AGO-2006** Este edicto se desfija hoy **24-AGO-2006** a las cinco (5:00 p.m.)
Secretaría General Ad-Hoc
EDICTO No. **11912**