

Señor

SUPERINTENDENTE DE INDUSTRIA Y COMERCIO

DIVISION DE NUEVAS CREACIONES

E _____ S _____

SUPERINDUSTRIA Y COMERCIO

Radicacion : 0000953 0000001

Folios: 50

Fecha (VND): 2001-02-09 16:28:51

Tramite : 002 PATENTES O : REGISTRO/ 329 COMPLEMEN

Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

Re P1.-UNILEVER N.V. Solicitud de Patente de Invención
para "COMPOSICIONES EN BARRA DE ALTA
RETENCIÓN DE HUMEDAD QUE COMPRENDEN BORAX
COMO ESTRUCTURANTE DE AGUA"-Clase A61.-
Expediente numero 00-090.953.-

1 Me refiero a mi solicitud de patente arriba nombrada de fecha 28 de Noviembre de 2000

2 Anexos me permito presentar a usted

- (1) Copia autentica de la primera solicitud de patente presentadas para el invento arriba nombrado **respecto de la cual reclamo prioridad**, a saber la solicitud estadinense numero 09/449 895 de 30 de Noviembre de 1999, junto con su traducción oficial, correspondiente a las legalizaciones y reivindicaciones de dicho documento,
- (2) Copia debidamente autenticada por el Notario Sexto del Circulo de Bogotá, del documento que acredita la calidad de Traductor Oficial del señor Gabriel Rueda Chadid quien elaboro la traducción oficial No LLC-0006-2001 de la solicitud estadinense numero 09/449 895, respecto de la cual se reivindica prioridad en el presente caso,
- (3) Documento que acredita el traspaso que el autor del invento de la referencia hace a favor de mi representando, de sus derechos sobre el mismo, debidamente legalizado hasta por

45 18

el Ministerio de Relaciones Exteriores de Colombia bajo el
numero 004725 de 23 de Enero de 2001, y

- (4) Traducción Oficial No 8203, debidamente legalizada hasta
por el Ministerio de Relaciones Exteriores de Colombia bajo
el numero 214852 de 30 de Enero de 2001, correspondiente
a las legalizaciones de dicho documento de traspaso

3 Ruego a usted tomar atenta nota de lo anterior y proceder de
conformidad

Señor Superintendente,

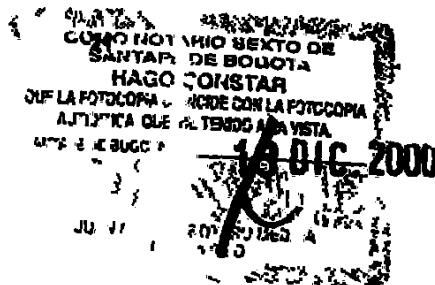


JOSE ANTONIO LLOREDA
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Código 231

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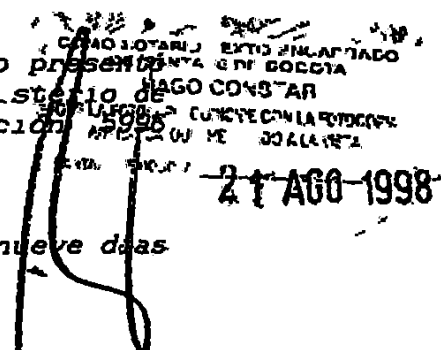
EL SUSCRITO JEFE DEL AREA DE
LEGALIZACIONES DE MINISTERIO DE
RELACIONES EXTERIORES.

HACE CONSTAR



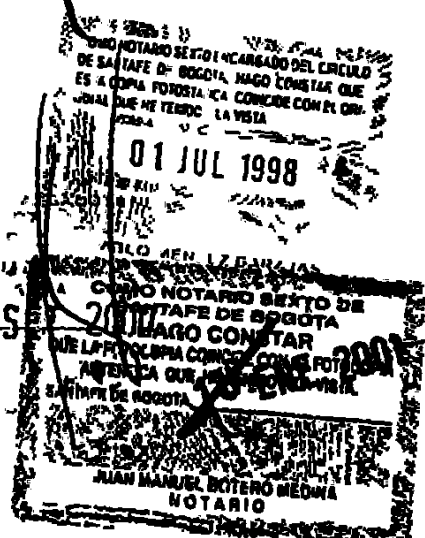
Que el señor Gabriel Rueda se encuentra debidamente registrado ante este Ministerio como trauctor e interprete oficial para los idiomas INGLES -ESPAÑOL, ESPAÑOL - INGLES

Para efectos de ésta certificación el interesado presenta copia autenticada de la certificación del Ministerio de Justicia acerca de la vigencia de la resolución 5986 1982



Dada en Santafé de Bogotá D C a los diez y nueve días (19) del mes de diciembre de 1994

Neibón Sánchez Torres
Jefe Área de Legalizaciones



NST/gtm



Ministerio de Justicia y del Derecho

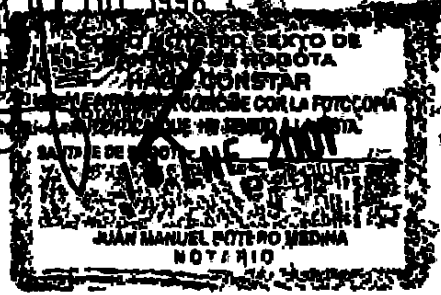
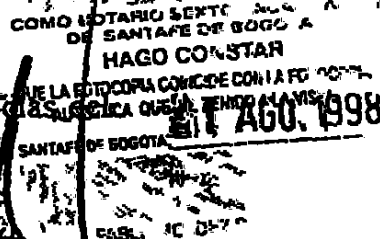
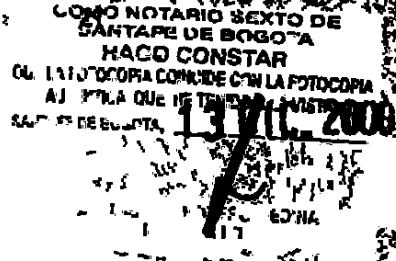
EL SECRETARIO GENERAL DEL MINISTERIO DE
JUSTICIA Y DEL DERECHO

CERTIFICA

Que por Resolución 5996 del 29 de noviembre de 1982 le fue expedida licencia para ejercer funciones de Traductor e Interprete Oficial en los idiomas INGLES-ESPAÑOL ESPAÑOL-INGLES a GABRIEL RUEDA CHADID identificado con la cedula de ciudadanía No 17 124 145 expedida en Bogota Que dicha resolucion se encuentra vigente en la fecha

A solicitud del interesado, en Santafe de Bogota D C a los 17 dias trece (13) meses de noviembre de 1994

