95

ALVARO CASTELLANOS M. & CIA.
ABOGADOS
AGENTES DE LA PROPIEDAD INTELECTUAL
Carrera 9 No. 93-09
Bogotá-Colombia

Señora

Jefe de la División de Nuevas Creaciones

Superintendencia de Industria y Comercio

Ministerio de Desarrollo Económico

E. S. D.

Ref.: Expediente No. **03.036.344**

Solicitud de Patente de Invención para:

"ARTICULO FLEXIBLE ELASTOMERICO Y METODO DE FABRICACION"

Solicitante: **BELLE L. CHOU.**

RESPUESTA AL EXAMEN DE FORMA

Yo, **MARGARITA CASTELLANOS ABONDANO,** mayor de edad, identificada y domiciliada como aparece al pié de mi firma, en atención a su Oficio No. **04097** Notificado por Estado el **22 de Mayo de 2003,** atentamente me permito dar repuesta al mismo de la siguiente manera :

1. **Presentación de los documentos faltantes** :

- Copia auténtica del documento de poder otorgado por el solicitante debidamente notarizado y legalizado por Apostilla, junto con su traducción oficial.
- Sustitución de poder a nombre de **MARGARITA CASTELLANOS.**
- Copia certificada del documento de prioridad **No.10/138,370** de Mayo 2 de 2002, junto con su traducción de carátula y reivindicaciones.

2. **Respuesta a la observación del funcionario examinador** :

2.1 Advierte el funcionario examinador que "se debe aportar la traducción de la solicitud presentada como solicitud colombiana".

Para atender a esta observación me permito aclarar que dicha traducción se presentó con el memorial con número de radicación **03036344 00000001** el **5 de Mayo de 2003** (Anexo fotocopia de dicho memorial).

Cumplido así con lo dispuesto, atentamente solicito a Ud. se continúe con el trámite correspondiente a esta solicitud de Patente de Invención.

Del Señor Jefe,

Margarita Castellanos Abondano
C.C. No. **39.779.654** de Usaquén
T.P.A. No.**70819** del C. Sup. de la Judicatura
Carrera 9 No. 93 - 09 - Santa Fe de Bogotá
Teléfonos: 610 74 80 y 610 74 60

Santa Fe de Bogotá, D.C.,
xgt/4867

ALVARO CASTELLANOS M. & CIA.
ABOGADOS
Carrera 9 No. 93-09
Apartado 6349
Bogotá, D.C. – COLOMBIA

48.97.

Señor

Jefe de la División de Nuevas Creaciones

Superintendencia de Industria y Comercio

Ministerio de Desarrollo Económico

E. S. D.

Ref.: **PODER** conferido por **BELLE L. CHOU**

Yo, **XIMENA CASTELLANOS ABONDANO**, mayor de edad, identificada y domiciliada como aparece al pié de mi firma, atentamente manifiesto a Uds. que sustituyo en la Dra. **MARGARITA CASTELLANOS ABONDANO**, el poder que me confirió **BELLE L. CHOU**, con domicilio en **2845 Whipple Avenue, Union City, CA 94587, ESTADOS UNIDOS DE AMERICA**, debidamente legalizado por Apostilla bajo el No. **160056** el dia **24 de Junio de 2003**, con las mismas facultades que me fueron conferidas, para tramitar la solicitud de Patente de Invención en Colombia, para: **"ARTICULO FLEXIBLE ELASTOMERICO Y METODO DE FABRICACION"**, Expediente No. **03.036.344.**

Del Señor Jefe,

Ximena Castellanos Abondano
C.C. No. **39.773.330** de Usaquén
T.P.A. No. **58.236** del C.S.J.
Carrera 9 No. 93-09 – Bogotá, D.C.
Teléfonos: 6107420 – 6107480

Bogotá, D.C.
XCA/MCA/4667

Acepto

Margarita Castellanos Abondano
C.C. No. **39.779.654** de Usaquén
T.P.A. No. **70.819** del C.S.J.
Carrera 9 No. 93-09 – Bogotá, D.C.
Teléfonos: 6107420 – 6107480

AUTENTICACIÓN DE FIRMA
MEDIANTE COMPARECENCIA PERSONAL
(Art. 84 C.R.C. mod. Decr. 2282 de 1989, art. 1 mod. 38)

Ante el Notario Cuarenta y Uno (41) del círculo
de esta ciudad compareció personalmente:

identificado con C.C.
expedida en: **y tarjeta profesio-**
nal de abogado(a) No. **del Consejo**
Superior de la Judicatura, con documento di-
ligenciado en la presente en este escrito es
suya.

Firma del declarante

En Bogotá D.C. a 16 JUL 2003

AUTORIZÓ ESTA DILIGENCIA EL SUSCRITO NOTARIO

NOTARIA 41
Carrera 12 Nº 93-26
AGUSTÍN MORALES RIVERA

AUTENTICACIÓN DE FIRMA
MEDIANTE COMPARECENCIA PERSONAL
(Art. 84 C.R.C. mod. Decr. 2282 de 1989, art. 1 mod. 38)

Ante el Notario Cuarenta y Uno (41) del círculo
de esta ciudad compareció personalmente:
Margarita Castellanos
identificado con C.C. 39.772.965
expedida en: USAQ **y tarjeta profesio-**
nal de abogado(a) No. 39917 **del Consejo**
Superior de la Judicatura, con documento di-
ligenciado en la presente en este escrito es
suya.

Margarita Castellanos

Firma del declarante

En Bogotá D.C. 16 JUL 2003

AUTORIZÓ ESTA DILIGENCIA EL SUSCRITO NOTARIO

NOTARIA 41
Carrera 12 Nº 93-26
AGUSTÍN MORALES RIVERA

PODER

El (los)
Belle L. Chou

Domiciliados en 2845 Whipple Avenue, Union City, CA. 94587, Estados Unidos de América
Nombran por el presente a XIMENA CASTELLANOS A. y/o MARGARITA CASTELLANOS A. abogadas con oficinas en la Carrera 9 No. 93-09, Bogotá-Colombia para

y para obtener la protección de mi (nuestra) propiedad industrial y con este fin autorizamos a dichos apoderados para que nos representen ante cualesquiera autoridades o personas de los órdenes administrativo, contencioso –administrativo y judicial en todo lo relacionado con los siguientes actos y gestiones:

a) Obtención de patentes de invención, modelos y dibujos industriales; registro de marcas de fabrica, de servicio, colectivas o defensivas y de denominaciones de origen, depósito de nombres y enseñas comerciales; su renovación, prórroga, inscripción de traspaso y cambio de nombre o domicilio, cancelación voluntaria y el registro de licencias de uso de esos derechos;
b) Para la obtención de registros sanitarios;
c) Acciones de oposición, observación, cancelación, nulidad, medidas cautelares y en general los juicios civiles, penales, administrativos o contencioso - administrativos que promovamos o se nos promuevan.

Pudiendo en todos los actos y gestiones arriba mencionados sustituir éste mandato, transigir, desistir, recibir, cancelar, renunciar, aceptar notificaciones y nombrar apoderados judiciales y extrajudiciales.

Dado y firmado hoy 19 de Junio del 2003

en Union City, CA., EE. UU. de A.

por Belle L. Chou

(El notario debe suscribir el documento en la pagina siguiente)

(Se requiere legalización consular o mediante apostilla)

POWER OF ATTORNEY

I (we) the undersigned

Belle L. Chou
Of 2845 Whipple Avenue
Union City, CA 94587 U.S.A.

hereby grant(s) Power of Attorney to XIMENA CASTELLANOS A. and for MARGARITA CASTELLANOS a. attorneys residing at Carrera 9 No. 93-09, Bogotá- Colombia, to

and to obtain the protection of my (our Industrial Property, for which purpose we authorize the said attorneys to represent us before any authorities, or persons, specially those, administrative, contentious and judicial, in all matters concerning the following:

a) Obtainment of patents, models and designs, registration of trademarks, service, collective and defensive marks, and of designations of origin; the deposit of trade names and ensigns; its renewal, extension, recordal of assignments, change of name or domicile, voluntary cancellation, and the registration of licenses of use of the above rights;
b) For the obtainment of Sanitary registrations;
c) Actions of opposition, cancellation, nullity, infringement, granting of licenses; and in general the civil, criminal and administrative suits related to those rights; actions and suits instituted by us or against us;

In all the above matters they may substitute this power of attorney, compromise, desist, cancel, receive, renounce, accept notifications and appoint attorneys in fact, in or out of court.

Given and signed this 19th day of June 2003

in Union City, CA, USA

by

(Notary shall execute on the other side)

(Consular legalization or apostille is required)

ALVARO CASTELLANOS M. & CIA.
ABOGADOS COLOMBIA
Carrera 9 No. 93-09- P.O.Box 6349 - Bogotá, Colombia
Tels.: (571) 610 74 20 / 60 / 80 - Fax (571) 610 07 06 - e-mail acastell@impsat.net.co

Esta copia coincide con el original que tuve a la vista.
Bogotá, D.C.
15 JUL 2003
AGUSTIN MORALES RIVERA
NOTARIO CUARENTA Y UNO

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ALIF RNIA ALL-PURPOSE A KN WLEDGMENT

State of California

County of Santa Clara

On June 19, 2003 (Date) before me, Otto O. Lee, Notary Public (Name and Title of Officer (e.g., "Jane Doe, Notary Public"))

personally appeared Belle L. Chou (Name(s) of Signer(s))

☒ personally known to me ~~— OR —~~ ☐ ~~proved to me on the basis of satisfactory evidence~~ to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

OTTO O. LEE
Commission # 1296511
Notary Public - California
Santa Clara County
My Comm. Expires Mar 25, 2005

WITNESS my hand and official seal.

Otto O. Lee
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: Power of Attorney - Columbia

Document Date: June 19, 2003 Number of Pages: 1(one)

Signer(s) Other Than Named Above: NONE

Capacity(ies) Claimed by Signer(s)

Signer's Name: Belle L. Chou	Signer's Name:
☒ Individual	☐ Individual
☐ Corporate Officer	☐ Corporate Officer
Title(s):	Title(s):
☐ Partner — ☐ Limited ☐ General	☐ Partner — ☐ Limited ☐ General
☐ Attorney-In-Fact	☐ Attorney-In-Fact
☐ Trustee	☐ Trustee
☐ Guardian or Conservator	☐ Guardian or Conservator
☐ Other:	☐ Other:
Top of thumb here	Top of thumb here
Signer Is Representing:	Signer Is Representing:

Esta copia coincide con el que tuve a la vista.
Bogotá, D.C.
15 JUL 2003
AGUSTIN MORALES RIVEIRA
NOTARIO CUARENTA Y UNO

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L04 100

State of California

SECRETARY OF STATE

APOSTILLE

(Convention de La Haye du 5 octobre 1961)

1. *Country: United States of America*
   This public document
2. *has been signed by Otto O. Lee*
3. *acting in the capacity of Notary Public, State of California*
4. *bears the seal/stamp of Otto O. Lee, Notary Public, State of California*

CERTIFIED

5. *At Sacramento, California*
6. *the 24th day of June 2003*
7. *by Deputy Secretary of State, State of California*
8. *No. 160056*
9. *Seal/Stamp:*

10. *Signature*

Kevin Shelley

KEVIN SHELLEY
Secretary of State

BY

OFFICE OF THE SECRETARY OF STATE

MP-84 A (REV. 1-03)

Esta copia coincide con el que tuve a la vista.
Bogotá, D.C.
15 JUL 2003
AGUSTI...
NOTARIA ... UNICA

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——————TRADUCCION OFICIAL No. 030704——————

de un documento escrito en INGLES, el cual para su identificación lleva el sello de la Traductora e Intérprete Oficial, Res. 2755/68 y 01144/97 de Minjusticia, al igual que la presente.——————————

(Anexos a un poder de Belle L. Chou)

RECONOCIMIENTO PARA FINES GENERALES

ESTADO DE CALIFORNIA

CONDADO DE SANTA CLARA

Hoy día 19 de Junio de 2003, ante mi Otto o. Lee, Notario Público compareció personalmente Belle L. Chou a quien conozco personalmente como la persona(s) cuyo nombre está suscrito en el instrumento adjunto y reconoció ante mi que había otorgado el mismo en su calidad autorizada y que con su firma en el instrumento, la persona o entidad en nombre de la cual actuó dicha persona, otorgó el instrumento.

