

Drigard & Castro
Abogados

Apartado 3692

Cra. 7 16-56
Bogotá - Colombia S.A.

Tel. Conm. 3802200
Tel./Fax: (57.1) 2827976
(57.1) 3802700

E-Mail: bricas@brigardycastro.com.co

AS: 89.075

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

SUPERINDUSTRIA Y COMERCIO
Radicacion : 020993271 00000005 Folios: 2
Fecha (AMB): 2004-09-08 16:50:05
Tramite : 011 PCT-PATENT 379 FASE NACI 530 PETICION
Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

REF.: Expediente No. 02 099.271 solicitud de Patente FASE NACIONAL
Corresp. a la Solicitud Internacional PCT/US01/10331
a nombre de **COLGATE – PALMOLIVE COMPANY**
Titulada: **EFFECTIVO PRODUCTO SÓLIDO SUAVE PARA EL CUIDADO PERSONAL**

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 esa División 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. 04-42,139 por valor de \$177.000.

Señor Superintendente,



RAMIRO CASTRO DUQUE
C.C. No. 170.322 de Bogotá
Código 340
T.P. No.1003 del C.S.J.
Cra. 7 No. 16-56 Piso 9

Septiembre 08, 2004
CHP/MEV/hsr.

29

SUPERINDUSTRIA Y COMERCIO
Radiacion : 02093271 00000005 Folios: 2
Fecha (AMD): 2004-09-06 16:50:05
Tramite : 011 PCT-PATENT 379 FASE HACI 538 PETICION
Dependencia: 2020 DIVISION DE NUEVAS CREACIONES

NIT : B00176089-2

RECIBO OFICIAL DE CAJA : 04 - 42,139
FECHA : MAYO 27 DE 2004

***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PGO	Vr. PAGO
BRIGARD & CASTRO LTDA	CONSIGNACION	BANCO POPULAR	050-00110-6	21734277	27/05/2004	16,673,100.00

***** CONCEPTO *****

CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1	50005-01-01 SOLICITUDES	114 PTC CAP-II EXAMEN DE PATENTIBILIDAD	177,000.00
		TOTAL :	\$ 177,000.00

SON: CIENTO SETENTA Y SIETE MIL PESOS

RESPONSABLE : 

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____



DIVISION DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No. 02-99271

EL EXTRACTO DE LA PRESENTE SOLICITUD DE PATENTE DE INVENCION - PCT FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No 538, DE FECHA 31 DE MARZO DE 2004, EL TERMINO HABIL SEÑALADO POR LA LEY EXPIRA EL 01 DE JULIO DE 2004.

NOTA: Dentro del plazo de los seis (6) meses siguientes a partir de la fecha de publicación en la gaceta de Propiedad Industrial, deberá solicitar y cancelar el examen de patentabilidad so pena de que la solicitud caiga en abandono, de acuerdo con lo establecido en el Artículo 44 de la Decisión 486/2000.

SE PRESENTARON OPOSICIONES POR PARTE DE TERCEROS.

SI _____ NO **X** _____

148
97

**SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIVISIÓN DE NUEVAS CREACIONES**

2020/
Bogotá, D.C.,

**Doctor
Ramiro Castro
Apoderado**

Oficio N°. 0417

REFERENCIA	Radicación	02 99271
	Trámite	002
	Evento	001
	Actuación	430
	Folios	009

Como resultado del examen de patentabilidad de la solicitud de patente de invención N° 02 99271, realizado según el artículo 45 de la decisión 486 de la comisión de la Comunidad Andina, se notifica:

Documentos estudiados:

- . Descripción: folios 28-43
- . Ejemplos: folios 43-51
- . Capítulo reivindicatorio estudiado: folios 52-55
- . Se reivindica prioridad, presentada en Estados Unidos el 04.04.00, bajo el número 60/194462 y la 09/671775 presentada el 28.09.00

Objeto de la invención

Según las reivindicaciones 1 a 9 de la presente solicitud, se refiere a composiciones antitranspirantes y/o desodorantes de bajo residuo que comprenden una silicona volátil, un emoliente, sólidos de ciclometicona, un activo antitranspirante, perlas de polietileno, un agente antimicrobiano y fragancia..