JORGE LOIS SABOGAL SABOGAL



TRIBUNAL SUPERIOR DEL DISTRITO JUDICIAL DE SANTAFÉ DE BOGOTÁ
SECRETARÍA GENERAL

LA SUSCRITA SECRETARÍA DEL H TRIBUNAL SUPERIOR DEL DISTRITO JUDICIAL
DE SANTAFÉ DE BOGOTÁ,

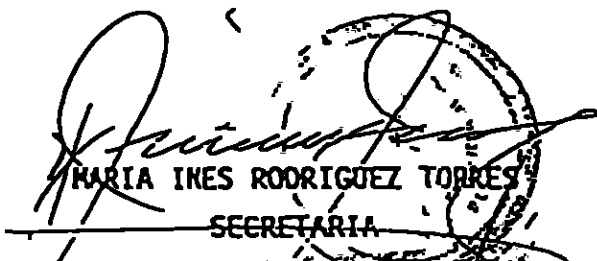
COMO NOTARIO SEXTO DE
SANTAFÉ DE BOGOTÁ
HAGO CONSTAR
QUE LA FOTOCOPIA CONCORDA CON LA FOTOCOPIA
AUTÉNTICA QUE HE TENIDO A LA VISTA
DE BOGOTÁ
13 DIC 2000
JUAN MANUEL GÓTERO MEDINA
NOTARIO

C E R T I F I C A

Que el Acuerdo No 183 de diciembre 3 de 1982 emanado de esta Corporación, por medio del cual dió posesión al señor GABRIEL RUEDA CHADID identificado con Cédula de Ciudadanía número 17 124 145 de Bogotá como TRADUCTOR E INTERPRETE OFICIAL de los idiomas INGLÉS-ESPAÑOL-INGLÉS, en virtud de la Resolución No 5996, se acuerda que sea VIGENTE

COMO NOTARIO SEXTO DE
SANTAFÉ DE BOGOTÁ
HAGO CONSTAR
QUE LA FOTOCOPIA CONCORDA CON LA FOTOCOPIA
AUTÉNTICA QUE HE TENIDO A LA VISTA
DE BOGOTÁ
01 SET 2000
21 AGO 1998

Se expide en Santafé de Bogotá D C , a dieciseis (16) de noviembre
mil novecientos noventa y cuatro (1994)


MARIA INES RODRIGUEZ TORRES
SECRETARIA

COMO NOTARIO SEXTO DE
SANTAFÉ DE BOGOTÁ
HAGO CONSTAR
QUE LA FOTOCOPIA CONCORDA CON LA FOTOCOPIA
AUTÉNTICA QUE HE TENIDO A LA VISTA
DE BOGOTÁ
01 JUL 1998
JUAN MANUEL GÓTERO MEDINA
NOTARIO
08 EN 1999
03 NOV 1998
JUAN MANUEL GÓTERO MEDINA
NOTARIO

CRM /

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Unilever N V 00 090 953

REF LLC-0006-2001 La presente es Traducción Oficial de un documento presentado originalmente en inglés Esta traducción es elaborada por Gabriel Rueda Chadid (Traductor Oficial)

ESTADOS UNIDOS DE AMERICA
A TODOS AQUELLOS QUE LLEGAREN A LEER EL CONTENIDO DEL
PRESENTE DOCUMENTO LES CERTIFICAMOS
DEPARTAMENTO DE LOS ESTADOS UNIDOS

Oficina de Marcas y Patentes de los Estados Unidos

Noviembre 30 del 2000

Se certifica que anexo se encuentra fiel copia de los Registros de la Oficina de Marcas y Patentes de los Estados Unidos correspondientes a los documentos de la patente solicitada y cuya identificación aparece más adelante la cual cumplió con los requerimientos exigidos para que se otorgue una fecha de presentación de acuerdo con los dispuesto en la Sección 35 USC 111

Número de Solicitud 09/449 895
Fecha de presentación Noviembre 30 1999

Por autorización del
COMISIONADO DE MARCAS REGISTRADAS Y PATENTES

N WOODSON

Funcionario Encargado de Certificaciones(Hay firma y sello)


GABRIEL RUEDA CHADID
TRADUCTOR OFICIAL
RESOLUCION 5996 DE NOV 29-03
MINISTERIO DE JUSTICIA

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REMISION DE SOLICITUD DE PATENTE UTILITARIA

(para nuevas solicitudes segun 37 C F R 1 53 (b))

Caso No J6564(C)

Solicitante RACHERLA Uday Shanker

Para COMPOSICIONES EN BARRA RETENEDORAS DE ALTO NIVEL DE HUMEDAD QUE CONTIENEN BORAX COMO ESTRUCTURA HIDRICO

Etiqueta de Correo Expreso No EE 232 842 630 US

Expediente D/N 99-R185-EDG

Fecha de Colocación Noviembre 30 1998

Para Assistant Commissioner for Patents

Box Patent Application

Washington D C 20231

ELEMENTOS DE LA SOLICITUD

- 1 [X] Calculo de Derechos (Casilla 13) y Autorización (se adjuntan copias en triplicado de este formato)
- 2 [X] Especificaciones y Reivindicaciones - Total 36 páginas
- 4 [X] Declaración No Legalizada

PARTES QUE ACOMPAÑAN A LA SOLICITUD

- 9 [X] Dos (2) Recibos de Devolución
- 13 [X] DERECHOS DE PRESENTACION (incluyendo reivindicaciones introducidas o canceladas por Modificaciones Preliminares) según el siguiente calculo

REIVINDICACIONES				
PARA	NUMERO DE PRESENTACION	NUMERO EXTRA	VALORES	DERECHOS BASICOS
				\$760 00

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SA

Total Reivindicaciones	6 - 20		X \$18 00	
Reivindicaciones Independientes	1 - 3		X \$78 00	
Reivindicaciones Múltiples	Si	No	X \$260 00	
TOTAL DE DERECHOS DE PRESENTACION				\$ 780 00

14 [x] Se cobran \$780 00 que se depositan en la Cuenta No 12-1155 Se adjunta copias en triplicado de esta comunicación

15 [X] El Comisionado está autorizado para cobrar derechos adicionales según se requiera incluyendo derechos según lo dispone

[X] 37 C F R 1 16

[X] 37 C F R 1 17

[X] 37 C F R 1 18

16 [X] Dirección para Envío de Correspondencia
Unilever Patent Department
45 River Road
Edgewater New Jersey 07020

Atentamente

Ronald A Koatz (Firmado)

Abogado de Registros

Registro No 31 774


GABRIEL RUEDA CHADID
TRADUCTOR OFICIAL
RESOLUCION 5986 DE NOV 29-83
MINISTERIO DE JUSTICIA

528

REIVINDICACIONES

J6584(C)

1 Una composición de barra para el aseo personal no enzimática que comprende

(a) 30% al 70% por peso de un surfactante que se selecciona a partir del grupo conformado por jabón de ácidos grasos surfactante aniónico distintos del jabón surfactante anfotérico surfactante no iónico y sus mezclas

(b) 0 1% a 25% por peso de un compuesto de borato

(c) aproximadamente 20% por peso a 60% por peso

donde la mencionada barra presenta una dureza que se expresa como valor de penetración inferior a 8 o igual a este número y que se mide de acuerdo con una prueba realizada con un penetrómetro

donde la mencionada barra se elabora aplicando un paso en el cual los ingredientes utilizados para formar dicha barra se funden y luego se estampan

2 Una composición de acuerdo con la reivindicación 1 donde el sistema de surfactante es de 30-60% de la composición de la barra