DA FE mi firma y sello oficial.

(filo) ilegible

Firma del Notario

(Sello): OTTO O. LEE

Comisión No. 1298511

Notario Público – California

Condado de Santa Clara

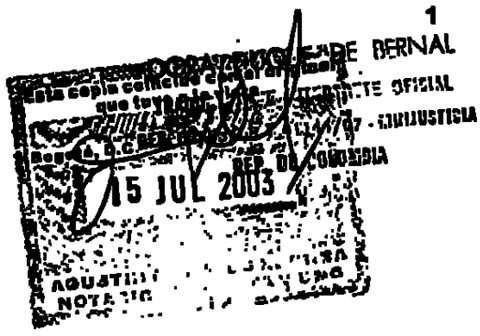
Mi comisión vence Marzo 25, 2006

INFORMACION OPCIONAL

Descripción del documento adjunto

Título o tipo de documento: Poder – Colombia

1



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Fecha del documento: Junio 19, 2003 Número de páginas: 1 (una)

Firmantes distintos de los nombrados arriba: ninguno.

Capacidad que ostenta el firmante:

Nombre del firmante: Belle L. Chou

(x) persona natural

() Funcionario de sociedad – Cargo:

() Socio – () Limitado () general

() Apoderado

() Síndico

() Guardador o Conservador

() OTRO

El firmante representa a:——— (resto en blanco)

ESTADO DE CALIFORNIA

SECRETARIO DE ESTADO

APOSTILLA

(Convención de La Haya del 5 de Octubre 1961)

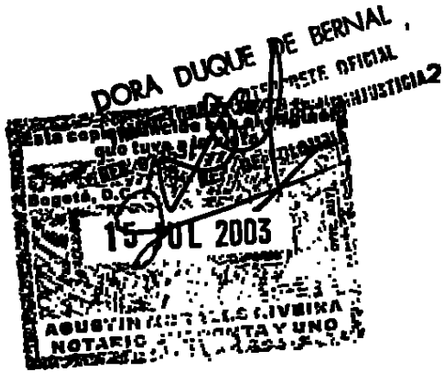
1. País: Estados Unidos de América

   Este documento público

2. Ha sido firmado por Otto O. Lee
3. Actuando en su carácter de Notario Público, Estado de California
4. Lleva el sello de Otto O. Lee, Notario Público, Estado de California .

CERTIFICADO

5. EN Sacramento, California



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6. El día 24 de Junio de 2003

7. por el Secretario de Estado Delegado, Estado de California

8. No. 160056

9. Sello: (sello)

10. Firma

(fdo) Kevin Shelley

KEVIN SHELLEY

Secretario de Estado

Por (fdo) ilegible

ES TRADUCCION FIEL Y COMPLETA, A LA CUAL ME REMITO,

Bogotá, Julio 3, 2003.

DORA DUQUE DE BERNAL
TRADUCTORA E INTERPRETE OFICIAL
RES. 02755/68 Y 01144/97 - MINJUSTICIA
REP. DE COLOMBIA

3

Esta copia coincide con el original que tuve a la vista.
Bogotá, D.C.
15 JUL 2003
AGUSTIN GONZALEZ RIVEIRA
NOTARIO CUARENTA Y UNO

MINISTERIO DE RELACIONES EXTERIORES

041791

CUYA FIRMA APARECE EN EL DOCUMENTO DESEMPEÑA LAS FUNCIONES INDICADAS

NO SE ASUME RESPONSABILIDAD DEL TEXTO

2003 JUL -4 A 11:54

JEFE DE LEGALIZACIONES
SANTAFE DE BOGOTA D.C.

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LOS ESTADOS UNIDOS DE AMERICA

A TODOS AQUELLOS A QUIENES LA PRESENTE VINIERE:

DEPARTAMENTO DE COMERCIO DE LOS ESTADOS UNIDOS
Oficina de Patentes y Marcas de los Estados Unidos

Junio 06, 2003

Por la presente se certifica que lo que obra anexo a ésta es copia fiel de los registros en la Oficina de Patentes y Marcas de los Estados Unidos de aquellos escritos de la solicitud de patente más adelante identificada que reunió los requisitos para que se le concediera una fecha de presentación sobre la base de 35 USC 111.

Número de Solicitud: **10/138.370**

Fecha de Presentación: **Mayo 2, 2002**

Por autoridad del
Comisionado de Patentes y Marcas

W. MONTGOMERY
Funcionario certificante

(Hay un sello-oblea)

Las reivindicaciones son las siguientes:

1. Un artículo que incluye un guante protector desechable, teniendo el guante protector desechable una superficie interior y
una preparación colocada sobre la superficie interior del guante protector desechable, donde la preparación incluye una substancia antimicrobiana y donde la preparación incluye un amortiguador que ayuda a resistir cambios en el pH mientras que el guante protector desechable se use.

2. El artículo de acuerdo con la reivindicación 1 donde la substancia antimicrobiana es acídica durante el período mientras que esté en uso el guante protector y donde la acidez de la substancia antimicrobiana contribuye substancialmente a las propiedades antimicrobianas de la substancia antimicrobiana.

3. El artículo de acuerdo con la reivindicación 2 donde la preparación tiene un pH en un rango de 4.5 a 5.8 durante el período en el cual la preparación esté húmeda

4. El artículo de acuerdo con reivindicación 2 donde la substancia antimicrobiana incluye un ácido que existe naturalmente en una planta.

5. El artículo de acuerdo con reivindicación 2 donde la substancia antimicrobiana incluye un ácido alfa-hidroxilico.

6. El artículo de acuerdo con la reivindicación 1 donde la preparación ha sido deshidratada sobre la superficie interior del guante protector.

7. El artículo de acuerdo con la reivindicación 6, donde la substancia antimicrobiana es activada por humedad de la perspiración manual durante el uso del guante protector.

8. El articulo de acuerdo con la reivindicación 7, donde la preparación tiene un pH de 4.5 a cerca de 6 mientras el artículo está siendo usado.

9. El artículo de acuerdo con la reivindicación 6, donde antes de completar la deshidratación de la preparación sobre la superficie interior del guante protector, la preparación incluía un ácido en un rango de cerca de 0.1% a cerca del 20% en relación a su peso.

10. El artículo de acuerdo con la reivindicación 6, donde antes de terminar la deshidratación de la preparación sobre la superficie interior del guante protector, la preparación incluía un ácido en un rango de cerca del 0.2% hasta el 5% en relación a su peso.

11. El artículo de acuerdo con la reivindicación 1, donde el amortiguador incluye a un ácido orgánico débil y una base conjugada del ácido orgánico débil.

12. El artículo de acuerdo con la reivindicación 13, donde el amortiguador incluye un aminoácido y una sal de aminoácido.

13. El artículo de acuerdo con la reivindicación 1, donde la substancia antimicrobiana incluye un ácido que existe en forma natural en una planta comestible.

14 El artículo de acuerdo con la reivindicación 1, donde el artículo en su forma terminada y tal como sería puesto por el usuario final, ha sido colocado en una cámara con una temperatura arriba de los 30°C y con humedad del 100% y una presión normada con duración mínima de 30min., la preparación tiene un pH dentro del rango de 3.8 a 6.0

15. El artículo de acuerdo con la reivindicación 1, donde el guante protector desechable es fabricado de un material seleccionado entre un grupo que consiste en material resinoso y un material de polímero.

16. El artículo de acuerdo con la reivindicación 1, donde la preparación es distribuida en forma pareja sobre la superficie interior del guante desechable.

17. El artículo de acuerdo con la reivindicación 1, donde la preparación no incluye un antiperspirante.

18. El artículo de acuerdo con la reivindicación 1, donde el guante protector desechable no tiene ninguna capa de material poroso.

19. El artículo que incluye un guante protector desechable que tiene una superficie interior y
una preparación colocada, durante la manufactura del artículo, sobre la superficie interior del guante protector desechable y donde la preparación incluye una substancia antibacteriana y donde la preparación incluye un amortiguador que ayuda a resistir cambios en el pH mientras que el guante protector desechable sea utilizado.

20. El artículo de acuerdo con la reivindicación 19, donde el amortiguador incluye un ácido inorgánico débil y una base conjugada del ácido inorgánico débil.

21. El artículo de acuerdo con la reivindicación 19, donde el amortiguador incluye a un ester de fosfato cuartenizado.

22. El artículo de acuerdo con la reivindicación 19, donde la substancia antibacteriana incluye un ácido que existe en forma natural en forma comestible, resultando que la preparación incluye substancialmente ninguna substancia antibacteriana que no sea el ácido que existe en forma natural en una planta comestible.

23. El artículo de acuerdo con la reivindicación 19, donde la substancia antibacteriana incluye un ácido orgánico.

24. El artículo de acuerdo con la reivindicación 23, donde la substancia antibacteriana incluye un ácido hidroxílico.

25. El artículo de acuerdo con la reivindicación 19, donde la substancia antibacteriana incluye un ácido seleccionado de un grupo que consiste en una ácido alifático, un ácido aromático, un ácido salicilico, componentes aromáticos y alifáticos, ácidos alfa-hidroxílicos, ácido glicólico, ácido citrico, ácido láctico, ácido tartárico, ácido málico, ácido hidroxicaprílico, ácido mandélico, ácido leucico, ácido azeláico, ácido etilglicolico, ácidos beta-hidroxilicos, ácido salicilico, ácido beta-hidroxipropionico, y ácido beta-hidroxibutirico, ácido monocarboxílico, ácido dicarboxilico, ácido policarboxilico, acido glucuronico, ácido glutámico, ácido galacturónico de alantoína, ácido gliciretinico de alantoína, ácido poligalacturónico de alantoína, aminoácidos de la colágena animal, aminoácidos de la elastina animal, aminoácidos de la keratina animal, ácido aspártico, ácido fólico, ácido hialurónico, ácido linoléico, ácido linolénico, ácido orótico, aminoácidos de palmitoila de la colágena animal, ácido ribonucléico, aminoácido de la seda, ácido úrico, ácido urocánico, ácido dilinoleico, ácido trilinoleico, alanina, ácido 6-aminocapróico, arginina, esparagina, carbocisteina, cisteina, cistina, glicina, histidina, hidroxiprolina, isoleucina, leucina, licina, metionina, fenilalanina, prolina, serina, treonina, triptofano, tirosina, biotina, ácido o-cresótico, ácido gliciretinico, ácido gleicirihizico, ácido de lanolina, y mezclas de los anteriores como también ácidos carboxilicos, aminoácidos o cualquier ácido orgánico que tenga un átomo hidrogenatado ionizable.

26. El artículo de acuerdo con la reivindicación 19, donde la preparación está constituida de tal manera que tenga un pH dentro de un rango de 3.8 hasta cerca de 6 durante el período que la preparación esté húmeda.

27. El artículo de acuerdo con la reivindicación 19, donde la preparación se colocó sobre el guante de examinación desechable pero no en forma de polvo.

28. El artículo de acuerdo con la reivindicación 19, donde la preparación se coloca sobre la superficie interior del guante de examinación desechable debido en parte por el efecto proporcionado por la deshidratación.

29. El artículo de acuerdo con la reivindicación 28, donde antes de completar la deshidratación de la preparación sobre la superficie interior del guante protector, la preparación incluye un ácido en un rango del 0.2 hasta el 10% en relación a su peso.

30. El artículo de acuerdo con la reivindicación 19, donde la preparación no incluye ningún antiperspirante seleccionado de un grupo que consiste en glicina tetracloro-hidrexica de aluminio-zirconio, alcloxa, cloruro de aluminio, clorohidrexo de aluminio, PCA de aluminio, clorhidratos de zirconio, tetraclorhidratos de aluminio-circonio y clorhidratos de aluminio.

31. El artículo de acuerdo con la reivindicación 19, donde la preparación además incluye una substancia para la protección de la piel.

32. El artículo de acuerdo con la reivindicación 31, donde la substancia para la protección de la piel incluye Aloe Vera deshidratada.