Clasificación Internacional de patentes A 61 K 7/32

Claridad de la solicitud

El artículo 30 de la decisión 486 establece que *"Las reivindicaciones definirán la materia que se desea proteger mediante la patente. Deben ser claras y concisas y estar enteramente sustentadas por la descripción"*

Teniendo en cuenta lo anterior, las cantidades de silicona volátil utilizada en los ejemplos de la presente solicitud no son consistentes con los rangos que se reivindican en la reivindicación 1, además la descripción contradice plenamente a la reivindicación 1 en lo que concierne a las cantidades de siliconas volátiles y de elastómero que deben ir dentro de la composición.

El término "base libre se amortiguador anhidra" no es claro y no define de manera precisa la cantidad de activo desodorante que se desea proteger.

Favor hacer las aclaraciones y correcciones del caso.

Determinación del estado de la técnica:

Consultadas las fuentes de Información con que cuenta este despacho, se encontraron los siguientes documentos, anteriores a la fecha de prioridad de la presente solicitud - 04.04.00-, relacionados con la materia de la presente solicitud:

Nº	Documento	Título	Fecha de publicación
1	US 5654362	"Aceites y solventes de silicona espesados por elastómeros de silicona"	05.08.97
2	US 5069897	"Cremas antiperspirantes"	03.12.91

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 de la comisión de la comunidad andina, 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.

Evaluación del NIVEL INVENTIVO

El artículo 18 de la decisión 486 dispone *"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"*

La patente US 5654362 enseña que los elastómeros de silicona son especialmente adecuados para aplicación en desodorantes y antitranspirantes

La patente US 5069897 publica composiciones desodorantes que comprenden:

- 30-50% de un aceite de silicona volátil
- 15-25% de un emoliente
- 2-7% de un espesante
- 15-45% de un activo desodorante

Teniendo en cuenta el objeto de la solicitud, el cual es proporcionar composiciones desodorantes que son espesadas por un polímero reticulado (elastómero) de silicona, se

150
9A

aprecia que es una derivación evidente del estado de la técnica ya que una persona versada en la materia utilizaría las composiciones de US 5069897 y reemplazaría el espesante allí utilizado por los elastómeros de US 5654362 que son adecuados para desodorantes.

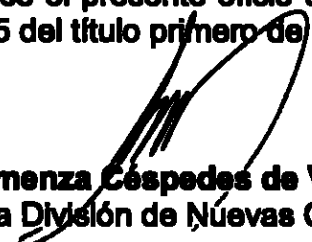
Finalmente, no se demuestran ventajas de los desodorantes de la presente solicitud en comparación con los del estado de la técnica.

En conclusión los requisitos de patentabilidad de la presente solicitud se encuentran afectados así:

Nº	Documento	Reivindicaciones afectadas	Requisito que afecta
1	US 5654362	1-9	Nivel Inventivo
2	US 5069897	1-9	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 5 del título primero de la Circular Única N° 10 de 2001


Álix Carmenza Céspedes de Vergel
Jefe de la División de Nuevas Creaciones

El anterior requerimiento fue notificado por fijación en lista, de fecha 12 ENE 2007

CONCEPTO TÉCNICO Número 2043	EXAMINADOR TÉCNICO Código 202024
--	--

157
9f



US005654362A

United States Patent [19]

Schulz, Jr. et al.

[11] **Patent Number:** **5,654,362**

[45] **Date of Patent:** **Aug. 5, 1997**

[34] **SILICONE OILS AND SOLVENTS
THICKENED BY SILICONE ELASTOMERS**

5,236,986 8/1993 Sakata _____ 524/267
5,412,004 5/1995 Tsubasa _____ 524/27
5,493,041 2/1996 Biggs _____ 536/433

[75] **Inventors:** William James Schulz, Jr.; Shishong Zhang, both of Midland, Mich.

OTHER PUBLICATIONS

[73] **Assignee:** Dow Corning Corporation, Midland, Mich.

"Development of New Thickening Agent for Silicone Oils", Koji Sakata, IFSCC Yokohama, Oct. 1992.

