



Industria y Comercio
SUPERINTENDENCIA

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 08-019258-00004-0000

Fecha: 2009-11-26 15:00:56 Dep. 2020 DIR.NUEVASCR
Tra. 2 PATENTES Eve: 1 REGDEPOSITO
Act. 400 OPOSIOBSERVTER Folios: 27

FORMULARIO ÚNICO DE OPOSICIÓN

1

OPOSICIÓN A SOLICITUD DE:

☒ Patente de Invención

☐ Patente de Modelo de Utilidad

☐ Diseño Industrial

☐ Esquema de Trazado para Circuitos Integrados

☐ Marca Colectiva

☐ Marca de Certificación

☐ Lema Comercial

☐ Marcas de Productos o Servicios

☐ Denominación de Origen

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SOLICITUD PUBLICADA

Número del expediente: 08.019.258

Solicitante: UNILEVER N.V.

Apoderado: Alicia Lloreda Ricaurte

Título de la nueva creación o denominación del signo: Concentrado empacado para preparar un caldo, sopa, salsa, jugo de carne o para uso como un condimento, el concentrado comprende glucomanano.

Gaceta: Gaceta No. 607 del 31 de agosto de 2009, página 425

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OPOSICIÓN PRESENTADA POR:

OPOSITOR

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IDENTIFICACIÓN

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☐ C.E.☐ Otro

Cual

Número 860.074.450-9

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Cual

Número 52.223.325 TP 148648

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FUNDAMENTOS DE LA OPOSICIÓN

Causal: Falta de nivel inventivo de acuerdo con el artículo 18 de la Decisión 486

Signo fundamento de la oposición:

Expediente y/o registro de la marca opositora (De ser marca el signo fundamento de la oposición):

Justificación: Ver memorial anexo

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PRÓRROGA

☐ SI☐ NO

Comprobante de pago No. Fecha:

6

INVOCACIÓN DE NOTORIEDAD

☐ SI☐ NO

Comprobante de pago No. Fecha:

7	CONCEPTO DE OPOSICIÓN	☒ SI	☐ NO	
	Comprobante de pago No. <u>09-88941</u>			Fecha: <u>26-Nov-09</u>
8	ANEXOS	☒ SI	☐ NO	
	☒ Comprobante de pago de la tasa.			
	☒ Poderes, si fuera el caso.			
	☒ Pruebas de los fundamentos de la oposición.			
	☐ Documentos que acrediten el legítimo interés, si fuere el caso.			
	☒ Documento que acrediten la existencia y representación legal de las partes, cuando sean personas jurídicas.			
	☐ Tasa de próroga			
	☒ Copias para traslado.			
9	Nombre y firma			
	Nombre: <u>Andrea Tobos Mateus</u>			
	Firma 			
	C.C. 52.223.325 Bogotá T.P. 148648			
Instrucciones para el diligenciamiento del presente formulario, ver reverso de esta página				

Doctora

Alix Carmenza Céspedes de Vergel

Jefe de División de Nuevas Creaciones

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO -SIC-

E. _____ S. _____ D. _____

Referencia: Oposición a solicitud de patente de Invención

Solicitante: Unilever N.V.

Expediente No. 08.019.258

Título: "Concentrado empacado para preparar un caldo, sopa, salsa, jugo de carne o para uso como un condimento, el concentrado comprende Glucomanano"

Publicación: Gaceta 607 del 31 de agosto de 2009, página 425

OPOSICIÓN SEGÚN ARTÍCULO 42 DE LA DECISIÓN 486

ANDREA TOBOS MATEUS, mayor de edad y vecina de Bogotá, D.C., identificada según aparece al pie de mi firma, en mi condición de apoderada de la sociedad Quala S.A., domiciliada en Bogotá D.C., presento oportunamente oposición a la solicitud de patente de invención No. 08.019.258, en los siguientes términos:

I. INTERES

A mi representada, le asiste el legítimo interés para oponerse a la solicitud de patente de Unilever N.V. que se menciona en la referencia, por cuanto entre sus actividades principales se encuentran la elaboración, preparación, fabricación, procesamiento, compraventa, y en general comercialización de productos alimenticios de todo tipo. Precisamente, una de las líneas de producción de mi representada la constituyen los aderezos, caldos y concentrados alimenticios que justamente corresponde al campo de la solicitud de Unilever N.V.