3 Una composición de acuerdo con la reivindicación 1 donde el jabón comprende por lo menos el 50% del sistema de surfactante

4 Una composición de acuerdo con la reivindicación 1 donde el jabón de ácidos grasos comprende menos del 30% del sistema de surfactante

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5 Una composición de acuerdo con la reivindicación 1 donde la barra tiene una dureza que se expresa como valor de penetración inferior o igual a 7

6 Una composición de acuerdo con la reivindicación 1 donde la barra tiene una dureza que se expresa como valor de penetración de 4-8


GABRIEL RUEDA CHADID
TRADUCTOR OFICIAL
RESOLUCION 3996 DE NOV 29-83
MINISTERIO DE JUSTICIA

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DECLARACION COMBINADA DE SOLICITUD DE PATENTE Y PODER DE REPRESENTACION (Incluye Referencia a las Solicitudes Internacionales PCT)

EXPEDIENTE No J6564(C)

En mi condición de inventor cuyo nombre aparece al final del presente documento declaro que

Mi lugar de residencia dirección postal y ciudadanía son los que se expresan más adelante al pie de mi nombre

Considero que soy el original primero y único inventor (cuando aparezca tan solo un nombre en la lista a continuación) o el primero original y conjunto inventor (si aparece una serie de nombres en la lista) del asunto que se reivindique y por el cual se tramita patente sobre el invento titulado

COMPOSICIONES DE BARRA RETENEDORAS DE ALTO NIVEL DE HUMEDAD QUE COMPRENDEN EL BORAX COMO ESTRUCTURANTE HIDRICO
la especificación a la que se hace referencia

X. se adjunta al presente documento

PODER DE REPRESENTACION En mi condición de inventor nombro a los siguientes apoderados legales y/o agentes para que tramiten la presente solicitud y realicen todas las gestiones ante la Oficina de Marcas y Patentes en relación con tales diligencias (Indicar nombre y número de registro)

James J Farrell	Reg No 26 162	Ronald A Koatz	Reg No 31 774
Milton L Hoing	Reg No 28 817	Gerard J McGowan Jr	Reg No 29 412
Rimma Mitelman	Reg No 34 396	Neil Y Gilbert	Reg No 35 156
Matthew Boxer	Reg No 28 495	Edward A Squillante	Reg No 38 319
Alan A Bomstein	Reg No 40 919		


GABRIEL RUEDA CHADID
TRADUCTOR OFICIAL
RESOLUCIO 1996 DE NOV 29-82
MINISTERIO DE JUSTICIA

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Enviar Correspondencia a

Nos telefónicos directos

UNILEVER

(nombre y No telefónico)

Patent Dept

James J Farrell

45 River Road

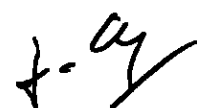
(201) 943-7100

Edgewater NJ 07020

Nombre Completo del Inventor 201	<u>Apellido</u> RACHERLA	<u>Primer Nombre</u> UDAY	<u>SEGUNDO NOMBRE</u> SHANKER
Residencia y Ciudadanía	<u>Ciudad</u> WEST CALDWELL	<u>Estado o País</u> NEW JERSEY	<u>País de Ciudadanía</u> INDIA
Dirección Postal	<u>Dirección Postal</u> 5 WHITAKER PLACE	<u>Ciudad</u> WEST CALDWELL	<u>Estado y Código/País</u> NEW JERSEY 07006

La anterior es Traducción Oficial de un documento presentado originalmente en inglés Esta traducción fue realizada por GABRIEL RUEDA CHADID (Traductor Oficial) Resolución 5996 del Minijusticia por lo cual estampo mi Sello y Firmo

Bogotá D C Enero 25 del 2001


GABRIEL RUEDA CHADID
TRADUCTOR OFICIAL
RESOLUCION 5996 DE NOV 29-82
MINISTERIO DE JUSTICIA

**Certifying Officer**



A

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UTILITY PATENT APPLICATION TRANSMITTAL
(for new applications under 37 C.F.R. § 1.53(b))

Case No. J8584(C)
Applicant: RACHERLA, Uday Shanker
For HIGH MOISTURE RETAINING BAR COMPOSITIONS COMPRISING
BORAX AS WATER STRUCTURANT
Express Mail Label No. EE 232 842 830 US
Attorney D/N 99-R185-EDG
Date Deposited November 30, 1999

To Assistant Commissioner for Patents
Box Patent Application
Washington, D.C. 20231

APPLICATION ELEMENTS

- 1 ☒ Fee Calculation (Box 13) and Authorization (Triplicate copies of this form are enclosed)
2 ☒ Specification and Claims 36 Total Pages
3 ☐ <Formal or Informal> Drawings () Total Sheets
4 ☒ Unexecuted Declaration
5 ☐ Nucleotide and/or Amino Acid Sequence Submission (if applicable, all necessary)
a. ☐ Computer Readable Copy
b. ☐ Paper copy (identical to computer copy)
c. ☐ Statement verifying identity of above copies.

ACCOMPANYING APPLICATION PARTS

6. ☐ Information Disclosure Statement (IDS)/PTO-1449
7. ☐ Copies of IDS citations
8. ☐ Preliminary Amendment
9. ☒ Two (2) Return Receipt Postcards
10. ☐ Certified Copy of Priority Document
11. ☐ The benefit under 35 U.S.C. § 119 is claimed of the filing of
12. ☐ Other
13. ☒ The FILING FEE (including any claims introduced or cancelled by Preliminary Amendment)
is calculated below:

CLAIMS					
FOR	NUMBER FILED		NUMBER EXTRA	RATE	BASIC FEE \$780.00
Total Claims	6 20			X \$ 18.00	
Independent Claims	1 3			X \$ 78.00	
Multiple Claims	<u>Yes</u>	<u>No</u>		X \$280.00	
TOTAL FILING FEE					\$780.00

SBK

14. ☒ Charge \$760.00 to Deposit Acct. #12-1155. Triplicate copies of this letter are enclosed.
15. ☒ The Commissioner is hereby authorized to charge any additional fees, which may be required, including all required fees under
☒ 37 C.F.R. § 1.16;
☒ 37 C.F.R. § 1.17;
☒ 37 C.F.R. § 1.18.
16. ☒ Correspondence Address:
Unilever Patent Department
46 River Road
Edgewater New Jersey 07020

Respectfully submitted,

Ronald A. Kostz
Attorney of Record
Reg. #31 774

RAK/bc
(201) 840-2912

newell
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-2 of 2-

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J6584(C)

Racherla

HIGH MOISTURE RETAINING BAR COMPOSITIONS COMPRISING BORAX AS WATER STRUCTURANT

FIELD OF THE INVENTION

The present invention relates to bar compositions comprising Borax as water structurant, particularly toilet soaps made by milling plodding and stamping wherein the water content of the said bars can be significantly increased and retained in the bar without introducing process related problems and while maintaining good user attributes (e.g hardness rate of wear lather mush etc.) Thus these high moisture retaining bar compositions containing Borax enable significant cost savings because of the replacement of total fatty matter (TFM) with water

BACKGROUND OF THE INVENTION

Conventional toilet soaps are normally composed of predominantly soap (e.g >70% TFM) 10-13% water and the usual additives (e.g soda salt, dyes and perfumes) These bars are typically produced by mixing soap and/or other synthetic surfactants with useful additives followed by milling plodding and stamping

The subject invention is concerned with high moisture containing low cost Borax soap bars, in which soap constitutes the majority if not all of the surfactant system although it will be understood that any surfactant system may be used in place of soap Such bars may also comprise one or more filler materials such as for example talc

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J8584(C)

In low cost toilet soaps, TFM is generally the most expensive ingredient. Since the level of TFM needed for acceptable detergency is much lower than what is used in conventional toilet soaps, it is desirable to replace TFM with water air or cheaper fillers while retaining processability and good bar properties.