Primary Examiner—Ralph H. Dean
Attorney, Agent, or Firm—James L. DeCesare

[21] **Appl. No.:** 618,616

[57] **ABSTRACT**

[22] **Filed:** Mar. 28, 1996

[51] **Int. Cl.⁶** _____ C08L 83/05

[52] **U.S. Cl.** _____ 524/862; 528/15; 528/25;
528/31; 523/122; 424/401; 524/731

[58] **Field of Search** _____ 528/15, 25, 31;
524/731, 862; 424/401; 523/122

Silicone gels are made by reacting an =Si-H containing polysiloxane with an alpha, omega-diene. The reaction is conducted in the presence of a platinum catalyst and in the presence of a low molecular weight silicone oil. The reaction is continued until a gel is formed by crosslinking and addition of =Si-H across double bonds in the alpha, omega-diene. The silicone gel can then be crumbled into a silicone powder using mechanical force. When additional amounts of low molecular weight silicone oil are added to the gel, and the silicone oil and the gel are subjected to shear force, a silicone paste can be formed.

[36] **References Cited**

U.S. PATENT DOCUMENTS

3,418,333 12/1968 Brown .
3,450,736 6/1969 De Montigny .
4,172,101 10/1979 Gatson _____ 525/101
4,987,169 1/1991 Kawaia _____ 524/267

18 Claims, No Drawings

ketones, amines, esters, ethers, glycols, glycol ethers, alkyl halides, or aromatic halides. Representative of some common organic solvents are alcohols such as methanol, ethanol, 1-propanol, cyclohexanol, benzyl alcohol, 2-octanol, ethylene glycol, propylene glycol, and glycerol; aliphatic hydrocarbons such as pentane, cyclohexane, heptane, VM&P solvent, and mineral spirits; alkyl halides such as chloroform, carbon tetrachloride, perchloroethylene, ethyl chloride, and chlorobenzene; amines such as isopropylamine, cyclohexylamine, ethanolamine, and diethanolamine; aromatic hydrocarbons such as benzene, toluene, ethylbenzene, and xylene; esters such as ethyl acetate, isopropyl acetate, ethyl acetoacetate, amyl acetate, isobutyl isobutyrate, and benzyl acetate; ethers such as ethyl ether, n-butyl ether, tetrahydrofuran, and 1,4-dioxane; glycol ethers such as ethylene glycol monomethyl ether, ethylene glycol monomethyl ether acetate, diethylene glycol monobutyl ether, and propylene glycol monophenyl ether; ketones such as acetone, methyl ethyl ketone, cyclohexanone, diacetone alcohol, methyl amyl ketone, and diisobutyl ketone; petroleum hydrocarbons such as mineral oil, gasoline, naphtha, kerosene, gas oil, heavy oil, and crude oil; lubricating oils such as spindle oil and turbine oil; and fatty oils such as corn oil, soybean oil, olive oil, rape seed oil, cotton seed oil, sardine oil, herring oil, and whale oil.

"Other" miscellaneous organic solvents can also be used, such as acetonitrile, nitromethane, dimethylformamide, propylene oxide, triethyl phosphate, butyrolactone, furfural, pine oil, terpenes, and m-cresol.

We further intend to encompass by the term solvent, volatile flavoring agents such as oil of wintergreen; peppermint oil; spearmint oil; menthol; vanilla; cinnamon oil; clove oil; bay oil; anise oil; eucalyptus oil; thyme oil; cedar leaf oil; oil of nutmeg; oil of sage; anise oil; cocoa; licorice; high fructose corn syrup; citrus oils such as lemon, orange, lime, and grapefruit; fruit essences such as apple, pear, peach, grape, strawberry, raspberry, cherry, plum, pineapple, and apricot; and other useful flavoring agents including aldehydes and esters such as cinnamyl acetate, cinnamaldehyde, eugenyl formate, p-methylanisole, acetalddehyde, benzaldehyde, anisaldehyde, citral, nerol, decanal, vanillin, tolyl aldehyde, 2,6-dimethylacetone, and 2-ethyl butyraldehyde.

In addition, we intend the term solvent to include volatile fragrances such as natural products and perfume oils. Some representative natural products and perfume oils are ambergris, benzoin, civet, clove, leaf oil, jasmine, rose, sandalwood, musk, myrrh, orris, sandalwood oil, and vetiver oil; aroma chemicals such as amyl salicylate, amyl cinnamic aldehyde, benzyl acetate, chionellol, coumarin, geraniol, isobutyl acetate, ambrette, and terphenyl acetate; and the various classic family perfume oils such as the floral bouquet family, the oriental family, the chypre family, the woody family, the citrus family, the canoe family, the leather family, the spice family, and the herbal family.