II. HECHOS

2.1. El día 25 de febrero de 2008, la empresa Unilever N.V. presentó ante la Superintendencia de Industria y Comercio la solicitud de patente de invención titulada: "Concentrado empacado para preparar un caldo, sopa, salsa, jugo de carne o para uso como un condimento, el concentrado

comprende Glucomanano", reclamando prioridad de la solicitud de patente europea No. 07110026 del 12 de junio de 2007, a la que se le asignó el número de radicación 08.019.258. Al momento de la presentación, la solicitud contenía 14 reivindicaciones.

2.2. La solicitud fue publicada en la Gaceta 607 del 31 de agosto de 2009.

2.3. El 5 de octubre de 2009, la Dra. Alicia Lloreda Ricaurte, apoderada de Unilever N.V., radicó la solicitud de elaboración del examen de patentabilidad para la invención.

III. FUNDAMENTOS DE LA OPOSICIÓN

3.1. Causales

La presente oposición se fundamenta en la falta de nivel inventivo de la invención de Unilever N.V. según lo establece el artículo 18 de la Decisión 486:

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

Las enseñanzas contenidas en los documentos US 4.894.250 "Thermo-irreversible edible gels of glucomannan and xantan gums" (16 de enero de 1990) y US 4.427.704 "Food product thickened or gelled with carrageenan and glucomannan" (24 de enero de 1984) afectan el nivel inventivo de la solicitud de Unilever en la medida que el concentrado empacado allí reclamado pudo haberse derivado de manera evidente por una persona del oficio normalmente versado en la materia técnica de la invención. Los documentos que ahora se relacionan constituyen arte previo relevante por cuanto la fecha de prioridad que reclama la solicitud No. 08.019.258 es posterior a la fecha de publicación de dichos documentos.

3.2. Justificación

3.2.1. US 4.894.250 "Thermo-irreversible edible gels of glucomannan and xantan gums" (16 de enero de 1990)

Esta invención se relaciona con un material comestible y más específicamente con un sistema gelificante usado para preparar un gel acuoso termoirreversible que puede mezclarse con carne y otros alimentos.

La invención presentada en la publicación US 4.894.250 está basada en el hecho de que un gel termoirreversible puede ser producido por la interacción de una solución acuosa de goma de xantan y goma de glucomanano, con la aplicación de un tratamiento de térmico (Columna 1, líneas 20 a 25 de la publicación). Otras gomas o agentes gelificantes tales como: agar, carraginata, pectina, alginato, gellan, goma guar, etc., pueden ser incorporadas en el sistema básico gelificante para modificar la textura del gel obtenido (Columna 1, líneas 40 a 43 de la publicación).

Específicamente la publicación US 4.894.250, en sus reivindicaciones reclama:

- Un método para producir un gel acuoso termoirreversible, el cual comprende principalmente una combinación gelificable de goma de xantan y goma de glucomanano (reivindicación 1).
- Un gel que también incluye materiales comestibles como carne, fruta o material vegetal (reivindicaciones 4 y 5).
- En donde el gel también incluye otras gomas y/o otros agentes gelificantes, como por ejemplo: agar, carraginata, pectina, alginato, gellan o goma guar (reivindicaciones 6 y 7).
- En donde la concentración de goma de xantan y glucomanano en la fase acuosa es de 0.02 % a 6%, en peso del gel y mas preferiblemente de 0.5 % a 4%, en peso del gel (reivindicaciones 10 y 11).

La solicitud No. 08.019.258 presentada por Unilever reclama, entre otras cosas un concentrado empacado que comprende:

- 0.8% a 4%, preferiblemente 0.9% - 2%, mas preferiblemente 1 - 1.5% (% en peso con base en el contenido de agua del concentrado) de un agente gelificante, que comprende glucomanano y, opcionalmente uno o más agentes gelificantes. Se puede observar que en el documento US 4.894.250 se reporta la inclusión de glucomanano y uno o más agentes gelificantes en un porcentaje de va de 0.02% hasta el 6% del peso del gel, con lo cual el rango que pretende proteger Unilever de 0.8% a 4% cae dentro del rango presentado en la publicación estadounidense, así la base para calcular la base sea diferente (en uno se calcula sobre el porcentaje en agua y en el otro sobre el producto total).
- Concentrado empacado de acuerdo con cualquiera de las reivindicaciones 1-4 en el que uno o más agentes gelificantes diferentes se seleccionan del grupo que consiste de: agar, carraginata, xantan, gellan y almidón. El producto presentado en la publicación US 4.894.250, coincide al igual que en la solicitud presentada por Unilever en la utilización de otros agentes gelificantes mas específicamente: carraginata, gellan y xantan, este último con gran relevancia dentro de la anterioridad expuesta. Esto muestra claramente que la combinación de estos agentes gelificantes ya ha sido usada en la industria alimenticia años atrás.
- Concentrado empacado de acuerdo con cualquiera de las reivindicaciones 1-6, en donde los componentes que confieren sabor comprenden uno o más extractos o concentrados líquidos o