As noted one plausible route to reducing cost is to replace TFM with water. Typically however incorporating higher levels of water (e.g. $\geq 15\%$ and particularly $\geq 20\%$) introduces many process and product related problems. Process related problems include production of soft soap masses that are difficult to mill, plod and stamp. Further even if one were to succeed in avoiding process related problems, high levels of water are difficult to retain in the bar due to enhanced water activity indicating free water that will be lost, bringing the equilibrium moisture level down to same level as in conventional soaps. Thus, significant losses of moisture from the bars leads to product related problems such as volume shrinkage, cracking and high rates of wear. Accordingly, moisture retention in a high moisture containing toilet bar requires water to be immobilized, which is difficult to achieve under low cost scenario. For this reason, soap bars sold in many developing countries typically contain only 12-13% moisture.

Unexpectedly, applicants have now discovered that by using required amounts of borate compounds (e.g. Borax, calcium borate, calcium-magnesium borate, sodium calcium borate) and/or boric acid ("puffed Borax" as described in U.S. Patent No. 3,708,425 is generally not the type of boron compound contemplated for use in the bars of the subject invention) as water structurant/filler, it is possible to not only incorporate but also retain much higher amounts of water than previously possible while maintaining good processability and good bar properties.

पुणे जिल्हा : १३००

ကုမ္ပဏီတစ်ခု၏ အသွင်းကုန်များ

Finally none of the prior art teaches Borax as a water structurant which enables not only the incorporation but even the retention of high amounts of water in the bar

The present invention relates to personal wash bar compositions containing surfactant (preferably at least 30% of the surfactant system is anhydrous soap) borate compound greater than 0.1 to 25% preferably 0.5 to 20% more preferably 1 to 18% preferably not including puffed Borax (composition may comprise lower levels of 2% 3% or 4% Borax as well) water at least about 20 to 60% more preferably 20 to 50% more preferably 24 to 40% most preferably 24 to 35% wherein the borate compound preferably without any other binder is structuring water at high levels to provide bar with hardness (expressed as penetration value) of less than or equal to 8 (measured using penetrometer) more preferably less than or equal to 7 more preferably 4-8 and wherein said bars are made by conventional milling plodding and stamping

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- (a) 30% to 70% preferably 40% to 60% by wt. of a surfactant selected from the group consisting of fatty acid soap anionic surfactant other than soap amphoteric surfactants, nonionic surfactant and mixtures thereof
- (b) greater than 0.1% to 25% by wt. of a borate compound (e.g. Borax, calcium borate sodium calcium borate calcium magnesium borate boric acid etc.)
- (c) about 20% to 60% by wt. water

wherein said bar has hardness expressed as penetration value of less than or equal to 8 as measured by penetrometer and

wherein said bar is made using a step in which ingredients used to form said bar are mixed milled plodded and stamped

DETAILED DESCRIPTION OF THE INVENTION

The present invention relates to high moisture containing bars preferably bar soaps containing 30% to 100% of surfactant system of fatty acid soaps and made by conventional milling plodding and stamping route. Generally it is difficult to introduce let alone retain large amounts of water into soap bars (e.g. moisture levels greater than 20% to 60% preferably 20% to 50% more preferably 24% to 40% most preferably 24% to 35%) without introducing process and product related problems.

Unexpectedly applicants have now discovered that borate compounds (including boric acid) can be used to structure water thereby allowing the incorporation as well as retention of large amounts of water in the bar (in place of for example more expensive fatty acid soap) and without need of costly structurants or binders. Thus the borate

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compound or mixture of compounds allows production of bars having hardness expressed as penetration value of less than or equal to 8 preferably less than or equal to 7 more preferably 4 to 6 using penetrometer tests

Each of the ingredients in this composition is set forth with more particularity below

Surfactant

Bar compositions of the invention preferably comprise surfactant system in which at least 30% to 100% more preferably 50% to 100% more preferably 70% to 100% and most preferably the entire 100% of surfactant system comprises fatty acid soap

The balance of the surfactant system may be a surfactant selected from the group of surfactants comprising of anionic surfactant (other than soap) nonionic, amphoteric/zwitterionic and mixtures thereof

The anionic detergent active which may be used may be aliphatic sulfonates such as a primary alkane (e.g. C₈-C₂₂) sulfonate primary alkane (e.g. C₈-C₂₂) disulfonate C₈-C₂₂ alkene sulfonate C₈-C₂₂ hydroxyalkane sulfonate or alkyl glyceryl ether sulfonate (AGS) or aromatic sulfonates such as alkyl benzene sulfonate

The anionic may also be an alkyl sulfate (e.g. C₁₂-C₁₈ alkyl sulfate) or alkyl ether sulfate (including alkyl glyceryl ether sulfates) Among the alkyl ether sulfates are those having the formula



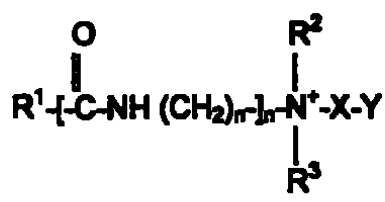
0044995 - 117000

Amphoteric surfactants which may be used in this invention include at least one acid group. This may be a carboxylic or a sulphonic acid group. They include quaternary nitrogen and therefore are quaternary amido acids. They should generally include an

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alkyl or alkenyl group of 7 to 18 carbon atoms. They will usually comply with an overall structural formula:



where R¹ is alkyl or alkenyl of 7 to 18 carbon atoms.

R² and R³ are each independently alkyl hydroxyalkyl or carboxyalkyl of 1 to 3 carbon atoms

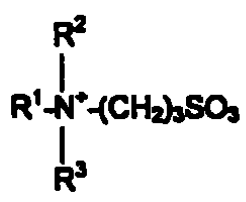
m is 2 to 4

n is 0 to 1

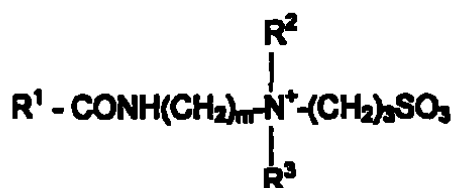
X is alkylene of 1 to 3 carbon atoms optionally substituted with hydroxyl and

Y is -CO₂⁻ or -SO₃⁻

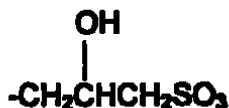
A further possibility is that the amphoteric detergent is a sulphobetaine of formula



or



where m is 2 or 3 or variants of these in which $-(\text{CH}_2)_3 \text{SO}_3$ is replaced by



In these formulae R^1 R^2 and R^3 are as discussed previously

The nonionics which may be used include in particular the reaction products of compounds having a hydrophobic group and a reactive hydrogen atom for example aliphatic alcohols acids amides or alkylphenols with alkylene oxides, especially ethylene oxide either alone or with propylene oxide. Specific nonionic detergent compounds are alkyl (C_6 - C_{22}) phenols ethylene oxide condensates the condensation products of aliphatic (C_6 - C_{18}) primary or secondary linear or branched alcohols with ethylene oxide and products made by condensation of ethylene oxide with the reaction products of propylene oxide and ethylenediamine. Other so-called nonionic detergent compounds include long chain tertiary amine oxides long chain tertiary phosphine oxides and dialkyl sulfoxides.