Carrying out of the process is simply a matter of combining the =SiH containing polysiloxane(s), the alpha, omega-diene, the low molecular weight silicone oil or other solvent, and the catalyst; and mixing these ingredients at room temperature until a gel is formed. Higher temperatures to speed up the process can be used, if desired.

Additional amounts of the low molecular weight silicone oil or solvent are then added to the gel, and the resulting mixture is subjected to shear force to form the paste. Any type of mixing and shearing equipment may be used to perform these steps such as a batch mixer, planetary mixer, single or multiple screw extruder, dynamic or static mixer, colloid mill, homogenizer, sonicator, or a combination thereof.

Typically, we carry out the process using approximately a 1:1 molar ratio of =SiH containing polysiloxane and alpha, omega-diene. It is expected that useful materials may also be prepared by carrying out the process with an excess of either the =SiH containing polysiloxane or the alpha, omega-diene, but this would be considered a less efficient use of the materials. The remainder of the composition comprises the low molecular weight silicone oil or other solvent in amounts generally within the range of about 65-98 percent by weight of the composition, preferably about 80-98 percent by weight.

The following examples illustrate our invention in more detail.

EXAMPLE I

50 g of an organopolysiloxane with the average structure $\text{Me}_2\text{SiO}(\text{Me}_2\text{SiO})_{24}(\text{MeHSiO})_2\text{SiMe}_3$, 2.75 g of 1,5-hexadiene, and 264 g of octamethylcyclotetrasiloxane were charged into a reaction vessel. 100 μL of Karstedt's catalyst described above containing one weight percent of Pt in toluene was added while the solution was stirred. Gelation took place within one hour. The gel was left in the reactor for 8 hours, and then 50 parts by weight of the gel were swollen with 50 parts by weight of octamethylcyclotetrasiloxane under a shear force. A uniform and transparent paste was obtained with a viscosity of 1.8×10^5 centipoise (mPa.s).

EXAMPLE II

5 g of an organopolysiloxane with the average structure $\text{Me}_2\text{SiO}(\text{Me}_2\text{SiO})_2(\text{MeHSiO})_2\text{SiMe}_3$, 2.75 g of an organopolysiloxane with the average structure $\text{HSiMe}_2\text{O}(\text{Me}_2\text{SiO})_{17}\text{SiHMe}_3$, 0.92 g of 1,5-hexadiene, and 43.5 g of octamethylcyclotetrasiloxane were charged into a reaction vessel. 20 μL Karstedt's catalyst was added while the solution was stirred. Gelation took place within one hour. The gel was left in the reactor for 8 hours, and then 50 parts by weight of the gel were swollen with 50 parts by weight of octamethylcyclotetrasiloxane under a shear force. A uniform and transparent paste was obtained with a viscosity of 6.0×10^5 centipoise (mPa.s).

EXAMPLE III

3 g of an organopolysiloxane with the average structure $\text{Me}_2\text{SiO}(\text{Me}_2\text{SiO})_{100}(\text{MeHSiO})_{10}\text{SiMe}_3$, 0.35 g of 1,13-tridecadiene, and 23.5 g of octamethylcyclotetrasiloxane were charged into a reaction vessel. 10 μL Karstedt's catalyst was added while the solution was stirred. Gelation took place within one hour. The gel was left in the reactor for two days, and then it was broken into a powder by mechanical stirring. An antiperspirant was formulated with this powder and the other three ingredients shown in Table I. The antiperspirant exhibited a high degree of spreadability, smoothness, little or no residue, and dryness, among its beneficial properties.