que se pueden disolver o concentrados de uno o más, de carne, pescado, hierbas, frutas o vegetales y/o sabores, y/o extracto de levadura, y/o proteína hidrolizada de origen vegetal, de soja de pescado o de carne, y/o hierbas, vegetales, frutas, pescado, crustáceos o particulados de los mismos. Al igual que la solicitud de Unilever, la publicación US 4.894.250 también permite la inclusión de materiales comestibles en el gel para la elaboración de un sinnúmero de productos alimenticios que ilustran mejor la invención.

Según lo expuesto anteriormente, podemos concluir que la solicitud de patente No. 08.019.258 presentada por Unilever carece de nivel inventivo, ya que en el documento US 4.894.250 se encuentran descritas algunas características principales de la invención, hecho que no permite su concesión como patente en Colombia.

3.2.2. US 4.427.704 "Food product thickened or gelled with carrageenan and glucomannan" (24 de enero de 1984)

Esta publicación se relaciona con un material comestible que posee una fase gelificante o espesante que comprende una mezcla o reacción de al menos una carraginata y al menos un glucomanano, donde la fase gelificada puede ser un gel termorreversible o termoirreversible.

La invención descrita en US 4.427.704 presenta en sus reivindicaciones 12 y 16 respectivamente:

- El producto alimenticio de la reivindicación 1, donde la concentración de la cantidad total de glucomanano y carraginata en la fase acuosa es de 0.01% a 5% en peso de la fase acuosa. Esta reivindicación afecta lo que se pretende proteger en las reivindicaciones 1 y 5 de la solicitud de patente de Unilever, en la medida que dentro de sus posibilidades comprende la mezcla o combinación de glucomanano y carraginata (ver reivindicación 5) en un porcentaje de 0.8% a 4%, que está comprendido dentro del porcentaje de la patente estadounidense.
- El método de la reivindicación 15 en donde los otros materiales comestibles son seleccionados del grupo que consiste carnes y otros materiales proteínicos de origen vegetal o animal. esta reivindicación corresponde a los componentes que confieren sabor al producto y coinciden con los utilizados por Unilever en el producto de la reivindicación 7.

De otra parte, el método que divulga la solicitud estadounidense US 4.427.704 en las reivindicaciones 15 a 26, afecta el método que busca reclamar Unilever en esta solicitud de patente por cuanto comprende los mismos pasos de mezclar los ingredientes y someterlos a calentamiento al menos 50°C (ver reivindicación 18 del arte previo).

Lo descrito en el documento US 4.427.704 le resta nivel inventivo a la invención de Unilever en los aspectos de incluir la mezcla de materiales gelificantes, específicamente glucomanano y carraginata e incluir elementos proteínicos procedentes de la carne y vegetales, para dar sabor al producto.

Por lo tanto, como conclusión general las reivindicaciones 1 a 14 de la solicitud de patente No. 08.019.258 no cumplen con el requisito de nivel inventivo debido a que sus características son derivables de manera evidente a partir de lo divulgado en US 4.894.250 y US 4.427.704, para una persona versada en la preparación de caldos, concentrados y salsas.

IV. PETICIÓN

En atención a los hechos anteriormente expuestos y a las pruebas aportadas, considero que es manifiesta la falta de nivel inventivo de la solicitud de Unilever N.V. y por consiguiente, comedidamente solicito a ese Despacho rechazar dicha solicitud de patente.

V. PRUEBAS

- 5.1. ANEXO A. Copia de la publicación US 4.894.250 (16 de enero de 1990).
- 5.2. ANEXO B. Copia de la publicación US 4.427.704 (24 de enero de 1984).

VI. DERECHOS

Adjunto el formulario único de presentación de oposición y un recibo por valor de \$287.000 correspondiente a la tramitación de la presente observación.

VII. TRASLADO

Presento con este memorial copia del presente escrito de observaciones, para su traslado al solicitante.

VIII. PERSONERÍA

Adjunto documento de poder otorgado a mi nombre por la sociedad Quala S.A., el cual me permite obrar en su representación dentro de este expediente.