33. El artículo de acuerdo con la reivindicación 31, donde la preparación incluye ninguna otra substancia par la protección de la piel que no sea Aloe Vera.

34. El artículo de acuerdo con la reivindicación 31, donde la substancia para protección de la piel incluye una loción deshidratada.

35. El artículo de acuerdo con la reivindicación 19, donde la preparación no incluye Aloe Vera.

36. El artículo de acuerdo con la reivindicación 19, donde la preparación incluye un espesante.

37. El artículo de acuerdo con la reivindicación 36, donde el espesante es seleccionado de un grupo qûe consiste en ácido poliacrílico, poliacrilato, ácido polimetacrílico, poliacreilamida, alginato de sodio, como también gelatina, goma de xantham, acacia, celulosa corboximetílica aga, sal de celulosa carboximetílica, alcohol polivinílico, acetal polivinílico, polivinilpirrolidona, silicato de magnesio-

aluminio, octenilsuccinato de almidón de aluminio,polímero solubles en agua, como son polivinilalcohol, polibuteno, glicolpolietileno, o un polietilenimino, goma, goma de xanthan, hidroetilcelulosa, goma de karaya, carrageenen, guar hidroxipropílico, metilcelulosa, goma de tragacanto e hidroxipropilcelulosa.

38. El artículo de acuerdo con la reivindicación 19, donde el guante protector desechable está hecho de una sola capa de látex de hule natural, acrilonitrilo, vinilo o cloruro de polivinilo.

39. El artículo de acuerdo con la reivindicación 19, donde la preparación forma una capa con un grosor de cerca de 0.01mm.

40. El artículo de acuerdo con la reivindicación 19, donde la preparación forma una capa de un grosor que tiene aproximadamente un 1/16 del grosor del guante protector desechable.

41. El artículo de acuerdo con la reivindicación 19, donde el guante protector desechable no contiene ningún material absorbente.

42. El artículo de acuerdo con la reivindicación 19, donde la substancia antibacteriana es constituida de tal manera que se activará por la perspiración de la piel.

43. El artículo de acuerdo con la reivindicación 19, donde la preparación no incluye substancia alguna a base de aceite que pueda detectarse.

44. Un guante protector que incluye
solamente una sola capa de material flexible e impermeable para líquidos que tiene una superficie interior y forma una cavidad donde recibir una mano y
una preparación antimicrobiana aplicada a la superficie interior donde Aloe Vera no se ha aplicado sobre la superficie interior y donde la preparación antimicrobiana fue aplicada previamente en la fábrica sobre la superficie interior.

45. El artículo de acuerdo con la reivindicación 44, donde la preparación antimicrobiana incluye un ácido.

46. El artículo de acuerdo con la reivindicación 45, donde el guante protector es un guante médico desechable.

PTO 1021308

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

June 06, 2003

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APPLICATION NUMBER: ***10/138,370***
FILING DATE: ***May 02, 2002***

By Authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS

W. MONTGOMERY
Certifying Officer

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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	SHENW.PT2
First Inventor	Belle L. Chou
Title	An Elastomeric Flexible Article and Manufacturing Method
Express Mail Label No.	EL682842307US

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231

1. [X] Fee Transmittal Form (e.g., PTO/SB/17) *(Submit an original and a duplicate for fee processing)*
2. [X] Applicant claims small entity status. See 37 CFR 1.27.
3. [X] Specification [*Total Pages* 38] *(preferred arrangement set forth below)*
   - Descriptive title of the invention
   - Cross Reference to Related Applications
   - Statement Regarding Fed sponsored R & D
   - Reference to sequence listing, a table, or a computer program listing appendix
   - Background of the Invention
   - Brief Summary of the Invention
   - Brief Description of the Drawings *(if filed)*
   - Detailed Description
   - Claim(s)
   - Abstract of the Disclosure
4. [X] Drawing(s) *(35 U.S.C. 113)* [*Total Sheets* 01]
5. Oath or Declaration [*Total Pages* 04]
   a. [X] Newly executed (original or copy)
   b. [ ] Copy from a prior application (37 CFR 1.63 (d)) *(for continuation/divisional with Box 18 completed)*
      i. [ ] DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
6. [ ] Application Data Sheet. See 37 CFR 1.76
7. [ ] CD-ROM or CD-R in duplicate, large table or Computer Program *(Appendix)*
8. Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all necessary)*
   a. [ ] Computer Readable Form (CRF)
   b. Specification Sequence Listing on:
      i. [ ] CD-ROM or CD-R (2 copies); or
      ii. [ ] paper
   c. [ ] Statements verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

9. [ ] Assignment Papers (cover sheet & document(s))
10. [ ] 37 CFR 3.73(b) Statement *(when there is an assignee)* [X] Power of Attorney
11. [ ] English Translation Document *(if applicable)*
12. [ ] Information Disclosure Statement (IDS)/PTO-1449 [ ] Copies of IDS Citations
13. [ ] Preliminary Amendment
14. [X] Return Receipt Postcard (MPEP 503) *(Should be specifically itemized)*
15. [ ] Certified Copy of Priority Document(s) *(if foreign priority is claimed)*
16. [ ] Nonpublication Request under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.
17. [ ] Other: .....

18. If a CONTINUING APPLICATION, *check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:*

[ ] Continuation [ ] Divisional [ ] Continuation-in-part (CIP) of prior application No: _____/_____

Prior application information: Examiner _____ Group/Art Unit: _____

For CONTINUATION OR DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

[ ] Customer Number or Bar Code Label [redacted] or [X] Correspondence address below

Name	Otto O. Lee				
Address	12 South First Street, Suite 1205				
City	San Jose	*State*	CA	*Zip Code*	95113
Country	U.S.A.	*Telephone*	408-286-8933	*Fax*	408-286-8932

Name (Print/Type)	Juneko Jackson	*Registration No. (Attorney/Agent)*	46,870
Signature		*Date*	5/02/02

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Washington, D.C. 20004

May 2, 2002

VIA EXPRESS MAIL
EL682842307US

Commissioner of Patents and Trademarks
Box Patent Application
Washington, D.C. 20231

Re: UTILITY PATENT APPLICATION
For: An Elastomeric Flexible Article and Manufacturing Method
Applicant: Belle L. Chou
Our File No.: SHENW.PT2

Dear Sir:

Transmitted herewith is the utility patent application:

Inventor: Belle L. Chou
For: AN ELASTOMERIC FLEXIBLE ARTICLE AND MANUFACTURING METHOD

Please find enclosed the following:

1) a cover sheet;
2) a utility transmittal letter;
3) a fee transmittal;
4) an application of 38 pages: a specification (29 pages), a set of claims (46 total, 8 pages), an abstract (1 page), a drawing (1 sheet),
5) a copy of the joint declaration/power of attorney by the inventor;
6) a check of $604.00 to cover the filing fee and the excess claim fee for the patent application identified above (small entity); and
7) a return receipt postcard.

The commissioner is hereby authorized to charge any additional fees which may be required or credit any overpayment to Deposit Account Number 501037.

110
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Sincerely,
INTELLECTUAL PROPERTY LAW GROUP LLP

Juneko Jackson (Reg. No. 48,870)

Enclosures

CERTIFICATE OF EXPRESS MAIL

"EXPRESS MAIL" mailing label number: EL682842307US Date of Deposit: 5/2/02

I hereby certify that the above-identified documents, which are attached, are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 C.F.R. ' 1.10 on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Box Patent Application, Washington, D.C. 20231.

Beatrice Yu
Name of Person Mailing Paper or Fee

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Signature

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PTO/SB/17 (10-01)
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FEE TRANSMITTAL for FY 2002

Patent fees are subject to annual revision.

Complete If Known	
Application Number	
Filing Date	
First Named Inventor	Belle L. Chou
Examiner Name	
Group Art Unit	
Attorney Docket No.	SHENW.PT2

TOTAL AMOUNT OF PAYMENT ($) 604

METHOD OF PAYMENT

1. [X] The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:

Deposit Account Number: 50-1037

Deposit Account Name: IP Law Group

[X] Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17

[X] Applicant claims small entity status. See 37 CFR 1.27

2. [X] Payment Enclosed:

[X] Check [ ] Credit card [ ] Money Order [ ] Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
101	740	201	370	Utility filing fee	370
106	330	206	165	Design filing fee	
107	510	207	255	Plant filing fee	
108	740	208	370	Reissue filing fee	
114	160	214	80	Provisional filing fee	

SUBTOTAL (1) ($) 370

2. EXTRA CLAIM FEES

			Extra Claims		Fee from below		Fee Paid
Total Claims	46	-20** =	26	X	9	=	234
Independent Claims	3	- 3** =	0	X		=	
Multiple Dependent						=	

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
103	18	203	9	Claims in excess of 20
102	84	202	42	Independent claims in excess of 3
104	280	204	140	Multiple dependent claim, if not paid
109	84	209	42	** Reissue independent claims over original patent
110	18	210	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 234

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for *ex parte* reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	400	216	200	Extension for reply within second month	
117	920	217	460	Extension for reply within third month	
118	1,440	218	720	Extension for reply within fourth month	
128	1,960	228	980	Extension for reply within fifth month	
119	320	219	160	Notice of Appeal	
120	320	220	160	Filing a brief in support of an appeal	
121	280	221	140	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,280	241	640	Petition to revive - unintentional	
142	1,280	242	640	Utility issue fee (or reissue)	
143	460	243	230	Design issue fee	
144	620	244	310	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Processing fee under 37 CFR 1.17(q)	
126	180	126	180	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	
146	740	246	370	Filing a submission after final rejection (37 CFR § 1.129(a))	
149	740	249	370	For each additional invention to be examined (37 CFR § 1.129(b))	
179	740	279	370	Request for Continued Examination (RCE)	
169	900	169	900	Request for expedited examination of a design application	

Other fee (specify) ____________

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($)

SUBMITTED BY				Complete (if applicable)	
Name (Print/Type)	Junako Jackson	Registration No. (Attorney/Agent)	48,870	Telephone	408-286-8933
Signature	[signature]			Date	5/02/02

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AN ELASTOMERIC FLEXIBLE ARTICLE AND MANUFACTURING METH D

BY

Belle L. Chou

BACKGROUND

[0001] The present invention relates to elastomeric flexible articles, for example, gloves or the like.

[0002] Disposable gloves, for example, disposable examination gloves, have been widely used as a protective measure to insulate hands from objects handled by the glove wearer. To allow ease in handling objects, disposable gloves typically are made of thin and elastic material to minimize the space between the skin and the glove. Due to poor air circulation resulting from a tight fit, hand perspiration can be a common problem among glove wearers. Prolonged wearing of disposable gloves can cause a moist environment on the surface of the hand that allows viruses, bacteria, yeast, fungus and other infectious agents to grow and multiply. Itchiness and irritation can be a frequent result of wearing disposable examination gloves for extended periods.

[0003] Powders are commonly used on the inner surface of disposable gloves to alleviate perspiration and to make donning, wearing and removal of gloves easier. However, there are several disadvantages that can be associated with powders. Continuous perspiration can easily overwhelm the thin layer of powder that is commonly attached to the surface of the glove. This is especially the case when continuous and frequent wearing of gloves is required. For example, dentists may

continuously wear gloves during a dental surgical procedure for up to 40 minutes or more. In addition, hand washing is necessary after the use of powdered gloves. Frequent hand washing to remove powders is inconvenient and may also cause excessive dryness of the skin.

[0004] Aside from gloves intended primarily to protect the hand during performing of tasks, special-purpose gloves have been constructed that are intended primarily to surround the hand with lotions to condition and sooth the skin. Typically, these gloves contain multiple layers in the glove design. For example, these moisturizing gloves can contain a middle layer saturated with lotion and a porous inner layer that allows the lotion to pass through and contact the user's skin. See U.S. Pat. No. 5,614,202. Other examples of moisturizing gloves can contain an inner lining made of a lotion absorbent material. By impregnating the lotion into the absorbent material, the lotion can condition the hands while the gloves are worn. See U.S. Pat. Nos. 4,186,445 or 4,185,330.

[0005] Compared to single layer disposable gloves, the complex design of multiple layer gloves can make their production far more costly. More importantly, the thickness of the layers and the complicated structures of the gloves can hinder hand flexibility and sensitivity when the glove wearer tries to pick up and manipulate objects. Such multiple layer designs can be suitable for moisturizing hands, but are generally not suitable for use in manipulating objects, especially for professions that require performing of fine tasks with precision.