The nonionic may also be a sugar amide such as a polysaccharide amide. Specifically the surfactant may be one of the lactobionamides described in U S Patent No 5 389,279 to Au et al which is hereby incorporated by reference or it may be one of

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the sugar amides described in Patent No 5 009 814 to Kelkenberg hereby incorporated into the subject application by reference

Examples of cationic detergents are the quaternary ammonium compounds such as alkyldimethylammonium halogenides.

Other surfactants which may be used are described in U S. Patent No 3 723 325 to Parran Jr and "Surface Active Agents and Detergents" (Vol I & II) by Schwartz, Perry & Berch both of which are also incorporated into the subject application by reference

BORATE COMPOUNDS

The compound or compounds of the invention is typically a borate (e.g. Borax) containing boron

More specifically boron does not occur in elemental form in nature but is typically found combined with oxygen sodium and calcium. Traces of boron salts are present in rocks soil and water almost everywhere however large deposits of borate minerals are comparatively rare and exist in only a few places in the earth's crust.

The oldest and most plentiful form of boron known to man is the mineral salt Tincal (sodium tetraborate decahydrate or simply Borax) Other borate minerals that occur naturally and are mined commercially include Colemanite (calcium borate) Hydroboracite (calcium-magnesium borate) Kernite (sodium borate) and Ulexite (sodium-calcium borate)

In addition to being naturally mined materials can be made from others. Thus for example boric acid (Sassolite) can also be chemically made from Tincal (Borax) Kernite as well as many other borate ores.

The boron compound can be any of these borate minerals (e.g sodium tetraborate decahydrate calcium borate calcium-magnesium borate sodium borate etc) boric acid or mixtures of the two.

The table below lists a variety of borate compounds that can be used in the subject invention

Table 1 Borate compounds suitable for water structuring in low cost bars.

Name	Structure
Tincal	$\text{Na}_2\text{B}_4\text{O}_7 \cdot 10 \text{H}_2\text{O}$
Tincalconite	$\text{Na}_2\text{B}_4\text{O}_7 \cdot 5 \text{H}_2\text{O}$
Kernite	$\text{Na}_2\text{B}_4\text{O}_7 \cdot 4 \text{H}_2\text{O}$
Colemanite	$\text{Ca}_2\text{B}_6\text{O}_{11} \cdot 5 \text{H}_2\text{O}$
Ulexite	$\text{Na}_2\text{Ca}_2\text{B}_{10}\text{O}_{18} \cdot 16 \text{H}_2\text{O}$
Proberite	$\text{Na}_2\text{Ca}_2\text{B}_{10}\text{O}_{18} \cdot 10 \text{H}_2\text{O}$
Hydroboracite	$\text{CaMgB}_6\text{O}_{11} \cdot 8 \text{H}_2\text{O}$
Indanite	$\text{Mg}_2\text{B}_6\text{O}_{11} \cdot 15 \text{H}_2\text{O}$
Dalotite	$\text{Ca}_2\text{Si}_2\text{B}_2\text{O}_8 \cdot \text{H}_2\text{O}$
Szabelyite	$\text{Mg}_2\text{B}_2\text{O}_5 \cdot \text{H}_2\text{O}$
Sassolite	$\text{B}(\text{OH})_3$

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Typically the borate compound or compounds will comprise 0.1 to 25% preferably 0.5% to 20% by wt. more preferably 1 to 18% of the bar compositions. It may comprise 2% 3% or 4% minimum levels.

What is unique to the invention was the discovery that these boron compounds structure large amounts of water preferably in the absence of binders and structurants normally found in bars which allowed for replacement of surfactant (e.g. TFM) and production of less expensive bars.

The boron containing compound is preferably not the "puffed" Borax compound described in U.S. Patent No. 3,708,425 which is chemically a distinct compound prepared by heating disodium tetraborate decahydrate ($\text{Na}_2\text{B}_4\text{O}_7 \cdot 10 \text{H}_2\text{O}$) or the pentahydrate to 200-450°F to dry and then to 600-800°F to cause the material to swell/aerate ("puffing").

Water

As noted, a key to the invention was the observation that the boron compound allowed much greater quantities of water to be structured without introducing process problems and while retaining good bar user attributes (e.g. good hardness i.e. less than or equal to 8).

Typically bars of the invention comprise at least 20-60% by wt. moisture preferably at least 20% to 50% more preferably 24% to 40% more preferably 24% to 35%.

Additives

Additives such as dyes, perfumes, soda ash, sodium chloride, brighteners, etc. are normally used in an amount 0 to 3% preferably 0.01 to 2% of the composition. Some examples are set forth below.

Perfumes, sequestering agents, such as tetrasodium ethylenediaminetetraacetate (EDTA), EHDP or mixtures in an amount of 0.01 to 1% preferably 0.01 to 0.05% and coloring agents, opacifiers and pearlizers such as zinc stearate, magnesium stearate, TiO_2 , EGMS (ethylene glycol monostearate) or Lytron 621 (Styrene/Acrylate copolymer) all of which are useful in enhancing the appearance or cosmetic properties of the product.

In addition, the bar compositions of the invention may include 0 to 25% by wt. preferably 1 to 25% by wt. more preferably 5 to 20% by wt. skin protection and benefit agents and/or performance enhancers, optional ingredients as follows.

Further, the bar composition of the invention may include 0 – 25% by weight of crystalline or amorphous aluminium hydroxide. The said aluminium hydroxide can be generated in-situ by reacting fatty acids and/or non-fatty mono- or polycarboxylic acids with sodium aluminate, or can be prepared separately by reacting fatty acids and/or non-fatty mono- or polycarboxylic acids with sodium aluminate and adding the reaction product to the soap.

Such optional additives may include polyalkylene glycol of MW 2000 to 20,000, starches, water soluble polymers chemically modified with hydrophobic moiety (e.g. EO-PO block copolymer).

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Benefit Agent

The benefit agent optionals of the subject invention may be a single benefit agent component, or it may be a benefit agent compound added via a carrier into the process stream. Further the benefit agent may be a mixture of two or more compounds, one or all of which may have a beneficial aspect. In addition the benefit agent itself may act as a carrier for other components one may wish to add to the bar composition.