TABLE I

Ingredient	Amount
Octyl Palmitate $\text{C}_{18}\text{H}_{36}\text{O}_2$ (Ranfac)	6 parts
Silicone Powder (Ranfac 80)	70 parts
Antiperspirant Active Fragrance	25 parts 1 part

In Table I, the emollient octyl palmitate is an ester of 2-octylhexyl alcohol and palmitic acid. The antiperspirant

152
99

active was Aluminum-Zirconium Tetrachlorohydrate-Gly (CTFA INCI name). It was in the form of a super-fine micronized powder. However, the formulation may contain other antiperspirant salt actives such as Aluminum Dichlorohydrate, Aluminum Sesquichlorohydrate, Aluminum-Zirconium Trichlorohydrate-Gly, Aluminum-Zirconium Pentachlorohydrate-Gly, or Aluminum-Zirconium Octachlorohydrate-Gly.

Formulated antiperspirants should contain a maximum use level of antiperspirant salt active of 20% by weight aluminum-zirconium type and 25% by weight aluminum chlorohydrate type on an anhydrous basis.

Emollient oils other than octyl palmitate can be used in the formulation, such as mineral oil, peanut oil, sesame oil, avocado oil, coconut oil, cocoa butter, almond oil, sunflower oil, corn oil, cotton seed oil, castor oil, olive oil, jojoba oil, paraffin oil, cod liver oil, palm oil, soybean oil, wheat germ oil, linseed oil, and sunflower seed oil; fatty acid esters such as isopropyl myristate, isopropyl palmitate, isopropyl stearate, butyl stearate, octyl stearate, diisopropyl adipate, lauroyl oleate, diisopropyl sebacate, and lauryl lactate; fatty acids such as lauric, myristic, palmitic, stearic, oleic, linoleic, and behenic acid; fatty alcohols such as lauryl, myristyl, cetyl, stearyl, isostearyl, cetyl, ricinoleyl, aracyl, and 2-octyl dodecanol, alcohol; lanolin and its derivatives such as lanolin, lanolin oil, lanolin wax, lanolin alcohols, lanolin fatty acids, isopropyl lanolate, ethoxylated lanolin, and acetylated lanolin alcohols such as ACETULAN®, a trademark and product of Amerchol Corporation, Edison, N.J.; and hydrocarbons such as petrolatum and squalene.

Fragrances suitable for use in the formulation in Table I include any of the natural products and perfume oils previously enumerated.

The silicone elastomer, silicone gel, silicone paste, and silicone powder compositions of our invention have particular value in the personal care arena. Because of the unique volatility characteristics of the VMS component of these compositions, they can be used alone, or blended with other cosmetic fluids, to form a variety of over-the-counter (OTC) personal care products.

Thus, they are useful as carriers in antiperspirants and deodorants, since they leave a dry feel, and do not cool the skin upon evaporation. They are lubricious and will improve the properties of skin creams, skin care lotions, moisturizers, facial treatments such as aches or wrinkle removers, personal and facial cleansers, bath oils, perfumes, colognes, sachets, sunscreens, pre-shave and after-shave lotions, liquid soaps, shaving soaps, and shaving lotions. They can be used in hair shampoos, hair conditioners, hair sprays, mousses, permanents, depilatories, and cuticle coats, to enhance gloss and drying time, and provide conditioning benefits.

In cosmetics, they will function as leveling and spreading agents for pigments in make-ups, color cosmetics, foundations, blushes, lipsticks, lip balms, eye liners, mascaras, oil removers, color cosmetic removers, and powders. They are useful as delivery systems for oil and water soluble substances such as vitamins. When incorporated into sticks, gels, lotions, aerosols, and roll-ons, the compositions impart a dry, silky-smooth, payout.

In addition, the compositions exhibit a variety of advantageous and beneficial properties such as clarity, shelf stability, and ease of preparation. Hence, they have wide application, but especially in antiperspirants, deodorants, in perfumes as a carrier, and for conditioning hair.

Our silicone elastomers, gels, pastes, and powders, have uses beyond the personal care arena, including their use as

a filler or insulation material for electrical cable, a soil or water barrier for is-ground stabilization, or as a replacement for epoxy materials used in coil-on-ping designs in the electronics industry.

They are also useful as carrier for crosslinked silicone rubber particles. In that application, (i) they allow ease of incorporation of the particles into such silicone or organic phases as sealants, paints, coatings, greases, adhesives, antifoams, and potting compounds; and (ii) they provide for modifying rheological, physical, or energy absorbing properties of such phases in either their neat or finished condition.