[0006] In order to treat or protect skin, some people apply lotions, creams, or powders onto their skin, for example, onto their hands. Some people apply such lotions, creams, or powders immediately before donning disposable gloves to perform fine tasks. See, for example, International Patent Application No. WO94/12115. However, separate

application f the preparations by users remains unsatisfactory in a variety of ways.

[0007] For example, the extra step of separately applying such preparations by a glove user is inconvenient. The extra step also tends t be omitted, due to forgetfulness and/or inconvenience. Further, manual application by the user can result in application of inconsistent quantities of the preparations or significantly uneven distributions of the preparations. Applying too much or uneven distributions of a preparation can lead to discomfort or unfamiliar inhibition of hand dexterity or sensitivity. Applying too little of a preparation can lead to insufficient beneficial effect. Further, use of powders within gloves has drawbacks, as has been discussed; such drawbacks are especially pronounced if the amount or distribution of the powder is not or cannot be well controlled, for example due inappropriate reliance on a mere ordinary glove user to apply the powder. Even aside from other drawbacks of using powder, if an ordinary glove user applies too much powder or poorly distributed powder into a glove, the powder can actually start falling out of the glove during use, which can be unacceptable.

[0008] Still further, conventional skin preparations for gloves may be incapable of prolonged effectiveness within gloves, in the presence of accumulating perspiration and other substances that can overwhelm the preparations. Still further, conventional skin preparations for gloves may contain substances that are undesirable to some users for some applications, for example, substances that are unfamiliar to users (for example, antibacterial agents that do not occur naturally) or substances that are suspected of being harmful (for example, conventional antiperspirants).

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SUMMARY

[0009] There exists a need for elastomeric flexble articles, for example, gloves or the like, for example, disposable examination gloves or the like, that apply helpful substances to skin during use.

[0010] According to an embodiment of the present invention, an article includes: a disposable protective glove, the disposable protective glove having an interior surface; and a preparation disposed on the interior surface of the disposable protective glove, wherein the preparation includes an anti-microbial substance, and wherein the preparation includes a buffer that helps resist change in pH during wearing of the disposable protective glove.

[0011] According to another embodiment of the present invention, an article includes: a disposable protective glove, the disposable protective glove having an interior surface; and a preparation disposed, during factory production of the article, on the interior surface of the disposable protective glove, wherein the preparation includes an anti-bacterial substance, and wherein the preparation includes a buffer that helps resist change in pH during wearing of the disposable protective glove.

[0012] According to another embodiment of the present invention, a protective glove includes: only a single layer of a fluid-impermeable flexible material having an inner surface and forming a cavity to receive a hand; and an anti-microbial preparation coated on the inner surface, wherein no aloe vera is coated on the inner surface, and wherein the anti-microbial preparation was factory pre-coated onto the inner surface.

[0013] According to other embodiments of the present invention, there is a method for making any glove according to any embodiment of the present invention.

DESCRIPTION OF THE DRAWINGS

[0014] Features, aspects and advantages of some embodiments of the present invention will become better understood with reference to the accompanying drawings, which are not to be considered limitations in the scope of the invention, but are merely illustrative.

[0015] FIG. 1 shows a front perspective view of one embodiment of the present invention, in which the elastomeric flexible article is a glove.

[0016] FIG. 2 is a sectional view of the elastomeric flexible article shown in FIG 1.

DETAILED DESCRIPTION OF SPECIFIC EMBODIMENTS

[0017] The description above and below and the drawings of the present document discuss one or more currently preferred embodiment(s) and also describe some exemplary optional feature(s) and alternative mbodiment(s). The description and drawings are for the purpose of illustration and not limitation. Section titles are terse and are for convenience and not limitation.

[0018] According to an embodiment of the present invention, there is provided an elastomeric flexible article. According to an embodiment of th present invention, there is provided a method of manufacturing.

[0018] As illustrated in FIGS. 1 and 2, an elastomeric flexible article according to some embodiments of the present invention has a preparation 10 on the inner surface of the elastomeric flexible article. The flexible article is shown as a glove in FIGS. 1 and 2, but other forms of articles may also be be used. During use, the coated inner surface of the lastomeric flexible article is in contact with human skin and intermingles with perspiration from the skin and, due to presence of the preparation

10, has a property of being anti-bacterial, anti-fungal, or anti-viral, or a combinati n thereof.

[0019] For example, the coated inner surface in contact with human skin is more anti-bacterial, anti-fungal, and/or anti-viral than it would be if it were bare and not coated with the preparation 10. The preparation 10 is an anti-bacterial, anti-fungal, and/or anti-viral preparation. Preferably, the preparation 10 is an anti-bacterial, anti-fungal, and/or anti-viral preparation that has been dehydrated. The preparation 10 may be attached onto the inner surface of the elastomeric flexible article due to an affiliation force provided by dehydration of the preparation 10.

[0020] In some embodiments of the present invention, the elastomeric flexible article is a protective glove. For example, the glove may be embodied as a disposable examination glove made of a single layer of fluid-impermeable material, which is simple and convenient to use and allows the user to wear the glove and to perform fine tasks with precision. For example, the protective glove may be embodied as a glove without any layer of porous material overlying the hand, e.g., without any layer of porous material. For example, the protective glove may be embodied to be without any absorbent material overlying the hand, e.g., without any absorbent material.

[0021] The protective glove can be made of various materials to form a layer 12. To those of ordinary skill in the art, resinous materials such as vinyl or the like or polymer materials such as acrylonitrile or the like are common choices. Three commonly used materials for making disposable gloves are natural rubber latex, acrylonitrile, and polyvinyl chloride, although any other elastomeric material may also be used. Still other materials, for example, polyurethane, chloroprene, neoprene, butadiene, or the like, or any elastomeric material known to those with ordinary skill in

the art may also b used. Preferably, the preparation is evenly distributed on the interior surface of the disposabl protective glove.

[0022] According to one embodiment of the present invention, during use of the glove, the environment encountered by the hand within the gl ve is acidic, due to presence of the preparation. For example, the preparation may be an acidic preparation that has been dried onto the inner surface of the glove, and perspiration from the hand moistens the dried acidic preparation. The acidic preparation may be a mixture that includes an acidic solution, and the mixture may, but need not, itself be a solution. Preferably, the preparation contains a buffer, to help maintain the pH and stabilize pH drift. Whether or not the preparation was dried onto the inner surface of the glove, the preparation during use is acidic in the embodiment. Preferably, the pH of the preparation during use is lower than about 6, for example, between about 3.8 to about 6, or, more preferably, between about 4.5 to about 6, or between about 5 to about 5.8. Preferably, the preparation is formulated to maintain pH within the desired range even after some prolonged use, e.g., even after some prolonged perspiration.

[0023] One embodiment of the invention is formulated such that, when exposed to increased moisture over time, pH within a desired range is still successfully obtained. For example, pH within an above-discussed desired range is still successfully obtained using, for example, the following test scenario or its like. According to a test scenario, the preparation (for example, the dried preparation) upon a glove's surface is exposed to a moist environment. For example, the glove is placed into a chamber having high humidity for some duration of time. The humidity moistens the pr paration. If pH is then measured on the moist preparation, the measurement result is an acidic pH, for example, of between 3.8 and 6, or, more preferably, between 4.5 to 6 or between 5 to 5.8. For example,

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the high humidity may be about 100% humidity; the temperature in th chamber may be at least 30 degrees Celsius; th durati n of tim may be at least about 30 minutes; the pressure in the chamber may be at least standard pressure (i.e., at least one bar) through the duration; pH may be measured using any conventional system, for example, a conventional probe-type or litmus-paper-type system; and the glove may be arranged inside out, with its coated surface facing outward, for example, supported by a hand-shaped mechanical form onto which the inside-out glove is "worn". Other test scenarios, for example, similar scenarios, may also be used.

[0024] Prolonged contact between latex and oil-based substances can adversely affect durability and flexibility of the latex. Most commercially available lotions typically contain oil-based substances. The use of such conventional lotions can substantially shorten the shelf life of a latex glove.

[0025] In one embodiment of the present invention, the elastomeric flexible article is a disposable glove, coated as discussed above, and th glove is made of natural rubber latex. In this embodiment, the preparation preferably does not contain any oil-based substances that would be conventionally detectable and that would come into contact with the glove. Optionally, the preparation also does not contain any oil-based substances that would be conventionally detectable and that would come into contact with skin during use.

[0026] Another embodiment of the present invention is a glove, coated according to any discussion in the present document, in which the underlying glove is made of acrylonitrile polymer. As mentioned above, in still other embodiments, a glove is made of still any other elastomeric material, coated according to any discussion in the present document.

[0027] The preparation may be disposed onto the elastomeric flexible article by any manner whatsoever. For example, the preparation may b

disposed ont the elastomeric flexibl article in dry (e.g., powder) or m ist (.g., wet mixture) form. In one embodim nt of th present invention, the preparation is preferably disposed onto the elastomeric flexible article, e.g., glove, in non-powder form. Preferably, the preparation is disposed onto the elastomeric flexible article in non-dry form and then is preferably fully or at least substantially dehydrated. Preferably, the dehydration is c nducted such that the preparation is dehydrated onto the elastomeric flexible article, and such that there is a force provided by the dehydration that attaches the preparation to a surface of the elastomeric flexible article. Preferably, the preparation is disposed onto the elastomeric flexible article during factory production, and not by an end buyer or end owner or end wearer of the article.

[0028] In wet form, the preparation preferably includes, as mentioned above, an acidic solution. The acidic solution has pH lower than 7. For example, the acidic solution may have pH lower than about 6. In one embodiment of the present invention, the acidic solution has pH no lower than about 3.8, for example, within the range of about 3.8 to about 6. A pH no lower than about 3.8 is believed to be less likely to irritate skin. In another embodiment of the present invention, the acidic solution has a pH no lower than about 4.5, for example, within the range of about 4.5 to about 6 or within the range of about 4.5 to about 5.8. Or, the acidic solution may have a pH no lower than about 5, for example, within the range of about 5 to about 6 or within the range of about 5 to about 5.8. Such pH no lower than about 4.5 or no lower than about 5 is believed to be less likely to have significant skin-exfoliation properties. Less exfoliation can be desirable in embodiments meant for frequent or prolonged wearing. Despite the mentioned preferred pH ranges, acidic solutions with even lower pH can nevertheless still be used if desired, for example, for intended infrequent or short-duration use, or with other ingredients in

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th preparation that hav been selected according to conventional knowledge t mitigate or ameliorate the potential for skin irritation. Low pH, for example down to about 3.8 or even lower, may also be desired if skin exfoliation is desired.

[0029] In a preferred embodiment of the present invention, the preparation contains, as mentioned above, a buffer to help maintain the pH and stabilize pH drift. Typical buffers include and are not limited to weak inorganic acids with its conjugate base, weak organic acids with its c njugate base, amino acids and amino acid salts, for example. In one embodiment of the present invention, enough buffer will be used, according to conventional knowledge and experience, to exhibit a pH drift of, for example, about 0.15 pH unit or less. However, less or more buffer may also be used. Generally, it is well known to those skilled in the art that quartenized phosphate esters can reduce the pH drift of a solution from about 0.2 to 0.3 pH units to about 0.15. Any competent buffer can be used. Buffers are well known to those of ordinary skill in the art.

[0030] Still further, optionally, thickeners can be used in the preparation to promote more even coating. Typical thickeners used preferably are n n-greasy and non-oily compounds. Exemplary polymers and thickeners are listed in the CTFA Cosmetic Ingredient Handbook, 1st Ed., J. M. Nikitakis ed., The Cosmetic, Toiletry and Fragrance Association, Washington, DC (1988) (hereafter CTFA Handbook), at pages 30, 47, 48, 67 and 97-100, incorporated herein by reference. Example thickening agents include but are not limited to polyacrylic acid, polyacrylate, polymethacrylic acid, polyacreylamide, sodium alginate, gelatin, xantham gum, acacia, aga carboxymethyl cellulose, carboxymethyl cellulose salt, polyvinyl alcohol, polyvinyl acetal, polyvinylpyrrolidone, magnesium aluminum silicate, sold under the tradename VEEGUM and

available in various grades from R. T. Vanderbilt Co., Inc., Norwalk, Conn.; aluminum starch octenylsuccinate; a water-solubl polymer, like a polyvinylalcohol, a polybutene, a polyethylene glycol, or a polyethylenimine; or a gum, like xanthan gum, hydroxyethylcellulose, karaya gum, carrageenen, hydroxypropyl guar, methylcellulose, tragacanth gum, or hydroxypropylcellulose.