The benefit agents can be emollients, moisturizers, anti-aging agents, skin-toning agents, skin lightening agents, sun screens etc.

The preferred list of benefit agents include

- (a) silicone oils, gums and modifications thereof such as linear and cyclic polydimethylsiloxanes, amino alkyl alkylaryl and aryl silicone oils.
- (b) fats and oils including natural fats and oils such as jojoba, soybean, rice bran, avocado, almond, olive, sesame, persic, castor, coconut, mink oils, cacao fat, beef tallow, lard, hardened oils obtained by hydrogenating the aforementioned oils, and synthetic mono, di and triglycerides such as myristic acid glyceride and 2-ethylhexanoic acid glyceride.
- (c) waxes such as carnauba, spermaceti, beeswax, lanolin and derivatives thereof.
- (d) hydrophobic plant extracts.
- (e) hydrocarbons such as liquid paraffins, vaseline, microcrystalline wax, cerasin, squalene, pristan and mineral oil.

- (f) higher fatty acids such as lauric, myristic, palmitic, stearic, behenic, oleic, linoleic, linolenic, lanolic, isostearic and poly unsaturated fatty acids (PUFA)
- (g) higher alcohols such as lauryl, cetyl, stearyl, oleyl, behenyl, cholesterol and 2-hexydecanol alcohol
- (h) esters such as cetyl octanoate, myristyl lactate, cetyl lactate, isopropyl myristate, myristyl myristate, isopropyl palmitate, isopropyl adipate, butyl stearate, decyl oleate, cholesterol isostearate, glycerol monostearate, glycerol distearate, glycerol tristearate, alkyl lactate, alkyl citrate and alkyl tartrate
- (i) essential oils such as mentha, jasmine, camphor, white cedar, bitter orange peel, yru, turpentine, cinnamon, bergamot, citrus unshlu, calamus, pine, lavender, bay, clove, hiba, eucalyptus, lemon, starflower, thyme, peppermint, rose, sage, menthol, cineole, eugenol, citral, citronelle, borneol, linalool, geraniol, evening primrose, camphor, thymol, spirantol, pinene, limonene and terpenoid oils
- (j) lipids such as cholesterol, ceramides, sucrose esters and pseudo-ceramides as described in European Patent Specification No. 556 957
- (k) vitamins such as vitamin A and E and vitamin alkyl esters, including those vitamin C alkyl esters
- (l) sunscreens such as octyl methoxyl cinnamate (Parsol MCX) and butyl methoxy benzoylmethane (Parsol 1789)
- (m) phospholipids, and
- (n) mixtures of any of the foregoing components.

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A particularly preferred benefit agent is silicone preferably silicones having viscosity greater than about 50 000 centipoise. One example is polydimethylsiloxane having viscosity of about 60 000 centistokes.

Another preferred benefit agent is benzyl laurate

The benefit agent generally comprises about 0-25% by wt. of the composition preferably 5-20%.

Processing

The bars of the invention are made typically from a mixture obtained by mixing soap/surfactant base with all the desired ingredients (see examples 1-7) in a ploughshare or Paterson mixer at about 85°C. The mixture is typically cooled to room temperature, aged, milled, plodded and stamped.

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Bar Properties

The resulting bar will typically have a hardness expressed as penetration value (less is the penetration value higher is the hardness) of less than or equal to 8 preferably less than or equal to 7 more preferably at least 4 to 7 as measured by penetrometer test.

Typically bars have density of about 0.8 to 1.3 g/cm³. One significant advantage of the invention is that it allows incorporation of filler such as talc without significantly affecting the bar density.

Bars have low rates of water by which is meant the bar typically has excellent moisturize retention and relatively low amounts of shrinkage both upon stamping and upon use.

Typically the bars will retain about 85% to 95% of moisture at ambient temperatures and at varying relative humidities (e.g. 55-95% relative humidity).

Typically bars also will have low "mush" values and low cracking scores as well as lather properties comparable to other toilet soaps.

Protocol

This method of measuring bar hardness is performed quite simply by first placing a bar on a sturdy flat surface. The penetrometer is a long cylindrical-like instrument containing at the top a gauge (for measuring in millimeters and hundredth of millimeters) and in the middle a release lever which when released releases a penetrating cone from the base. The penetrometer is grasped firmly in one hand and its base is placed on the bar surface. When steady the release lever is to be pushed in and then to the left in one smooth motion. This will allow the pointed penetration cone to drop into the bar surface. The instrument is to be held steadily in place for two minutes. After the two minutes has elapsed the gauges on the top of the instrument are read. This reading is the number of millimeters that the tip of the cone has penetrated after two minutes (e.g. - small gauge reads 4 large gauge reads 27 - this reflects that the cone has penetrated 4.27 mm over the two minute measurement).

To improve steadiness the penetrometer can be clamped in position prior to pressing the release lever. After the reading is collected the tip of the penetration cone is wiped off the instrument inverted (the penetration cone will slide back inside) and the release lever is pushed back to the right (to lock the cone in place). At least two readings should be collected from each bar. Measurements are routinely expressed as mm/2min (lower readings = harder bars).

Except in the operating and comparative examples or where otherwise explicitly indicated all numbers in this description indicating amounts or ratios of materials or conditions or reaction, physical properties of materials and/or use are to be understood as modified by the word "about".

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Where used in the specification, the term "comprising" is intended to include the presence of stated features, integers, steps, components, but not to preclude the presence or addition of one or more features, integers, steps, components or groups thereof.

The following examples are intended to further illustrate the invention and are not intended to limit the invention in any way.

Unless indicated otherwise, all percentages are intended to be percentages by weight.

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EXAMPLES

The following 7 compositions were prepared as examples of bars of the invention

Example 1 - 58% TFM, 3.7% AB,* 7% Talc, 24% Moisture

<u>Ingredient</u>	<u>% by Wt.</u>
Anhydrous Soap**	83
AB*	3.7
Talc	7.0
EDTA	0.04
EHDP	0.2
TiO ₂	0.1
NaCl	0.5
Na Carbonate	0.7
Dye & Perfume	~0.6
Total Moisture	24

* AB = Anhydrous Borax ($\text{Na}_2\text{B}_4\text{O}_7$)

**82/18 Soap

Example 2 – 55% TFM, 5.3% AB,* 5% Talc, 28% Moisture

<u>Ingredient</u>	<u>% by Wt</u>
Anhydrous Soap**	60
AB*	5.3
Talc	5
EDTA	0.04
EHDP	0.2
Titanium Dioxide	0.1
Sodium Chloride	0.5
Sodium Carbonate	0.7
Dye & Perfume	~0.8
Total Moisture	28

* AB = Anhydrous Borax ($\text{Na}_2\text{B}_4\text{O}_7$)

**82/18 Soap (tallow/coconut)

Example 3 – 51% TFM, 9.54% AB,* 0% Talc, 33% Moisture

<u>Ingredient</u>	<u>% by Wt.</u>
Anhydrous Soap**	56
AB*	9.54
Talc	0
EDTA	0.04
EHDP	0.2
Titanium Dioxide	0.1
Sodium Chloride	0.5
Sodium Carbonate	0.7
Dye & Perfume	~0.6
Total Moisture	33