In addition, our silicone elastomers, gels, pastes, and powders, are capable of functioning as carriers for pharmaceuticals, biocides, herbicides, pesticides, and other biologically active substances; and can be used to incorporate water and water-soluble substances into hydrophobic systems. Examples of some water-soluble substances are salicylic acid, glycerol, enzymes, and glycolic acid.

Other variations may be made in compounds, compositions, and methods described herein without departing from the essential features of our invention. The forms of our invention are exemplary and not limitations on its scope as defined in the claims.

We claim:

1. A method of thickening solvents comprising reacting (A) an =Si-H containing polysiloxane of formula $\text{R}_2\text{SiO}(\text{R}'_2\text{SiO})_a(\text{R}''\text{HSiO})_b\text{SiR}_2$ and optionally an =Si-H containing polysiloxane of formula $\text{HR}_2\text{SiO}(\text{R}'_2\text{SiO})_a\text{SiR}_2\text{H}$ or formula $\text{HR}_2\text{SiO}(\text{R}'_2\text{SiO})_a(\text{R}''\text{HSiO})_b\text{SiR}_2\text{H}$ where R, R', and R'' are alkyl groups of 1-6 carbon atoms; a is 0-250; b is 1-250; and c is 0-250; with (B) an alpha, omega-diene as the only unsaturated hydrocarbon of formula $\text{CH}_2=\text{CH}(\text{CH}_2)_x\text{CH}=\text{CH}_2$ where x is 1-20; conducting the reaction in the presence of a platinum catalyst and (C) a solvent selected from the group consisting of (i) organic compounds, (ii) compounds containing a silicon atom, (iii) mixtures of organic compounds, (iv) mixtures of compounds containing a silicon atom, and (v) mixtures of organic compounds and compounds containing a silicon atom; and continuing the reaction until a gel is formed by crosslinking and addition of =Si-H across double bonds in the alpha, omega-diene.

2. A method according to claim 1 including the further steps of adding additional solvent to the gel, and subjecting the solvent and the gel to shear force until a paste is formed.

3. A method according to claim 1 including the further step of using mechanical force to crumble the gel until a powder is obtained.

4. A gel prepared according to the method in claim 1.

5. A paste prepared according to the method in claim 2.

6. A powder prepared according to the method in claim 3.

7. A method of thickening silicone oils to gel-like consistency comprising reacting (A) an =Si-H containing polysiloxane of formula $\text{R}_2\text{SiO}(\text{R}'_2\text{SiO})_a(\text{R}''\text{HSiO})_b\text{SiR}_2$ and optionally an =Si-H containing polysiloxane of formula $\text{HR}_2\text{SiO}(\text{R}'_2\text{SiO})_a\text{SiR}_2\text{H}$ or formula $\text{HR}_2\text{SiO}(\text{R}'_2\text{SiO})_a(\text{R}''\text{HSiO})_b\text{SiR}_2\text{H}$ where R, R', and R'' are alkyl groups of 1-6 carbon atoms; a is 0-250; b is 1-250; and c is 0-250; with (B) an alpha, omega-diene as the only unsaturated hydrocarbon of formula $\text{CH}_2=\text{CH}(\text{CH}_2)_x\text{CH}=\text{CH}_2$ where x is 1-20; conducting the reaction in the presence of a platinum catalyst and (C) a silicone oil of formula $\text{R}^1_2\text{SiO}(\text{R}^1_2\text{SiO})_y\text{SiR}^1_2$ or $(\text{R}^1_2\text{SiO})_z$ where R¹ is an alkyl group of 1-20 carbon atoms or an aryl radical, y is 0-375, and z is 3-9; and continuing the reaction until a gel is formed by crosslinking and addition of =Si-H across double bonds in the alpha, omega-diene.

153
(50)

8. A method according to claim 7 including the further steps of adding additional solvent to the gel, and subjecting the solvent and the gel to shear force until a paste is formed.

9. A method according to claim 7 including the further step of using mechanical force to crumble the gel until a powder is obtained.