[0031] In some embodiments of the invention, the preparation can include other optional ingredients, for example, antiperspirants and/or skin soothing substances, or the like. Skin soothing substances include, for example, skin moisturizing substances or skin anti-irritant substances. In addition, the preparation can also include other optional ingredients, for example, glycerin, which is a water-soluble emollient and emulsion aid, preservatives, fragrances, or dyes, or the like.

[0032] Examples of antiperspirants include aluminum-zirconium tetraclorohydrex glycine, alcloxa, aluminum cloride, aluminum chlorohydrex, aluminum PCA, zirconium chlorohydrates, aluminum zirconium tetrachlorohydrates, and aluminum chlorohydrates, and the lik , or any other antiperspirant, for example, antiperspirants known to those of ordinary skill in the art.

[0033] Examples of skin soothing substances include, for example, a skin moisturizing agent, especially for embodiments of the invention that are not dried onto the glove. Examples also include aloe vera, lotions, creams, and the like.

[0034] In some preferred embodiments of the present invention, the preparation does not include any antiperspirant, for example, no antiperspirant from among aluminum-zirconium tetraclorohydrex glycine, alcloxa, aluminum cloride, aluminum chlorohydrex, aluminum PCA, zirconium chlorohydrates, aluminum zirconium tetrachlorohydrates, and aluminum chlorohydrates.

[0035] In some embodiments of th present invention, th preparation does not includ any skin soothing substance. In som mbodim nts of the present invention, the preparation does not include any aloe vera. In some embodiments of the present invention, the only skin soothing substance in the preparation is aloe vera.

[0036] The acidic solution within the preparation typically includes an organic acid, such as a hydroxycarboxylic acid, herein termed a "hydroxy acid". The acidic solution within the mixture typically includes an alpha-hydroxycarboxylic acid, herein termed an "alpha-hydroxy acid". In accordance with an embodiment of the present invention, the acid solution present typically is a hydroxycarboxylic acid, generally an alpha-hydroxycarboxylic acid, for example, glycolic acid.

[0037] The particular amount of acid included in the preparation is dependent upon the type of acid, the production method and equipment, and the intended end use for the preparation-coated glove, for example, frequent or long-duration wearing, infrequent or short-duration wearing, use primarily to deter infection, or use to deter infection and also to exfoliate skin.

[0038] In one embodiment of the present invention, the preparation contains about 0.1% to about 20% by weight of an acid, before being dry. Toward the higher end of this range, skin exfoliation abilities tends to be greater. In another, more preferred embodiment of the present invention, th preparation contains about 0.1% to about 10% by weight of an acid, before being dry. In another embodiment of the present invention, the preparation contains about 0.2% to about 2% by weight of an acid, before being dry. The acid may be a hydroxy acid, or another type. Whatever the actual concentration or type of acid used, whether explicitly listed herein or not, the invention is preferably embodied so as also to achieve the earlier-discussed desired pH values.

[0039] Generally, cosmet logists and dermatologists use high concentrations of hydroxy acids (for example, 50 to 70 percent by weight) as superficial peels, to smooth rough skin, and to remove fine lines, acne scars, age spots, irregular pigmentation, and precancerous scaly patches. Moderate concentrations of hydroxy acids have typically been seen (for example, 10 to 50 percent by weight) to help control acne by unplugging pores, and to enhance the effectiveness of Retin-A and skin bleaches. However, at these concentrations, the hydroxy acid-containing products ften provide dramatic results, but the potential to irritate or burn the skin is high. At hydroxy acid concentrations of, for example, 30% by weight or more, the compositions are capable of chemically burning the skin.

[0040] Accordingly, it is helpful to balance the acidic nature of an acidic solution with the skin-irritation potential of the solution. Many acid-containing compositions, including hydroxy acid-containing compositions, ften warn the user that a tingling or burning sensation may be felt after th first several applications of the composition to the skin. In accordance with some embodiments of the present invention, it is preferable to provide an elastomeric flexible article, such as a disposabl gl ve, that minimizes or avoids the tingling or burning sensation or irritation that can be associated with chemical burns due to acids, yet provide the beneficial antibacterial, anti-fungal, antiviral effects of these acids.

[0041] The hydroxy acid, or any other organic acid, in the acid solution can be present in the free acid form, in the salt form, or as a mixture of the free acid and salt form. Often, the acid is present as a mixture of the free acid form and salt form in order to provide a solution having a pH in a desired range, such as those mentioned above. When the hydroxy acid is present in the salt form, the hydroxy acid is neutralized with a water-soluble alkali until the desired pH is achieved. The water-soluble alkali can be for example, ammonia or ammonia hydroxide, a water-soluble amine,

or an alkali metal hydroxide. Preferred water-soluble alkalis include but are not limited to ammonia, ammonium hydroxide, diethanolamine, triethylamine, methylamine, triethanolamine, potassium hydroxide, sodium hydroxide, lithium hydroxide, or a primary, secondary or tertiary amine having alkyl or hydroxyalky groups containing one to three carbon atoms.

[0042] In accordance with an embodiment of the present invention, the hydroxy acid in the acidic solution may be any acid. For example, the hydroxy acid can be an aliphatic acid, e.g., glycolic acid; an aromatic acid, e.g., salicylic acid; or have aromatic and aliphatic components, e.g., mandelic acid. Exemplary hydroxy acids include the alpha-hydroxy acids, such as, but not limited to, glycolic acid, citric acid, lactic acid, tartaric acid and malic acid. These alpha-hydroxy acids are naturally-occurring acids found in fruit, and have been used in skin care and skin treatment compositions for several years. It has been theorized that glycolic acid and lactic acid are the most effective alpha-hydroxy acids, if exfoliation is desired, because these acid molecules are small and more able to penetrate skin. Hydroxycaprylic acid is a synthetic alpha-hydroxy acid that has been used in skin care compositions. Other useful alpha-hydroxy acids are, for example, mandelic acid, leucic acid, azelaic acid and ethylglycolic acid.

[0043] Beta-hydroxy acids, like salicylic acid, beta-hydroxypropionic acid and beta-hydroxybutyric acid, also are useful in the acidic solution of an embodiment of the present invention. In general, any aliphatic alpha- or beta-hydroxy acid having an aliphatic carbon chain containing two through ten carbon atoms can be used in the acidic solution. The hydroxy acid can be a monocarboxylic acid, a dicarboxylic acid or a polycarboxylic acid.

[0044] The acid in the acidic solution is not limited to hydroxy acids. Essentially any acid that is used, or can be used, in cosmetic compositions

for skin can be incorporated into th present solution. Th acids traditionally are organic acids.

[0045] Specific acids that can be incorporated into the acidic solution include, but are not limited to, glucuronic acid, glutamic acid, allantoin galacturonic acid, allantoin glycyrrhetinic acid, allantoin polygalacturonic acid, animal collagen amino acids, animal elastin amino acids, animal keratin amino acids, aspartic acid, folic acid, hyaluronic acid, linoleic acid, linolenic acid, orotic acid, palmitoyl animal collagen amino acids, ribonucleic acid, silk amino acids, uric acid, urocanic acid, dilinoleic acid, trilinoleic acid, alanine, 6-aminocaproic acid, arginine, asparagine, carbocysteine, cysteine, cystine, glycine, histidine, hydroxyproline, isoleucine, leucine, lysine, methionine, phenylalanine, proline, serine, threonine, tryptophan, tyrosine, biotin, o-cresotic acid, glycyrrhetinic acid, glycyrrhizic acid, lanolin acid, and mixtures thereof. Other organic acids, either carboxylic acids, amino acids, or an organic acid having an ionizable hydrogenated atom, also can be incorporated into the acidic solution.

[0046] In one preferred embodiment, the anti-bacterial solution includes an acid that exists naturally in a plant, preferably in an edible plant. Preferably, the anti-bacterial solution includes substantially no antibacterial substance other than the acid that exists naturally in a plant, or in an edible plant.

[0047] In one embodiment of the present invention, the acidic solution contains malic acid. Optionally, the acidic solution contains no other acid other than malic acid. Malic acid is a natural organic acid found in food sources such as green apples, currants and other fruits. It has a very strong but pleasant sour taste. Malic acid is commonly used in the winemaking process to control wine acidity and tartness. It is also used in fruit juice, soda water and soft drinks. Malic acid is also used as an

acidulant, flavoring agent and c lor stabilizer in food processing. It is known to be one of the gentler food acids and is considered to be a safe substance for ingestion or use on the skin. Preferably, the mixture containing the malic acid solution also includes a buffer.

[0048] The acidic glove according to an embodiment of the present invention retains the characteristic of a disposable examination glove without any externally visible structural modification, and is easy and c nvenient to use. The affiliation between the acidic mixture (for example, a buffered malic acid solution) and the glove surface may be through a force provided by dehydration. Such affiliation is loosened when perspiration dissolves the dehydrated acidic pH solution. The longer a glove is worn, the more likely the hand will perspire, and consequently more acidic solution will be dissolved and disassociated from the glove surface, and be applied to the hand. The acidity of the solution can then c ndition hand skin and prevent microorganisms from growing under the wet condition.

[0049] In one embodiment, a solution of malic acid with a pH of about 5.5 is used to coat the gloves. Malic acid solution is distributed on the inner surface of the glove at a thickness of about 0.01 millimeter. Preferably, the distribution of the Malic acid is substantially even and uniform. Preferably, the association between malic acid and the surface is achieved at least in part due to a non-covalent force provided through dehydration.

[0050] In one specific embodiment, the preparation is formulated, for example, as follows (percentages are by weight): 0.5% Aloe Vera 200X concentrated powder; 0.04% Sodium Bensoate (99.5% concentrate, as a preservative); 0.04% Potassium Sorbate (98.0% concentrate, as a preservative); 0.02% Carboxymethylcellulose Sodium (90% concentrate, as a thickener); 1.0% Citric Acid (99.0% concentrate, acid to make pH 5.5);

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4.0% Trisodium Citratedihydrate (99.0% c nc ntrate, alkaline to make pH 5.5); 94.4% Deionized Water. For exampl , about 1.5 kg of th preparation is used per about 30 kg of gloves. Each glove weighs, for example, about 6-8 grams, depending, for example, on the size of the glove.

[0051] Coated gloves according to the specific embodiment just discussed is prepared, for example, by a process that includes: remove excessive powder from gloves; arranging gloves inside out; chlorinating the gloves; post-process leaching the gloves in hot water; post-leaching in water; removing excessive water (using centrifuge); initial drying; applying (.g., spraying) the preparation onto loose gloves; second drying; arranging gloves inside in; final drying; cooling; inspecting gloves; and packaging gloves. Some steps of the process may be omitted. Processes are discussed below in further detail.

[0052] FIG. 3 is a flow diagram that illustrates a process 300, according to some embodiments of the present invention, for making a coated elastomeric flexible article. FIG. 3 is labeled for embodiments in which the elastomeric flexible article is a glove, but FIG. 3 can also be interpreted more generally for non-glove articles.

[0053] As shown, the process 300 includes preparing (314) a preparation, for example, any preparation as discussed in the present document. Further, the process 300 includes applying (316) the preparation to a surface of an elastomeric flexible article. Some mbodiments of the process 300 include only the steps 314 and 316. However, other embodiments of the process 300 further include some or all of optional steps 310, 312, 318, and 320.

[0054] In the preferred embodiment of the process 300, the preparation is then dehydrated (318) at least partially, and preferably at least substantially or fully onto the elastomeric flexible article. Further, as necessary, the elastomeric flexible article is arranged (320) into a final

configuration that is inside-in. For example, in an embodiment for making coated gloves, the applying step 316 was preferably onto gloves arranged inside-out, such that the surface that will touch a hand while worn is on the outside. For such a embodiment for making coated gloves, the step 318 is preferably taken to arrange the gloves inside-in.