* AB = Anhydrous Borax ($\text{Na}_2\text{B}_4\text{O}_7$)

** 82% tallow and 18% coconut

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****82/18 Soap**

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Example 5 – 49% TFM, 9.54% AB,* 2% Glycerol, 33% Moisture

<u>Ingredient</u>	<u>% by Wt.</u>
Anhydrous Soap**	51
AB*	9.54
Talc	0
Glycerol	2.0
EDTA	0.04
EHDP	0.2
TiO ₂	0.1
NaCl	0.5
Na ₂ CO ₃	0.7
Dye & Perfume	~0.8
Total Moisture	35

* AB = Anhydrous Borax (Na₂B₄O₇)

**82/18 Soap

In order to establish whether water was being retained in the bars as a result of water structuring by Borax, applicants examined the moisture loss in each of the examples 1-5 through a 6 week storage stability study

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Example 6 – 58% TFM, 0.9% AB, 10% Talc, 24% Moisture

<u>Ingredient</u>	<u>% by Wt.</u>
Anhydrous Soap**	63
AB*	0.9
Talc	10
EDTA	0.04
EHDP	0.2
TiO ₂	0.1
NaCl	0.5
Na CO ₃	0.7
Dye & Perfume	~0.6
Total Moisture	24

* AB = Anhydrous Borax (Na₂B₄O₇)

**82/18 Soap

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Example 7 – 38% TFM, 9.54% AB,* 15% Sodium Lactate, 32% Moisture

<u>Ingredient</u>	<u>% by Wt.</u>
Anhydrous Soap**	41.4
AB*	9.54
Talc	0
Sodium Lactate	15
EDTA	0.04
EHDP	0.2
TiO ₂	0.1
NaCl	0.5
Na CO ₃	0.7
Dye & Perfume	~0.6
Total Moisture	32

* AB = Anhydrous Borax (Na₂B₄O₇)

**82/18 Soap

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Control

In addition to the 7 examples of the invention applicants also tested as controls (1) Breeze^(R) Bar with 9% moisture and a Lever 2000 Bar with 10% moisture. Compositions for these 2 are set forth below

Breeze

<u>Ingredient</u>	<u>% by Wt.</u>
Anhydrous Soap*	78
Talc	11
EDTA	0.04
EHDP	0.2
TiO ₂	0.1
NaCl	0.5
Na CO ₃	0.7
Dye & Perfume	~0.8
Total Moisture	9

*82/18 soap

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***82/18 soap**

Moisture Retention Studies

B. Storage Stability Tests Two types of storage stability tests have been done for examples 1-5 and two controls (same as above) under (a) ambient conditions (22°C) for 6 weeks and (b) recycling conditions alternating 80°F 80% RH one week, ambient temperature next week, for 6 weeks. Both these tests show that high moisture containing soaps possessing Borax retain water very well even in 6 weeks.

Table 3 Total Weight Loss Under Ambient Storage Conditions

Example	Bar Description	Initial Weight	% Total Weight Loss (2 Bar Average)					
			Wk #1	Wk #2	Wk #3	Wk #4	Wk #5	Wk #6
Example 1	58% TFM 3.7% AB 7% Talc, 24% Moisture	79 g	-5.1	-8.4	-7.3	7.9	-8.3	8.5
Example 2	55% TFM 5.3% AB 5% Talc, 28% Moisture	79 g	-5.7	-7.1	-8.1	-3.7	-9.1	9.5
Example 3	51% TFM 9.54% AB 0% Talc, 33% Moisture	79 g	7.0	-8.5	-9.6	10.2	-10.6	11
Example 4	47% TFM 9.54% AB 2% Na Lactate 35% Moisture	79 g	7.4	-9.0	-9.9	-10.6	-11	11.3
Example 5	49% TFM, 9.54% AB, 2% Glycerol, 33% Moisture	79 g	-8.7	-8.1	-9.0	9.7	10	10.3
Control	Breeze	90 g	-0.1	-0.1	-0.1	-0.2	-0.3	0.3
Control	Lever 2000	138 g	-0.1	-0.1	-0.1	0.2	-0.2	0.3

Thus, sorption measurements show that Borax containing toilet soap bars retain the moisture very well (Table 2) Similarly Storage Stability Studies (Tables 3 and 4) also show that the Borax containing soap bars retain 85-95% of initial moisture after six weeks under either ambient or recycling conditions.

Therefore, both these studies suggest that Borax is structuring water in the bar

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The bars of the invention were tested using a penetrometer as described in the protocol above and results are as set forth below

Table 5. Hardness of Borax Bars

Code	Bar Description	Hardness (expressed as penetration value)
Control	Breeze (78% TFM 11% Talc, 9% Moisture)	5 0
Example 1	58% TFM 3.7% AB 7% Talc 24% Moisture	5 1
Example 2	55% TFM 5.3% AB 5% Talc 28% Moisture	5 4
Example 3	51% TFM 9.54% AB 0% Talc 33% Moisture	5 7
Example 4	47% TFM 9.54% AB 2% Sodium Lactate 35% Moisture	5 8
Example 5	49% TFM 9.54% AB 2% Glycerol 33% Moisture	5 9

As clearly seen from Table above bars of invention all have hardness (expressed as penetration value) less than or equal to 8 preferably less than or equal to 7 more preferably 4-6.

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COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY (Includes Reference to PCT International Applications)

ATTORNEY'S DOCKET NO. J6884(C)

As a below named inventor I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

HIGH MOISTURE RETAINING BAR COMPOSITIONS COMPRISING BORAX AS WATER STRUCTURANT

the specification of which (check only one item below):

- ☒ is attached hereto
- ☐ was filed as United States application Serial No. _____ on _____ and was amended on _____ (if applicable).
- ☐ was filed as PCT International application No. _____ on _____ and was amended under PCT Article 19 on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37 Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate or of any PCT International application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT International application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) of which priority is claimed:

PRIOR FOREIGN/PCT APPLICATION(S) AND ANY PRIORITY CLAIMS UNDER 35 U.S.C. 119:

COUNTRY (If PCT indicate PCT)	APPLICATION NUMBER	DATE OF FILING (Day month year)	PRIORITY CLAIMS UNDER 35 USC 119
			Yes _____ No _____

I hereby claim the benefit under Title 35, United States Code §120 of any United States application(s) or PCT International application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code §112, I acknowledge the duty to disclose material information as defined in Title 37 Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT International filing of this application:

PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120

U. S. APPLICATIONS		STATUS (Check one)		
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U.S. Dept. of Commerce (Patent & Trademark Office)

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COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY
(Continued) (Includes Reference to PCT International Applications)

ATTORNEY'S DOCKET NO.
J6984(C)

POWER OF ATTORNEY: As a named inventor I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. (List name and registration number).