10. A gel prepared according to the method in claim 7.

11. A paste prepared according to the method in claim 8.

12. A powder prepared according to the method in claim 9.

13. A product containing the gel of claim 10 selected from the group consisting of antiperspirants, deodorants, skin creams, skin care lotions, moisturizers, ache removers, wrinkle removers, facial cleansers, bath oils, perfumes, colognes, sachets, sunscreens, pre-shave lotions, after-shave lotions, liquid soaps, shaving soaps, shaving lathers, hair shampoos, hair conditioners, hair sprays, mousses, permanents, depilatories, cuticle coats, make-ups, color cosmetics, foundations, blushes, lipsticks, lip balms, eyeliners, mascaras, oil removers, cosmetic removers, delivery systems for oil and water soluble substances, and pow-

ders; including products in the form of sticks, gels, lotions, aerosols, and roll-ons.

14. A product containing the gel of claim 10 and a material selected from the group consisting of crosslinked silicone rubber particles, pharmaceuticals, biocides, herbicides, pesticides, water, and water-soluble substances.

15. A method of treating hair or skin comprising applying to the hair or skin a product of claim 13.

16. A method of modifying rheological, physical, or energy absorbing properties, of silicone or organic phases selected from the group consisting of sealants, paints, coatings, greases, adhesives, antifoams, and potting compounds, comprising incorporating therein the gel of claim 10 containing crosslinked silicone rubber particles.

17. A method of filling or insulating an electrical cable comprising incorporating therein the gel of claim 10.

18. A method of stabilizing in-ground soil or water barriers comprising incorporating into soil the gel of claim 10.

* * * * *

154
101

United States Patent [19]
Orr

[11] Patent Number: 5,069,897
[45] Date of Patent: Dec. 3, 1991

[34] ANTIPERSPIRANT CREAMS

[75] Inventor: Thomas V. Orr, Cincinnati, Ohio
[73] Assignee: The Procter & Gamble Company,
Cincinnati, Ohio

[21] Appl. No.: 893,006

[22] Filed: Aug. 10, 1989

Related U.S. Application Data

[63] Continuation of Ser. No. 109,541, Oct. 16, 1987, abandoned, which is a continuation-in-part of Ser. No. 918,413, Oct. 14, 1986, abandoned.

[31] Int. Cl.³ A61K 7/34; A61K 7/36;
A61K 7/38

[32] U.S. Cl. 424/66; 424/67;
424/68

[38] Field of Search 424/63, 66, 68

[36] References Cited

U.S. PATENT DOCUMENTS

4,053,581 10/1977 Pader et al. 424/68
4,083,934 4/1978 Shelton 424/66
4,264,586 4/1981 Callingham et al. 424/65
4,288,499 5/1981 Kell 424/68
4,378,635 7/1981 Elmi 424/47
4,390,605 9/1982 Hingsett 252/303
4,526,780 7/1985 Marschner et al. 424/65
4,551,330 11/1985 Wagman et al. 424/39

FOREIGN PATENT DOCUMENTS

1099645 4/1981 Canada 424/65
0028453 5/1981 European Pat. Off. 424/68
133315 3/1983 European Pat. Off. 424/68

OTHER PUBLICATIONS

Fox, Cosmetics and Toiletries, 12/85, vol. 100, pp. 27-33, 35, 36, 40 and 41.

Primary Examiner—Dale R. Ore

Attorney, Agent, or Firm—David K. Dabbiere; Leonard W. Lewis; Steven J. Goldstein

[57]

ABSTRACT

Antiperspirant cream compositions, comprising:

- (a) from about 5% to about 60% of a volatile silicone oil
- (b) from about 5% to about 60% of a non-volatile emollient having a viscosity of at least about 2 cs at 25° C.;
- (c) from about 2% to about 10% of a particulate thickening material; and
- (d) from about 15% to about 45% of a particulate antiperspirant active material;

wherein the compositions have penetration force values of from about 250 grams to about 800 grams. These compositions preferably contain a cosmetic powder material, at a level of from about 0.5% to about 20%. This invention also provides methods for making these compositions.

13 Claims, No Drawings

-continued

Component	% (by weight)
ZAO antiperspirant active	26.7

¹hydrophobically-treated boronate, manufactured by NL Industries, Inc.²isopropyl aluminum silicate, manufactured by E. T. Vanderschuer Company

The antiperspirant cream is made by a method analogous to that described in Example I. The penetration force value is measured to be approximately 350.