[0055] The step 316 of applying the preparation probably is taken with a clean elastomeric flexible article. Thus, the step 316 is preferably preceded by cleaning (312) the surface of the elastomeric flexible article onto which the preparation will be applied. For increased efficiency, the process 300 is an integrated manufacturing process that includes manufacturing (310) the underlying elastomeric flexible article itself.

[0056] The process 300 is preferably operated at a factory where coated elastomeric flexible articles are made in great numbers, for example, at least thousands in each manufacturing session. After their manufacture at the factory, the manufactured gloves are preferably packaged in a form suitable for distribution to end owners and end users via a commercial distribution channel, for example, via wholesalers and other distributors.

[0057] As mentioned above, the preparation is preferably at least substantially dehydrated on the article. Accordingly, as the preparation dehydrates, the proportion of ingredients in the preparation will change. Put another way, the preparation as discussed may be diluted excessively by a volatile substance, e.g., water or the like, and then the volatile substance may be allowed to evaporate, at least partially. Furthermore, repeated applications of the preparation and multiple (at least partial) evaporations/dehydrations may be used, for example, to compensate for using excessively diluted preparation. Nevertheless, even if a preparation is excessively diluted, at some time during its evaporation/dehydration process, the preparation will no longer be excessively diluted, relative to

the present description, and the proportions of its ingredients can be considered.

[0058] Manufacturing processes for treated elastomeric flexible articles may be explained by discussing processes for making treated gloves, with an understanding that the processes may be used to make non-glove treated elastomeric flexible articles as well. According to some embodiments of the present invention, a process for manufacturing a treated elastomeric flexible article is based on any process discussed in either or both of the following two references, which are hereby incorporated in their entirety for all purposes and which are commonly-owned with the present invention: U.S. Patent No. 6,274,154, entitled "Aloe Vera Glove and Manufacturing Method", or U.S. Patent Application No. 09/938,715, Publication Document Number 20020025335, entitled "Aloe Vera Glove and Manufacturing Method". Some embodiments of the present invention are any process as discussed in the two just-mentioned references, but instead of using an "Aloe Vera solution" or the like to coat an article (e.g., glove) as discussed in the two references, a preparation as discussed in the present document is prepared and used to coat an article (e.g., glove).

[0059] Some embodiments of the present invention, for making elastomeric flexible articles, will now be discussed. These embodiments include processes based on processes discussed in the just-mentioned two references.

[0060] According to an embodiment of the present invention, a method of manufacturing gloves includes treating a commercially available disposable glove to eliminate residue powders, soluble substances, and microorganisms, turning the glove inside out, dipping it into a preparation (any discussed in the present document) and heating the glove to cause water to evaporate.

[0061] A glove is preferably first treated with a chlorin solution or chlorine gas. Chlorine solution can help to sterilize the gloves, to wash off powders, and most importantly for natural latex gloves, to dissolve residual proteins that could potentially trigger severe allergic reactions among repeat users. After the outside surface of the glove is treated with the chlorine solution, it is turned inside out, and the glove is again treated with th chlorine solution. The residue chlorine is neutralized by using ammonia and the gloves are then dried.

[0062] The preparation will then be prepared, as discussed above. To associate the preparation with the surface of the glove, the preparation can be sprayed onto the surface of the glove. Alternatively, the glove can be immersed into the preparation. The latter method is preferred because it creates a complete and even distribution of the preparation.

[0063] In one preferred embodiment, the dipping process is accomplished by grouping a number of gloves in a batch to achieve higher manufacturing efficiency. The gloves are immersed in the preparation for at least 10 minutes to allow adequate absorbency.

[0064] The preparation is attached to the surface of the glove through a controlled dehydration process. The water in the preparation solution is caused to evaporate through heating. Although a higher temperature will cause water to evaporate quicker, excess heat may damage the gloves. For example, gloves exposed to excessive heat of over 70°C may turn brownish and become brittle. To shorten the heat exposure time, a heating oven is preheated to about 45°C before the gloves are introduced. The oven has a temperature control mechanism to maintain a maximum temperature. In a preferred embodiment the maximum temperature is set at approximately 65°C and the heating process lasts from about 35 to 40 minutes. The dehydration process provides an

affiliati n forc so that the preparation can remain associated with the gl ve surface for an extensive period of tim .

[0065] Even distribution of the preparation on the glove surface maximizes effectiveness and minimizes contact between the skin and th glove's composite material. Stationary drying is not preferred because the preparation solution tends to flow in the direction of the force of gravity. In a preferred embodiment the heating oven has a device to tumble during the heating to make the preparation distribute evenly on th glove surface and to form a uniform coating.

[0066] Afterward the gloves are cooled to room temperature. The gl ves are then inverted so that the surface with the preparation faces inside.

[0067] FIG. 4 is a flow diagram that illustrates a method 400 for manufacturing treated gloves, for example, using spraying, according to an embodiment of the present invention, using any preparation as discussed in the present document. The application of the preparation to gloves preferably begins with gloves that are clean and free of protein residue, powder, or other surface contaminants. Therefore, the method 400 preferably begins with a step 410 of cleaning the gloves to remove such contaminants. Next, the preparation is applied to the gloves (step 412), preferably by spraying a batch of clean loose gloves that are arranged inside out. The gloves are tumbled (step 414) so that more gloves become better exposed to current or future applying of the preparation. Preferably, the tumbling of the gloves in the step 414 occurs, or continues to occur, after the spraying of the preparation in the step 412 has already stopped. The steps 412 and 414 are then preferably repeated for a desired number of iterations (as shown by decision box 416 in FIG. 4). After the last iteration of the step 412 of applying the

preparati n, the gloves are dried (step 418, or the st p 418 and the last iteration of th step 414).

[0068] The optional (but preferred) step 410 of cleaning the gloves of surface contaminants can be performed using any competent technique (including any conventional technique). For example, as discussed above, a chlorine solution may be used, and the chlorine solution itself is preferably neutralized and cleaned away at the end of the cleaning step. Cleaning items such as gloves of surface contaminants, for example, using chlorine solution, is a known technology, and the specifics of such cleaning would be readily apparent, depending on the particular type of cleaning equipment being used. For example, for a sufficiently large commercial chlorine washer, a batch of about 3000 to 4000 gloves may be washed using any conventional cycle, for example, a cycle of about 20 to 30 minutes, say, about 23 minutes. Optionally, for extra assurance of cleanliness, the batch of gloves may be further rinsed with water, preferably in a separate commercial washing tank, for example first with hot water and then with cold (e.g., room-temperature) water for any desired amount of time, for example, about 20 to 30 minutes or more. For the method 400, the water is preferably drained well from the gloves. For example, the gloves may be spun dry in the commercial washing tank in conventional manner.

[0069] Preferably, the steps 412, 414, and 418 are all performed within a commercial heat tumble dryer, for example, as follows. After the optional water bath at the end of the optional cleaning step 410, the gloves are removed from the water bath and dumped into the heat tumble dryer. The dryer then starts tumbling the gloves. Preferably, the tumbling is accompanied by heating of the gloves by hot air and continues until the gloves are dry or mostly dry. Then, a spray nozzle configured to spray the preparation as a fine mist starts spraying the preparation onto the gloves

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in th dryer. During th spraying, the tumbling may either continu or may continue at a slower pac or may be stopped, and heating of the air may be continued or reduced or stopped. Depending on the level of integration between the spray nozzle and the dryer, the door of the dryer may be opened to allow access to the spray nozzle during spraying. After a period of spraying, the spraying stops and the tumbling continues, or resumes, preferably accompanied by resumed, or continued, heating of th air. The spraying and tumbling are repeated for several iterations. After the last iteration of spraying, the gloves are dried, preferably by tumbling with heating until the gloves are dry. The number and durations of iterations and the amount of solution to use should be chosen to be sufficient, given the particular dryer and spray nozzle configuration, to leave at least a desired minimum thickness, and/or no more than a desired maximum thickness, of dehydrated preparation on substantially ev ry glove.

[0070] For example, for a batch of about 3000 gloves, two kilograms of preparation may be sprayed in about 4 or 5 spray iterations, with the spray iterations spaced about 2 to 5 minutes apart, and with each spray iteration's having a spray duration of about 30 to 90 seconds in a dryer that is the oven discussed above (i.e., one that is limited to a maximum temperature of about 65°C (preferred) or less than about 80°C). As shown in FIG. 4, each spray iteration is preferably followed by a tumbling iteration. The final iteration of tumbling is of sufficient duration to dry the gloves and especially should include heating. For example, the final iteration of tumbling may be chosen so that the total duration of tumbling and heating gloves having preparation over all the steps is about 35 to 40 minutes.

[0071] Preferably, the method 400 is performed and completed using only two or only three holding containers in which washing, spraying, or

tumbling are actually performed. If two containers are used, they would be the chlorin washer and th heat tumble dryer. If three containers are used, they would be the chlorine washer, the water washer, and the heat tumble dryer.

[0072] FIG. 4 can also serve as a flow diagram for the earlier-discussed embodiment of the present invention that is a method that uses immersion (e.g., dipping) to apply the preparation. If FIG. 4 is interpreted to describe the method that uses immersion, then preferably the decision box 416 reflects having only a single iteration of immersing (the step 412), and the box for step 414 can be interpreted to refer to agitation of the immersion tank, for example, in the manner of a washing machine. After th immersion (e.g., the Steps 412 and 414), the step 418 refers to tumble drying, as has been discussed earlier. If FIG. 4 is used to describe the immersion method, then preferably an extra holding container would be used, namely, an immersion tank that contains the preparation. Thus, if th method 400 is embodied so as to use immersion, then the method 400 is preferably performed and completed using only three or only four h lding containers in which washing, immersion, or tumbling are actually performed. If three containers are used, they would be the chlorine washer, the immersion tank for preparation, and the heat tumble dryer. If four containers are used, they would be the chlorine washer, the washer for water, the immersion tank for preparation, and the heat tumble dryer.

[0073] In another embodiment of the present invention, a method for manufacturing treated gloves is integrated with, and/or includes, the manufacturing of the underlying preparation-free gloves themselves. This other embodiment is especially preferred for produce large quantities of treated gloves efficiently.

[0074] FIG. 5 is a flow diagram that illustrates a method 500, according to an embodiment of the present invention. The method 500 is a method

for manufacturing treated gloves that is integrated with, and includes, the manufacturing of th underlying preparation-free gloves themselves. Preferably, the method 500 is fully automated within a production line. In a step 510, gloves are formed on molds using any competent technique, for example, using conventional processes. The forming of gloves on molds is a conventional art and is well known. For example, each mold is shaped to be at least reminiscent of a hand such that the resulting gloves will fit hands. The forming and formed gloves undergo processing on the m lds in the step 510 using, for example, conventional processing.

[0075] In a step 512, a preparation, for example, any preparation discussed earlier, is applied to the gloves while the gloves are still on the form. The application of the preparation can be via any competent technique, for example, spraying, immersing, pouring, overfilling, dipping, and the like, (which are not mutually exclusive techniques). In a step 514, th preparation that coats the gloves undergoes at least partial, and preferably full or at least substantial, dehydration. Next, in a step 516, the gl ves are removed from the molds. Preferably, after removal from the molds, the gloves are further dried and cured by heat, in a step 518.

[0076] In the step 510, the gloves formed on the mold are preferably considered to be inside out such that that the interior of each glove, as later to be worn on the hand, faces outward. The gloves are formed and processed using whatever technique is competent to produce a glove of the desired material. The preferred material is natural rubber latex. After a glove is formed, while on the mold, the later hand-facing surface of the gl ve is preferably made safer, and/or easier to slide during donning, for later contact with hands, either by cleaning off any residual proteins, ch micals, and the like, for example, using chlorine, or by coating the surface with a thin insulating layer that will attempt to insulate the hand from contact with the residual proteins, chemicals, and the like during

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wearing of the glove. By being cleaned, the glove is likely to be slicker and easier to slide over skin during donning, especially if th gl ve is made of natural rubber latex. Similarly, the insulating layer is preferably made of a substance that is more slippery than the underlying glove. For example, even if the glove is a vinyl glove of a type that is not made significantly safer or more slippery by cleaning, it may still be coated with an insulating layer to increase its slippery-ness and thereby be made easier to don. The insulating layer is, for example, a polymer layer, for example, of silicone or polyurethane,

[0077] In the step 512, preparation, such as has already been described, is applied to the gloves while the gloves are still on the molds, either by dipping or by spraying. If spraying is used, it should be thorough enough so as to leave a desired amount of solution on the gloves' inside out surfaces, for example, an amount comparable to that which would be obtained from dipping.