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IX. NOTIFICACIONES

Mi representada y yo recibiremos notificaciones en la Secretaría de la División de Propiedad Industrial, y en mi oficina situada en la Avenida 19 No. 118-30 Oficina 209 Bogotá D.C., Colombia. La sociedad demandada y su apoderado las recibirán en la dirección indicada por este último en la solicitud inicial.

Atentamente,



ANDREA TOBOS MATEUS

C.C. 52.223.325 de Bogotá

T.P. 148648

United States Patent [19]

Musson et al.

[11] Patent Number: 4,894,250

[45] Date of Patent: Jan. 16, 1990

[54] THERMO-IRREVERSIBLE EDIBLE GELS
OF GLUCOMANNAN AND XANTHAN GUMS

[75] Inventors: Gary D. Musson; Colin T. Prest, both
of Melton Mowbray, United
Kingdom

[73] Assignee: Mars G.B. Limited, Berkshire,
United Kingdom

[21] Appl. No.: 190,581

[22] Filed: May 5, 1988

[30] Foreign Application Priority Data

May 6, 1987 [GB] United Kingdom 8710704

[51] Int. Cl.⁴ A23L 1/06

[52] U.S. Cl. 426/573; 426/575;
426/574

[58] Field of Search 426/573, 575, 574

[56] References Cited

U.S. PATENT DOCUMENTS

4,582,714 4/1986 Ford et al. 426/505
4,647,470 3/1987 Sanderson et al. 426/574
4,676,976 6/1987 Toba et al. 426/573
4,746,528 5/1988 Prest 426/573

FOREIGN PATENT DOCUMENTS

0069591 1/1983 European Pat. Off. .

0185511 6/1986 European Pat. Off. .
2048642 12/1980 United Kingdom .
2084844 4/1982 United Kingdom .
2128871 5/1984 United Kingdom .
2137066 10/1984 United Kingdom .
2168366 6/1986 United Kingdom .

Primary Examiner—Jeanette Hunter

Attorney, Agent, or Firm—Curtis, Morris & Safford

[57] ABSTRACT

Thermo-irreversible aqueous gels are prepared by subjecting a gellable combination of xanthan gum and a glucomannan gum, preferably from the corms of an *Amorphophallus* species at a pH above 6 to a heat treatment under conditions of temperature and time to cause the gel to become thermo irreversible. The pH is preferably between 6 and 10 and more especially between 6 and 8. The preferred ratio of xanthan gum to glucomannan is in the range of from 5:95 to 95:5, more especially 1:10 to 10:1 and the preferred concentration of xanthan gum and glucomannan in the aqueous phase is 0.02% to 6%, more preferably 0.5 to 4%, by weight. The thermo irreversible gels of the invention, with the inclusion of food materials, such as minced meat, fruit and vegetables, simulate the texture of natural meat offals and other food structures.

13 Claims, No Drawings

THERMO-IRREVERSIBLE EDIBLE GELS OF GLUCOMANNAN AND XANTHAN GUMS

This invention relates to edible materials and more especially to a gelling system used to prepare thermo-irreversible aqueous gels which simulate the texture of natural meat offals and other food structures.

It is known that glucomannans such as those extracted from the *Amorphophallus* sp for example *A. riviera* interact with xanthan gum, obtained by the fermentation of *Xanthomonas campestris*, to form thermo-reversible gels.

It is also known that glucomannans can be interacted with kappa and iota carrageenans to produce thermo-reversible and thermo-irreversible gels (see GB-A-2048642 and GB-A-20-84844). Gum combinations that will produce thermo-irreversible gels are, however, rarely encountered.

This invention is based on the surprising observation that thermo-irreversible gels can be produced by interacting aqueous solutions of xanthan gum and glucomannan gum together with the application of a heat treatment process under neutral to alkaline pH conditions, i.e. at a pH value above 6, preferably between 6 and 10, more especially between 6.5 and 8.

This invention therefore provides a method for making a thermo-irreversible aqueous gel, which comprises subjecting a gellable combination of xanthan gum and a glucomannan gum at a pH above 6 to a heat treatment under conditions of temperature and time to cause the gel to become thermo-irreversible.

Other gums and gelling agents can be incorporated into this basic-gel system to modify the gel texture obtained. Inclusion of food materials such as minced meat, fruit, vegetables etc., enable a wide range of thermo-irreversible food pieces to be produced with textures simulating those of their natural counterpart by judicious combination of the amounts and ratios of the gelling agents employed. Other gums and gelling agents which may be employed for textural modification include agar, carrageenan, pectin, alginate, "Gellan", guar gum etc.