James J. Farrell, Reg. No. 28,182
Milton L. Horig, Reg. No. 28,817
Rizana Mithran, Reg. No. 34,388
Matthew Bozer, Reg. No. 28,485
Alan A. Bernstein, Reg. No. 40,819

Ronald A. Kozz, Reg. No. 31 774
Gerard J. McGowan, Jr. Reg. No. 28,412
Neil Y. Gilbert, Reg. No. 38,158
Edward A. Squillante, Jr., Reg. No. 38,318

Send correspondence to:

UNILEVER
Patent Dept.
48 River Road
Edgewater NJ 07020

Direct telephone calls to: (name & telephone number)

James J. Farrell
(201) 943-7100

Full Name of Inventor 201	Family Name	First Given Name	Second Given Name
	RACHERLA	UDAY	SHANKER
Residence & Citizenship	City	State or Foreign Country	Country of Citizenship
	WEST CALDWELL	NEW JERSEY	INDIA
Post Office Address	Post Office Address	City	State & Zip Code/Country
	5 WHITAKER PLACE	WEST CALDWELL	NEW JERSEY 07008

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such wilful false statements may jeopardize the validity of the application or any patent issuing thereon.

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Date:

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22 DE NOVIEMBRE DE 2000

la totalidad de nuestros derechos para solicitar y obtener una patente en

COLOMBIA

sobre un invento hecho por nosotros, llamado

COMPOSICIONES EN BARRA QUE RETIENEN ALTA HUMEDAD QUE

CONTIENEN BORAX COMO ESTRUCTURANTE DE AGUA

Fecha el día 22 de Noviembre de 2000

Firmado Uday Shanker Racherla

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Uday Shanker RACHERLA, c/o Hindustan Lever Ltd Research Centre Chakala
Andheri (East) Mumbai 400 099 India

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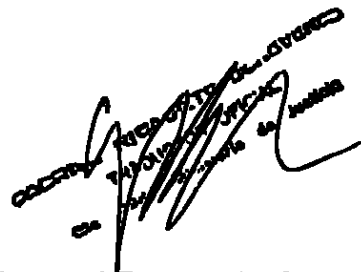
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SANTAFE DE BOGOTA D.C.

ASSIGNMENT OF INVENTION

I/We the undersigned do hereby assign to

UNILEVER N V
a Dutch company of
Weena 455
3013 AL Rotterdam
Netherlands

my/our entire right to apply for and to obtain a patent in

COLOMBIA

on an invention made by me/us entitled

HIGH MOISTURE RETAINING BAR COMPOSITIONS COMPRISING BORAX AS WATER STRUCTURANT

Dated the 22nd day of November 2000

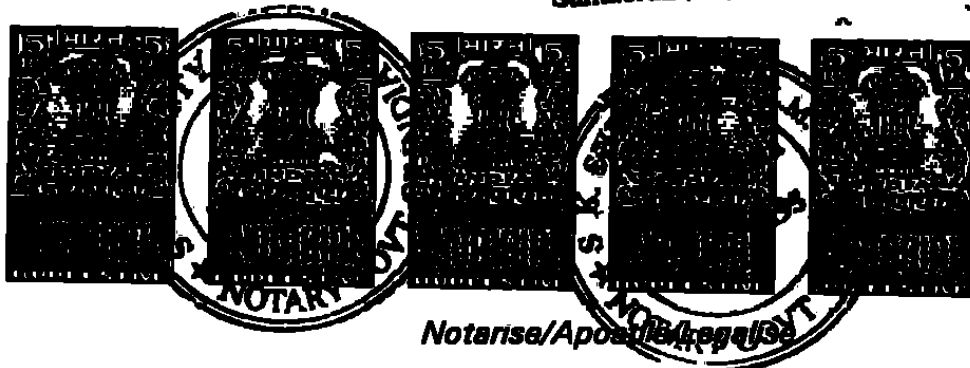
Uday Shanker Racherla

Uday Shanker RACHERLA c/o Hindustan Lever Ltd Research Centre Chakala Andheri (East) Mumbai 400 09 India

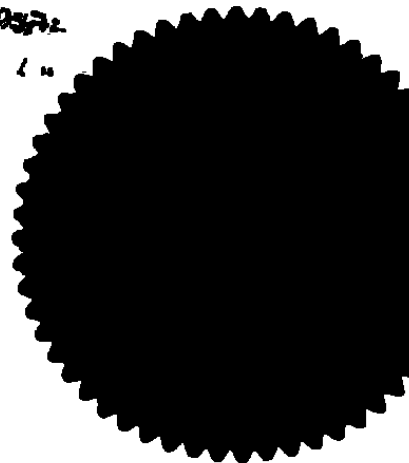
X

Before me
Shetty 22/11/2000

S. K. SHETTY B.A., LL.M.
ADVOCATE
NOTARY GOVT OF INDIA
8 Prakash Beshant Street,
Santacruz (W) Mumbai - 400 054



Notarise/Apostille/legalise





MINISTERIO DE RELACIONES
EXTERIORES

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COYA FIRMA APARECE EN EL
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JEFE DE LEGALIZACIONES
SANTAFE DE BOGOTA D C

CHONTS
FIDUCIARY



The Signature of Shri
is hereby Certified

Section Officer
Home Department
Government of Maharashtra
Mantralaya, Bombay

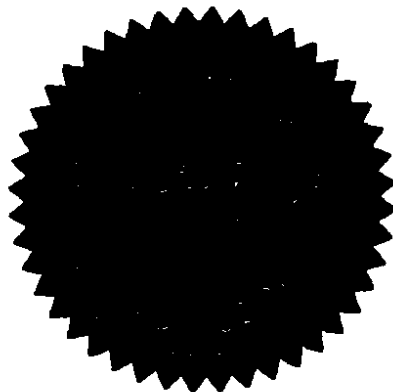
22 NOV 2000

Certified Verified And Authenticated
In The Town Of Egham In Surrey

This

Day Of

KENNETH GREENWOOD
NOTARY PUBLIC
HORNE ENGALL AND FREEMAN



MINISTERIO DE RELACIONES
EXTERIORES

NO SE ASUME
RESPONSABILIDAD DEL TEXTO

004725

JAN 23

CUYA FIRMA APARECE EN EL
UNIFORME DE LA EMBAJADA
LAS FUNCIONES INDICADAS

JEFE DE LEGALIZACIONES
SANTAFE DE BUENOS AIRES

No **D648814**

Date **6 December, 2000**

This document bears
the signature / seal of **K Greenwood**

Acting in the capacity of **Notary Public**

Signed by **J M A Mason**



[Handwritten signature]

*For Her Majesty's Principal Secretary of State
For Foreign and Commonwealth Affairs*

59

CONSULADO GENERAL DE COLOMBIA
LONDRES

AUTENTICACION N° 02225-12



EL CONSUL DE COLOMBIA DE EE DE
QUE M. A. MASON

EJERCE EN LA FECHA LAS FUNCIONES
DE VICECONSUL

Y QUE SU FIRMA Y SELLOS SON LOS
QUE ACOSTUMBRA EN SUS ACTOS
OFICIALES

LONDRES 07 DEC 2000

PAGADO IMPUESTO
DE TIMBRE

DERECHOS US\$ 22.-


JAIRO BERRIO VILLARREAL
Consul General

JAIRO BERRIO VILLARREAL
Consul General