[0078] In the step 514, the gloves undergo at least partial, and preferably full or at least substantial, dehydration. For example, fanned heated air may be blown across the gloves on the molds. For natural rubber latex gloves, especially, the air is preferably not more than about 80°C, and even more preferably, the air is not more than about 65°C. Preferably, the preparation is sufficiently dried to provide sufficient adhesion between the preparation and the glove so that the coated glove can withstand the next step 516.

[0079] In the step 516, the gloves are stripped from the molds.

[0080] In the optional step 518, the loose gloves are further cured, and their coatings are even further dehydrated by heat, for example, in a dryer as has been discussed earlier.

[0081] The forming and processing of gloves on molds in the step 510, in one example, includes, on an automatic production line: cleaning

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porcelain formers (molds) using hot water (for example, about 40°C to 100°C); drying the porcelain formers in hot air (for example, at about 40°C to 100°C); dipping the formers in coagulant (for example, at about 40°C to 70°C); drying the coagulant on the formers in hot air (for example, at about 35°C to 140°C); dipping the coagulant-coated formers in latex (for example, at about 25°C to 45°C); curing the latex on the formers in hot air (for example, at about 60°C to 140°C); leaching the gloves on the formers; beading the edge of the gloves on the formers; and then making the glove surfaces safer, and easier to don, for later contact with hands, either by cleaning or by coating the surface, as discussed above. If cleaning is used in the making-safer/making-easier-to-don step, then the forming and processing further includes: further curing (for example, at about 80°C to 140°C); rinsing with cold water (for example, at no more than room temperature); chlorination (for example, at no more than about 30°C); preferably preceded by further rinsing with cold water (for example, at no more than room temperature); neutralization; further rinsing (for example, with hot followed by cold water); and dehydration and further curing in hot air. Alternatively, if coating is used in the making-safer/making-easier-to-don step, then the forming and processing further includes: drying in hot air (for example, at about 80°C to 150°C); coating with polymer (for example, at no more than about 45°C); and further drying and curing in hot air (for example, at about 80°C to 150°C).

[0082] In addition to the preferred natural rubber latex, the present invention may be embodied as preparation-coated gloves of acrylonitrile, polyvinyl chloride, polyurethane, chloroprene, neoprene, butadiene, or the like, and their manufacturer.

[0083] Further, in addition to the specific preparations discussed in the present document, or an Aloe Vera solution as discussed in the two references incorporated above (U.S. Patent No. 6,274,154 or U.S. Patent

Application No. 09/938,715), the present invention may be embodied t alternatively or additionally use any other substance (e.g., any preparation) that can be dried onto the inside of a glove and that, in the dry form, is mixed with moisture that consists only of perspiration from a hand during wearing of the glove and is beneficial to the hand.

[0084] Throughout the description and drawings, example embodiments, for example, products and methods, are given with reference to specific embodiments and configurations. However, the present invention is not limited to those specific embodiments or configurations. It will be appreciated by those of ordinary skill in the art that the present invention can be embodied in other specific forms without departing from the spirit and scope of the present invention.

[0085] For example, although glove embodiments are illustrated in FIGS. 1 and 2, any other article or form that contacts skin may also embody th present invention. For example, the present invention may be embodied as elastomeric flexible peels, articles, wraps, and (other) medical devices. Similarly, the composition and application of the preparation may be varied without departing from the spirit and scope of the present invention. For example, various different preparations may be utilized to obtain an ultimate final elastomeric flexible article, for example, a glove, that has characteristics as described within the present document. For example, the formulations of the preparation may be varied in order to have a thicker or thinner coating, as desired to control comfort in use, dexterity, sense of feel, or protection. Still other changes would be apparent.

[0086] The scope of the invention is not limited merely to the specific example embodiments or configurations of the foregoing description, but rather is indicated by the appended claims. All changes that come within the meaning and range of equivalents within the claims are

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int nded to be understood as being embraced within the scope of the claims.

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What is claimed is:

1. An article comprising:
   a disposable protective glove, the disposable protective glove having an interior surface; and
   a preparation disposed on the interior surface of the disposable protective glove, wherein the preparation includes an anti-microbial substance, and wherein the preparation includes a buffer that helps resist change in pH during wearing of the disposable protective glove.

2. The article according to claim 1, wherein the anti-microbial substance is acidic during a period when the protective glove is worn, and wherein acidity of the anti-microbial substance contributes substantially to anti-microbial properties of the anti-microbial substance.

3. The article according to claim 2, wherein the preparation has pH within a range of 4.5 to 5.8 during a period in which the preparation is moist.

4. The article according to claim 2, wherein the anti-microbial substance includes an acid that exists naturally in a plant.

5. The article according to claim 2, wherein the anti-microbial substance includes an alpha-hydroxy acid.

6. The article according to claim 1, wherein the preparation has been dehydrated onto the interior surface of the protective glove.

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7. The article according to claim 6, wherein the anti-microbial substance is to be activated by moisture from hand perspiration during wearing of the protective glove.

8. The article according to claim 7, wherein the preparation has pH within a range of about 4.5 to about 6.0 during a period of being worn.

9. The article according to claim 6, wherein prior to completion of dehydrating the preparation onto the interior surface of the protective glove, the preparation included an acid in a range of about 0.1 percent to about 20 percent by weight.

10. The article according to claim 6, wherein prior to completion of dehydrating the preparation onto the interior surface of the protective glove, the preparation included an acid in a range of about 0.2 percent to about 5 percent by weight.

11. The article according to claim 1, wherein the buffer includes a weak organic acid and a conjugate base of the weak organic acid.

12. The article according to claim 13, wherein the buffer includes an amino acid and an amino acid salt.

13. The article according to claim 1, wherein the anti-microbial substance includes an acid that exists naturally in an edible plant.

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14. The article according to claim 1, configured wherein, after th article, in finished form as would be donned by an nd user, has been placed in a chamber at over 30 degrees Celsius and 100% humidity and at least standard pressure for at least 30 minutes, the preparation has pH within the range of 3.8 to 6.0.

15. The article according to claim 1, wherein the disposable protective glove is made from a material selected from the group consisting of a resinous material and a polymer material.

16. The article according to claim 1, wherein the preparation is evenly distributed on the interior surface of the disposable protective glove.

17. The article according to claim 1, wherein the preparation does not include antiperspirant.

18. The article according to claim 1, wherein the disposable protective glove is without any layer of porous material

19. An article comprising:

a disposable protective glove, the disposable protective glove having an interior surface; and

a preparation disposed, during factory production of the article, on the interior surface of the disposable protective glove, wherein the preparation includes an anti-bacterial substance, and wherein the preparation includes a buffer that helps resist change in pH during wearing of the disposable protective glove.

20. The article according to claim 19, wherein the buffer includes a weak inorganic acid and a conjugate base of the weak inorganic acid.

21. The article according to claim 19, wherein the buffer includes a quarternized phosphate ester.

22. The article according to claim 19, wherein the anti-bacterial substance includes acid that exists naturally in an edible plant, and the preparation includes substantially no anti-bacterial substance other than the acid that exists naturally in an edible plant.

23. The article according to claim 19, wherein the anti-bacterial substance includes an organic acid.

24. The article according to claim 23, wherein the anti-bacterial substance includes a hydroxy acid.

25. The article according to claim 19, wherein the anti-bacterial substance includes an acid selected from the group consisting of an aliphatic acid, an aromatic acid, salicylic acid, aromatic, aliphatic components, alpha-hydroxy acids, glycolic acid, citric acid, lactic acid, tartaric acid, malic acid, hydroxycaprylic acid, mandelic acid, leucic acid, azelaic acid, ethylglycolic acid, beta-hydroxy acids, salicylic acid, beta-hydroxypropionic acid and beta-hydroxybutyric acid, monocarboxylic acid, dicarboxylic acid, polycarboxylic acid, glucuronic acid, glutamic acid, allantoin galacturonic acid, allantoin glycyrrhetinic acid, allantoin

polygalacturonic acid, animal collagen amino acids, animal elastin amin acids, animal keratin amin acids, aspartic acid, folic acid, hyaluronic acid, linoleic acid, linolenic acid, orotic acid, palmitoyl animal collagen amino acids, ribonucleic acid, silk amino acid, uric acid, urocanic acid, dilinoleic acid, trilinoleic acid, alanine, 6-aminocaproic acid, arginine, asparagine, carbocysteine, cysteine, cystine, glycine, histidine, hydroxyproline, isoleucine, leucine, lysine, methionine, phenylalanine, proline, serine, threonine, tryptophan, tyrosine, biotin, o-cresotic acid, glycyrrhetinic acid, glycyrrhizic acid, lanolin acid, and mixtures thereof and carboxylic acids, amino acids, or an organic acid having an ionizable hydrogenated atom.

26. The article according to claim 19, wherein the preparation is constituted to have pH within a range of about 3.8 to about 6.0 during a period in which the preparation is moist.

27. The article according to claim 19, wherein the preparation was disposed onto the disposable examination glove not in powder form.

28. The article according to claim 19, wherein the preparation is attached to the interior surface of the disposable examination glove due at least in part to a force provided by dehydration.

29. The article according to claim 28, wherein prior to completion of dehydrating the preparation onto the interior surface of the protective glove, the preparation included an acid in a range of about 0.2 percent to about 10 percent by weight.

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30. The article according to claim 19, wherein th preparation does not include any antiperspirant selected from the group consisting of aluminum-zirconium tetraclorohydrex glycine, alcloxa, aluminum cloride, aluminum chlorohydrex, aluminum PCA, zirconium chlorohydrates, aluminum zirconium tetrachlorohydrates, and aluminum chlorohydrates.

31. The article according to claim 19, wherein the preparation further includes a skin soothing substance.

32. The article according to claim 31, wherein the skin soothing substance includes dehydrated aloe vera.

33. The article according to claim 31, wherein the preparation includes no skin soothing substance other than aloe vera.

34. The article according to claim 31, wherein the skin soothing substance includes a dehydrated lotion.

35. The article according to claim 19, wherein the preparation includes no aloe vera.

36. The article according to claim 19, wherein the preparation includes a thickener.

37. The article according to claim 36, wherein the thickener is selected from the group consisting of polyacrylic acid, polyacrylate, polymethacrylic acid, polyacreylamide, sodium alginate, gelatin,

xantham gum, acacia, aga carboxymethyl cellulose, carboxym thyl cellulose salt, polyvinyl alcoh l, polyvinyl acetal, polyvinylpyrrolidone, magnesium aluminum silicate, aluminum starch octenylsuccinate; a water-soluble polymer, like a polyvinylalcohol, a polybutene, a polyethylene glycol, or a polyethylenimine, gum, xanthan gum, hydroxyethylcellulose, karaya gum, carrageenen, hydroxypropyl guar, methylcellulose, tragacanth gum, and hydroxypropylcellulose.

38. The article according to claim 19, wherein the disposable protective glove is made of a single layer of natural rubber latex, acrylonitrile, vinyl, or polyvinyl chloride.

39. The article according to claim 19, wherein the preparation forms a layer with thickness of about 0.01mm.

40. The article according to claim 19, wherein the preparation forms a layer with thickness that is about 1/16 of thickness of the disposabl protective glove.

41. The article according to claim 19, wherein the disposable protective glove is without any absorbent material.

42. The article according to claim 19, wherein the anti-bacterial substance is constituted to be activated by skin perspiration.

43. The article according to claim 19, wherein the preparation includes no detectable oil-based substance.

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44. A protective glove comprising:
only a single layer of a fluid-impermeable flexible material having an inner surface and forming a cavity to receive a hand; and
an anti-microbial preparation coated on the inner surface, wherein no aloe vera is coated on the inner surface, and wherein th anti-microbial preparation was factory pre-coated onto the inner surface.