Xanthan gum may be used either in its crude form containing cell debris or as a clarified alcohol precipitated grade. The clarified grade is preferred for those instances where clarity is important in the final food structure e.g. in simulating white grapes.

The glucomannan may also be used in a crude form, such as the dried ground vegetable source or in a purified form. glucomannans are found in a variety of plants but the preferred glucomannans are found in the corms of *Amorphophallus* species and in particular, *A. riviera* syn. *Konjac*, *A. oncophyllus* and *A. variabilis*.

The induction of thermo-irreversibility is a function of temperature, pH, time and thermal conductivity of the material being processed. Thermal conductivity depends to a large extent on the solids content of the system. Pure aqueous systems require a far lower heat input than systems with, for example, a high proportion of meat or other solids. In general the higher the pH the shorter the time or the lower the temperature that is required to impart thermo-irreversibility. However high pH values in the finished food product render it less palatable and it is therefore preferred that the heat treatment process take place when the pH of the material being rendered heat irreversible lies between pH 6 and 8. However it is possible to use a process employing

higher pH values particularly if the food material produced is subsequently to be one of several components in a canned or bottled food product, where the higher alkali levels will be substantially neutralised by the other food materials.

The preferred ratio of xanthan gum to glucomannan is in the range 5:95 to 95:5 especially 1:10 to 10:1 and the preferred concentration of the mixture in the aqueous phase is 0.02% to 6% more especially 0.5% to 4% by weight.

The following examples illustrate the invention.

In the Examples the crude Chinese glucomannan contains about 50% of pure glucomannan and the Japanese refined glucomannan contains 70 to 75% pure glucomannan.

EXAMPLE ONE

A meat mixture having a pH of 6.8 was prepared to the following recipe:

Ingredient	%
Minced Meat Offal	70
Water	27
Japanese Refined Glucomannan	1
Xanthan Gum (Keltrol TM)	1
Potassium Chloride	0.5
Sodium Tripolyphosphate	0.5

The glucomannan gum was dispersed in water and allowed to stand for ten minutes to aid hydration of the gum. The other ingredients were then added and the whole mix was raised in temperature to 90° C. over a period of 15 minutes whilst continually being stirred. The mixture was filled into tall cans which were then sealed. The cans were sterilised in a pressure cooker at 130° C. for 60 minutes, before being cooled to ambient temperature in running water.

The can contents, which were found to consist of a single, uniformly fine textured, strong elastic piece of meat-like material shaped by the can, was cut into $\frac{1}{2}$ inch chunks. Two experiments were carried out on the chunks.

1. The chunks were then added to a commercial meat-in-jelly pet food mixture at a level of 10% of the mixture which was then canned and sterilised at 130° C. for 60 minutes. The cans were cooled, opened and the contents examined. The meat chunks had retained their original shape, demonstrating heat irreversibility, and had an elastic, springy texture and appearance similar to that of cooked heart.
2. The chunks were placed in a can with tap water at a ratio of 20% pieces to 80% water. The cans were sealed and sterilised at 130° C. for one hour. After cooling the cans were opened and the contents examined. The chunks had retained their original cut shape confirming heat irreversibility, and had a firm, elastic texture similar to that of cooked meat offal.

EXAMPLE TWO

A meat mixture having a pH of 6.7 was prepared according to the following recipe:

Ingredient	%
Minced Meat Offal	50
Tap Water	45.7
Crude Glucomannan (Konjac) of Chinese origin	1.5

-continued

Ingredient	%
Xanthan Gum (Keltrol TM)	0.5
Agar Technical grade (Oxoid)	0.5
Potassium Chloride	0.5
Sodium Tripolyphosphate	0.5
Caramel Solution	0.6
Erythrosine Solution	0.2

The meat mixture was prepared and sterilised as described in Example One. The formed meat was cut into chunks and tested using the two experiments described in Example One. Both experiments demonstrated the heat irreversibility of the chunks. However the chunks had a firmer texture than those of Example One and were akin to cooked liver in texture and appearance.

EXAMPLE THREE

Ingredients	%
Minced Meat Offal	50
Crude Glucomannan (Konjac) of Chinese origin	1.2
Xanthan Gum (Keltrol TM)	0.33
Carrageenan from Eucheuma Cottonii	0.66
Water	46
Potassium Chloride	0.5
Sodium Tripolyphosphate	0.5
Caramel Solution	0.6
Erythrosine Solution	0.2

The mixture which had a pH of 6.7 was prepared, sterilised and tested by the two experiments described in Example One. Both experiments demonstrated the heat irreversibility of the chunks. However the chunks had a softer, more elastic texture similar to that of lung.