EXAMPLE VI

An antiperspirant cream, according to this invention is made comprising:

Component	% (by weight)
cyclomethicone (D5)	43.5
dimethicone (350 ca)	4.0
Cab-O-Sil HS-5 ¹	4.0
Microthene FNS10 ²	6.0
Natrosol ³	2.0
iso-eicosane ⁴	13.0
Batch AZ ⁵	26.7
fragrance	0.8

¹colloidal silica thickening material, sold by Cabot Corporation.²low density polyethylene powder, sold by U.S.I. Chemicals³hydroxyethylcellulose, sold by Hercules, Inc.⁴2, 2, 4, 4, 6, 6, 8, 8-octamethyl-10-methylundecane, obtained from Paracetyl Corporation, Franklin, Pa.⁵zirconium-aluminum-glycine hydroxychloride complex, particulate antiperspirant active material, sold by Rohm Chemical Company.

The cyclomethicone dimethicone, iso-eicosane and perfume are added to a stainless steel mixing vessel. The Cab-O-Sil is then added, followed by the Microthene and Natrosol and, finally, the antiperspirant active. The composition is thoroughly stirred after addition of each particulate material.

The composition is then milled, using a Black & Decker Die Grinder (Model 4420, type 4) with a 6.35 cm diameter Cowles dispersing blade at approximately 6,000 rpm, for approximately 5 minutes. The penetration force value of the milled composition is approximately 300 grams at 25° C. and 50% relative humidity.

An antiperspirant cream formulation, comprised as above, is applied to the underarm area of a human subject, and reduces the perspiration in the applied area.

What is claimed is:

1. An antiperspirant cream composition comprising:
 - (a) from about 30% to about 50% of a volatile silicone oil;
 - (b) from about 15% to about 25% of non-volatile emollient having a viscosity of at least about 2 cs at 25° C.;
 - (c) from about 2% to about 7% of a particulate thickening material, which is colloidal silica having a particle size of less than about 1 micron; and
 - (d) from about 15% to about 45% of a particulate antiperspirant active material;

wherein said compositions have a penetration force value of from about 250 g to about 800 g, and a total level of particulate materials of from about 20% and about 40%.

2. An antiperspirant cream composition, according to claim 1, wherein said composition has a penetration force value of from about 250 g to about 550 g.

3. An antiperspirant cream composition, according to claim 2, wherein said non-volatile emollient has a viscosity of from about 100 cs to about 500 cs.

4. An antiperspirant cream composition, according to claim 3, wherein said non-volatile emollient is a polyorganosiloxane.

5. An antiperspirant cream composition, according to claim 2, additionally comprising from about 0.5% to about 20% of a cosmetic powder material and wherein said compositions have a penetration value of from about 300 g to about 550 g.

6. An antiperspirant cream composition, according to claim 5, wherein said cosmetic powder material is present at a level of from about 2% to about 10%.

7. An antiperspirant cream composition, according to claim 6, wherein said cosmetic powder material is an inert spherical particulate material.

8. An antiperspirant cream composition, according to claim 7, wherein said colloidal silica is present at a level of from about 2.8% to about 4.5%.

9. An antiperspirant cream according to claim 4, wherein the particulate antiperspirant active material is a zirconium aluminum glycine complex.

10. An antiperspirant cream according to claim 9, wherein said zirconium aluminum glycine complex has a high pressure gel permeation chromatography distribution pattern having four or more successive bands wherein the total area under the curve of the first two bands is less than about 2%.

11. An antiperspirant cream according to claim 7, wherein the particulate antiperspirant active material is a zirconium aluminum glycine complex.

12. An antiperspirant cream according to claim 11, wherein said zirconium aluminum glycine complex has a high pressure gel permeation chromatography distribution pattern having four or more successive bands wherein the total area under the curve of the first two bands is less than about 2%.

13. A method for making an antiperspirant cream composition of claim 1, comprising the steps of:

- (a) admixing said volatile silicone oil, said non-volatile emollient, said colloidal silica particulate thickening material and said particulate antiperspirant active, under low-shear conditions, to form a liquid composition having a penetration force value of from about 15 g to about 200 g at 25° C. and 50% relative humidity; and
- (b) milling said liquid mixture, under high shear conditions using a dispersing disk at a tip speed of at least about 8 meters/second.

156
105