45. The glove according to claim 44, wherein the anti-microbial preparation includes an acid.

46. The glove according to claim 45, wherein the glove is a disposable medical glove.

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Abstract

An anti-microbial elastomeric flexible article is disclosed which includes a thin layer of an anti-microbial preparation disposed on an inside surface of the elastomeric flexible article, such as a glove. For example, the preparation may include an acidic substance. Preferably, the preparation further includes a buffer. Preferably, the preparation is in a substantially deyhdrated form and is activated by exposure to perspiration during use.

DECLARATION

SHENWPT2

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UTILITY APPLICATION

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 AN ELASTOMERIC FLEXIBLE ARTICLE AND MANUFACTURING METHOD, the specification of which

CHECK ONE

[X] is attached hereto.

[ ] was filed on _____ as

Application Serial No. _____

and was amended on _____
(if applicable)

I have read the applicable statutes and rules reprinted on the attached page of this declaration which I understand to describe subject matter which is material under 37 C.F.R. § 1.56(a).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment(s) referred to above. I acknowledge the duty to disclose information which is material to the examination 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 listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

Application Number	Country	Date of Filing	Priority Claimed	
			Yes√	No√
N/A				

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I hereby claim the benefit under Title 35, United States § 119(e) of any United States provisional application(s) listed below.

Application Number	Date of Filing
N/A	

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application 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, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

Application Number	Date of Filing	Status -Patented, Pending, or Abandoned
N/A		

APPLICABLE STATUTES & RULES

37 C.F.R. § 1.56 - DUTY OF DISCLOSURE; FRAUD; STRIKING OR REJECTION OF APPLICATIONS

(a) A duty of candor and good faith toward the Patent and Trademark Office rests on the inventor, on each attorney or agent who prepares or prosecutes the application and on every other individual who is substantively involved in the preparation or prosecution of the application and who is associated with the inventor, with the assignee or with anyone to whom there is an obligation to assign the application. All such individuals have a duty to disclose to the Office information they are aware of which is material to the examination of the application. Such information is material where there is a substantial likelihood that a reasonable examiner would consider it important in deciding whether to allow the application to issue as a patent. The duty is commensurate with the degree of involvement in the preparation or prosecution of the application.

Information relating to the following factual situations enumerated in 35 U.S.C. § 102 and § 103 should be considered material under 37 C.F.R. § 1.56(a):

A person shall be entitled to a patent unless –

(a) The invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent, or

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States, or

(c) he has abandoned the invention, or

(d) the invention was first patented or caused to be patented, or was the subject of an inventor's certificate, by the applicant or his legal representatives or assigns in a foreign country prior to the date of the application for patent in this country on an application for patent or inventor's certificate filed more than twelve months before the filing of the application in the United States, or

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent, or

(f) he did not himself invent the subject matter sought to be patented, or

(g) before the applicant's invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it. In determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice of the invention, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other.

35 U.S.C. § 103 - CONDITIONS FOR PATENTABILITY; NON-OBVIOUS SUBJECT MATTER

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

35 U.S.C. § 119 - BENEFIT OF EARLIER FILING DATE IN FOREIGN COUNTRY; RIGHT OF PRIORITY (Applicable Portion)

An application for patent for an invention filed in this country by any person who has, or whose legal representatives or assigns have, previously regularly filed an application for a patent for the same invention in a foreign country which affords similar privileges shall have the same effect as the same application would have if filed in this country on the date on which the application for patent for the same invention was first filed in such foreign country, if the application in this country is filed within twelve months from the earliest date on which such foreign application was filed; but no patent shall be granted on any application for patent for an invention which has been patented or described in a printed publication in any country more than one year before the date of the actual filing of the application in this country, or which had been in public use or on sale in this country more than one year prior to such filing.

35 U.S.C. § 120 - BENEFIT OF EARLIER FILING DATE IN THE UNITED STATES

An application for patent for an invention disclosed in the manner provided by the first paragraph of section 112 of this title in an application previously filed in the United States, or as provided by section 363 of this title, by the same invention shall have the same effect, as to such invention, as though filed on the date of the prior application, if filed before the patenting or abandonment of or termination of proceedings on the first application or on an application similarly entitled to the benefit of the filing date of the first application and if it contains or is amended to contain a specific reference to the earlier filed application.

35 U.S.C. § 112 - SPECIFICATION (Applicable Portion)

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

I hereby appoint as attorneys of record with full power of substitution and revocation, to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: Otto O. Lee, Reg No. 37,871 C. George Yu Reg No. 43,301, and Juneko Jackson, Reg. No. 48,870.

Send Correspondence to:	Intellectual Property Law Group LLP 12 South First Street, Twelfth Floor San Jose, CA 95113	Direct Telephone Calls to: Otto O. Lee (408) 286-8933

201	FULL NAME OF INVENTOR First Name: Belle	Middle Initial(s): L	LAST Name: Chou	
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I further 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 willful 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 willful false statements may jeopardize the validity of the application of any patent issuing thereon.

Signature of Inventor 201: Belle Chou	Signature of Inventor 202:
Date: 4/18/02	Date:
Signature of Inventor 203:	Signature of Inventor 204:
Date:	Date:

(Signatures should conform to names as presented at 201 *et seq.* above.)

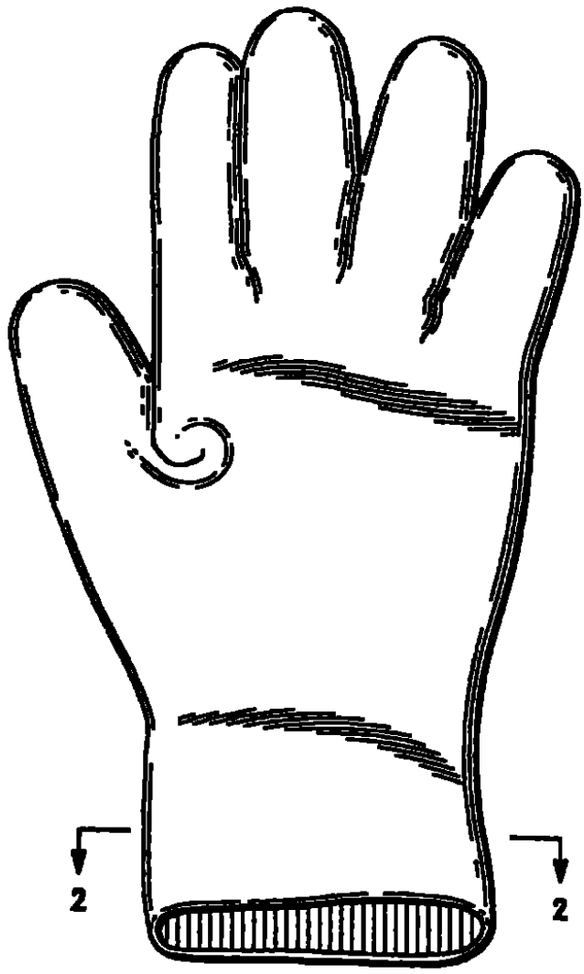

FIG.—1

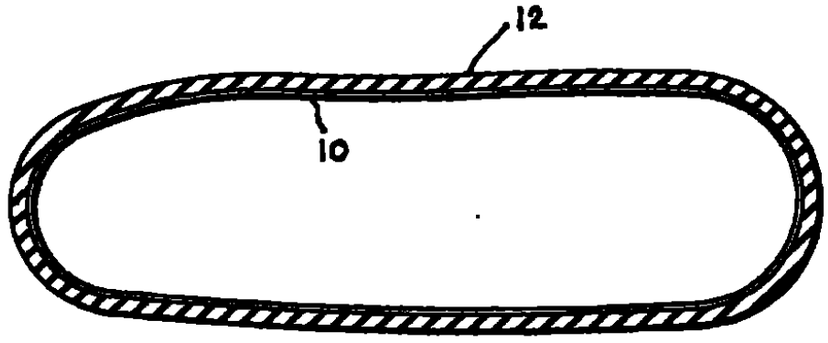

FIG.—2

COPIA 162

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Señora
Jefe de la División de Nuevas Creaciones
Superintendencia de Industria y Comercio
Ministerio de Desarrollo Económico
E. S. D.

Ref.: Expediente No. **03.036.344**
Solicitud de Patente de Invención para:
"ARTICULO FLEXIBLE ELASTOMERICO Y METODO DE FABRICACION " .
Solicitante: **Belle L. Chou.**

MARGARITA CASTELLANOS ABONDANO, mayor de edad, domiciliada e identificada como aparece al plé de mi firma, y actuando en mi calidad de apoderada de la sociedad solicitante de la solicitud de patente de la referencia, atentamente me permito presentar a Ud. el texto en Español de la invención.

En consecuencia, atentamente solicito a Ud. se anexe dicho texto al expediente arriba citado y se continúe con el trámite correspondiente a esta solicitud de patente de invención.

De la Señora Jefe,

Margarita Castellanos Abondano
C.C. No. 39.779.654 de Usaquén
T.P.A. No. 70819 del C. Sup. de la Judicatura.
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Teléfono: 610 7420 - 610 7480

Bogotá, D.C. 09 MAYO 2003

xgl/4667

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Industria y Comercio
SUPERINTENDENCIA

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2do. EXAMEN DE FORMA PATENTE DE INVENCION

Folio 183

Radicación no 03-36344

Concepto Técnico no 154
Clasificación Internacional de Patentes: C08C 19/00

Practicado el examen de acuerdo a lo establecido en el Art. 38 de la Decisión 486 se determinó que esta solicitud de **Patente de Invención:**

SI [X] NO [ ] Contiene un resumen de la invención (Art.26-e).

SI [X] NO [ ] Contiene el título o nombre de la invención (Art.27-d).

SI [X] NO [ ] Contiene la descripción de la invención (Art.26-b).

SI [X] NO [ ] NO ES APLICABLE [ ] Contiene los dibujos necesarios para comprender la invención (Art.26-d)

SI [X] NO [ ] Contiene una o más reivindicaciones. (Art.26-c).

SI [ ] NO [ ] NO ES APLICABLE [X] Han sido desarrollados los productos y/o procedimientos a partir de recursos genéticos o de sus productos derivados de los que cualquiera de los Países Miembros es país de origen. (Art. 26- h).

SI [ ] NO [ ] NO ES APLICABLE [X]Los productos y/o procedimientos han sido obtenidos o desarrollados a partir de los conocimientos tradicionales de las comunidades indígenas, afro americanas, o locales de los países miembros, de acuerdo a lo establecido en la Decisión 391 y sus modificaciones y reglamentaciones vigentes.(Art.26-l).

SI [ ] NO [X] La invención se refiere a un producto relativo a un material biológico. (Art.26-J).

SI [X] NO [ ] NO ES APLICABLE [ ]La prioridad coincide con la materia reivindicada.

SI [X] NO [ ] CUMPLE LOS REQUISITOS TÉCNICOS

OBSERVACIONES Y OTROS: SI [ ] NO [X] ver hoja(s) anexa(s)

EXAMINADOR TÉCNICO
202056

Bogotá D. C., FEBRERO 03 de 2004.

Industria y Comercio
SUPERINTENDENCIA

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2020 Folio 164
Bogotá DC

Doctor
MARGARITA CASTELLANOS A.
Apoderado
BELLE L. CHOU

REFERENCIA:	Radicación No.	03-36344
	Trámite	002
	Evento	001
	Actuación	416
	Oficio No.	169
	Folios	001

Teniendo en cuenta que la solicitud de privilegio de patente que se tramita bajo el expediente indicado en la referencia, reúne los requisitos de forma establecidos en los artículos 26 y 27 de la Decisión 486 de la Comisión de la Comunidad Andina, y en las demás disposiciones vigentes sobre la materia, se envía el extracto de la solicitud a la Oficina de Comunicaciones para efecto de su publicación en la Gaceta de Propiedad Industrial, conforme lo establece el artículo 40 de la misma Decisión. Se publicará a partir del 02 de noviembre de 2004 por indicación del solicitante.

Cúmplase
Dado en Bogotá DC, a los 11 FEB 2004

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

202058