EXAMPLE FOUR

A beefburger mixture having a pH 6.5 was prepared according to the following recipe:

Ingredient	%
Lean Beef	20
Fat Beef	40
Crude Glucomannan (Konjac) of Chinese origin	1.5
Xanthan Gum	0.4
Agar Technical Grade (Oxoid)	0.6
Sodium Chloride	1.0
Water	36.5

The glucomannan gum was dispersed in the water and allowed to hydrate for ten minutes. The other ingredients were then added and the mix was raised to 90° C. by heating with continuous mixing over a period of 15 minutes. The mixture was then filled into tall cans which were then sealed. The cans were sterilised in a pressure cooker at 115° C. for 110 minutes. After cooling the can contents were found to consist of a firm uniformly textured piece of meat like material with no fat separation evident.

Beefburger sized pieces were cut from this piece and fried in fat in a pan for ten minutes. They were found to have a good beefburger like bite and texture, were moist and juicy with a good flavour. Canning provides a convenient means of storing the 'beefburgers' until required for use.

EXAMPLE FIVE

An apple puree having a pH of 6.8 was prepared by macerating the flesh of Cox's Orange Pippin apples in a Kenwood blender.

This was then used in the following recipe:

Ingredient	%
Apple Puree	64
Japanese Refined Glucomannan	1
Low Acetyl Gellan TM Gum	0.5
Xanthan Gum (Keltrol TM)	0.5
Sodium Tripolyphosphate	1.6
Sucrose	6
Water	26.4

The glucomannan gum was dispersed in the water and allowed to hydrate for ten minutes. The other ingredients were added and the mix raised to 90° C. by heating with continuous mixing over a period of 15 minutes. The mixture was then filled into handy sized cans which were then sealed. The cans were sterilised in a pressure cooker at 115° C. for 90 minutes.

After cooling the contents were found to consist of a firm uniformly textured piece of apple like material.

This was cut into $\frac{3}{4}$ inch size pieces and canned in a light sugar syrup. After sterilisation and cooling the cans were opened and the contents examined. The apple pieces had retained their original cut shape, confirming heat irreversibility and had a firm texture similar to that of cooked whole apple pieces.

What we claim is:

1. A method for making a thermo-irreversible aqueous gel, which comprises subjecting a gellable combination of xanthan gum and a glucomannan gum at a pH above 6.5 to a heat treatment under conditions of temperature and time to form a gel and to cause the gel to become thermo irreversible.

2. A method according to claim 1 wherein the pH is between 6.5 and 10.

3. A method according to claim 1 wherein the pH is between 6.5 and 8.

4. A method according to claim 1 wherein the gel also includes food materials.

5. A method according to claim 4 wherein the food materials comprise meat, fruit, or vegetable material.

6. A method according to claim 1 wherein the gel also includes other gums and/or gelling agents.

7. A method according to claim 6 wherein the gel includes agar, carrageenan, pectin, alginate, gellan or guar gum.

8. A method according to claim 1 wherein the ratio of xanthan gum to glucomannan gum is in the ratio of from 5:95 to 95:5.

9. A method according to claim 8 wherein the ratio of xanthan gum to glucomannan gum is in the range 1:10 to 10:1.

10. A method according to claim 1 wherein the concentration of xanthan gum and glucomannan gum in the aqueous phase is from 0.02% to 6%, by weight of the gel.

11. A method according to claim 10 wherein the concentration of xanthan gum and glucomannan in the aqueous phase is from 0.5% to 4%, by weight.

12. A method according to claim 1 wherein the glucomannan is a glucomannan from the corms of *Amorphophallus* species.

13. A thermo-irreversible gel from xanthan gum and a glucomannan gum.

* * * * *

United States Patent [19]

Cheney et al.

[11] 4,427,704

[45] Jan. 24, 1984

[54] **FOOD PRODUCT THICKENED OR GELLED WITH CARRAGEENAN AND GLUCOMANNAN**

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[21] Appl. No.: 341,008

[22] Filed: Jan. 20, 1982

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 138,726, Apr. 9, 1980, abandoned, and Ser. No. 310,281, Oct. 9, 1981, abandoned.

[30] Foreign Application Priority Data

Apr. 11, 1979 [GB] United Kingdom 7912816
Oct. 9, 1980 [GB] United Kingdom 8032684

[51] Int. Cl.³ A23G 1/00

[52] U.S. Cl. 426/104; 426/573;
426/574; 426/575; 426/656; 426/657

[58] Field of Search 426/615, 640, 630, 573,
426/574, 575, 104, 802; 536/114

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[57] ABSTRACT

What are disclosed are edible materials containing a thickened or gelled phase comprising a mixture or a reaction product of at least one carrageenan and at least one glucomannan, wherein the gelled phase may be either a thermo-irreversible gel or a thermo-reversible gel and the pH of the edible material is below 8.

27 Claims, No Drawings

FOOD PRODUCT THICKENED OR GELLED WITH CARRAGEENAN AND GLUCOMANNAN

This application is a continuation-in-part of application Ser. No. 138,726 filed Apr. 9, 1980 and now abandoned and of application Ser. No. 310,281 filed Oct. 9, 1981 and now abandoned.

This invention relates to food products and, especially to a gelling system for use in the preparation of gelled or thickened food products.

A variety of gelling, binding and thickening agents, are used in the food and confectionary industries to impart desired textural and aesthetic qualities to food-stuffs including, for example, meat loaves, canned pie fillings, petfoods, ice cream, yoghurts, formed fruit pieces, etc.

It is known that glucomannans such as those extracted from the *Amorphophallus* sp. for example *A. konjac*, when treated with alkalis react to form a very tough thermo-irreversible gel. The pH required for this gelling reaction is at least 9 and a pH greatly in excess of 9 is frequently used. It is widely believed that calcium ions are also essential for this process.

It is also known that gels can be formed using for example pectins and seaweed extracts such as alginates and agar. Alginates and pectates normally form thermo-irreversible gels in the presence of divalent ions. The reaction rate and strength of these thermo-irreversible gels increases with decreasing pH. By control of divalent ion availability, which is itself pH dependent, a thermo-reversible gel can be produced using pectates.

Certain forms of carrageenan, especially kappa and iota carrageenans, but not lambda-carrageenan, can also be used to form gels. These gels are thermo-reversible and although carrageenans can form gels at low pH, the gels are readily hydrolysed if heated at temperatures in excess of 100 degrees Centigrade at pH values below 7. The extent of hydrolysis is very pH dependent increasing sharply with decreasing pH.

It is further known that there is an interaction between kappa carrageenan and locust bean gum (carob gum) which results in enhanced viscosity development and gelation properties. A mixture of carob gum and carrageenan is widely used to provide viscous gravies, in for example canned pie fillings, and thermo-reversible gels in for example canned petfoods, brawns and table jellies. An additional advantage of the interaction is that the carrageenan gel texture is modified to provide additional desirable characteristics such as reduced brittleness and increased softness.

In contrast to the thermo-irreversible gels of calcium alginate and calcium polypectate, carrageenan/carob gum mixtures cannot be used to provide structure in formed products which are to be subjected to heating above the melting point of the gel system. Thus, for example the carrageenan/carob gum gelling system cannot form the basis of a formed chunk in a product which requires to be heated above the melting point of the gelling system since the chunk disintegrates on melting of the gel.

Until now, carob gum has been thought to be unique in its ability to enhance the gelling or thickening properties of carrageenan. Although, like carob gum, guar gum and tara gum are galactomannans, their interaction with carrageenans is considerably less than that of carob gum and these polysaccharides are of little use in this context.

It has been proposed in Japanese published patent application No. 1978/52648 to produce a gelled seaweed food by blending dissolved or colloidal seaweed with dissolved Devils Tongue material (a glucomannan containing material). The blend is caused to gel by the normal method for gelling glucomannan, namely, the addition of alkali. The gel is a thermo-irreversible gel.

The presence of high alkalinity in food products is generally undesirable and accordingly the presence of a thickened or gelled phase which has been produced at high pH in most food products is very unacceptable.

This invention is based on the observation that in complete contrast to the teaching of the prior art, glucomannans can be caused to form gels at a pH not higher than 8 in a gelling system in which they are present with a carrageenan.

Parent application Ser. No. 138,726 filed Apr. 9, 1980 and now abandoned teaches that thermo-irreversible gels can be produced by reacting a mixture of at least one glucomannan and at least one carrageenan at a temperature of at least 100° C. for a sufficient period of time provided that the pH is at least 5 but that in the presence of certain foodstuffs, especially meat and other proteinaceous materials the gels formed under the same conditions are thermo-reversible. Later filed patent application Ser. No. 310,281 filed Oct. 9, 1981 and now abandoned teaches that by suitably adjusting the conditions of gel formation thermo-irreversible gels can be produced, when the pH of the aqueous phase is between 5 and 8, whether or not the temperature is above 100° C. and whether or not meats and other proteinaceous materials are present in the aqueous phase. More in particular, thermo-irreversible gels can be produced using a carrageenan/glucomannan reaction system when the pH is between 5 and 8 provided that the heat input is sufficient, even though the temperature of the system is not raised above 100° C. and/or proteinaceous material of vegetable or animal origin is present.

Thus the gels which can be formed may be thermo-reversible or thermo-irreversible depending on the treatment to which the gelling system is subjected.

While the mechanism of gel formation is not fully understood, the degree of gel formation and the type of gel formed appears to be governed, inter alia, by pH, the glucomannan and carrageenan content (the "gum" content) and the heat input.

At pH values below 5.0, the glucomannan/carrageenan system always produces a thermo-reversible gel.

It has been observed however that in the presence of certain foodstuffs, for example meats and other proteinaceous materials of both vegetable and animal origin, the pH below which it is generally impossible to produce thermo-irreversible gels seems to be somewhat higher. This may be due to the inherent acidity of the proteinaceous materials but it appears that generally speaking for the formation of a thermo-irreversible gel in the presence of meat and other proteinaceous materials the pH should be at least 6.3 to 6.4. The thermo-reversible gels can be formed simply by incorporating a mixture of powdered glucomannan and carrageenan in hot water or can be formed in complex systems such as sterilised canned meat products. For thermo-irreversible gels however the gelling system must be subjected to a heat input which is at least equivalent to heating the gelling system to a temperature of at least 50° C. for a period of up to 16 hours; the particular time needed for gel formation depending basically on the temperature, when all other conditions are equal. Under the heating

conditions normally applied in the heat sterilisation of canned food products, for example 110° to 130° C. for 50 to 60 minutes, a thermo-irreversible gel will normally be formed with a total gum content as low as 1% when the pH is between 6.3 and 8. As indicated hereinbefore however for thermo-irreversible gel formation it appears to be essential that the pH is above 5 but apart from this the heat input can be lower, the closer the pH is to 8 and the higher the concentration of gellable constituents in the aqueous phase of the system. The higher the temperature, of course, the shorter the heating period required to form a thermo-irreversible gel.

Surprisingly, moreover, it has been found that the time to form a thermo-irreversible gel can be greatly reduced, when all other factors are the same, if the gelling system, having been produced by dissolving the ingredients in a hot aqueous phase, is cooled and subjected to an ageing process at room temperature before it is reheated to form the gel.

It has also been found that the presence of certain other ingredients in the gelling system affects either the heat input required to form a gel or the toughness of the gel obtained for a given heat input. Thus, for example the presence of potassium ions in the gelling system produces a marked increase in the toughness of the gel, as also does the presence of carob gum in addition to the other gum ingredients.

The invention provides a food product having a pH not higher than 8 comprising a gelled or thickened aqueous phase containing a mixture or a reaction product of at least one glucomannan and at least one carrageenan.

The invention also provides a process for the production of an edible product having a pH between 5 and 8 and having a gelled aqueous phase provided by a mixture of at least one glucomannan and at least one carrageenan, which comprises subjecting a gellable combination to a temperature of at least 50° C. for a period of up to 16 hours such as to form a thermo-irreversible gel in the aqueous phase.

The invention further provides a meat analogue comprising proteinaceous material dispersed in and bound together by a thermo-irreversible gelled aqueous phase, wherein the gelling system comprised a mixture of at least one glucomannan and at least one carrageenan.

Any carrageenan or carrageenan-type polysaccharide, for example, furcellaran is suitable. The carrageenan may be used in a crude form (e.g. washed seaweed) or in an alkali modified form or in the form of the conventional carrageenan extracts of commerce. The carrageenan may be any form of carrageenan such as lambda, iota or kappa carrageenan or any mixture thereof, but the preferred carrageenan types are those containing some kappa carrageenan.

The glucomannans may be used in a purified form or in the crude form. The crude form may merely be the ground source of glucomannan without further treatment. Although and glucomannan is suitable, the preferred glucomannans, mainly because they are only ones that are readily commercially available, are those that are found in the corms of the *Amorphophallus* genus and in particular in the corms of *A. rivieri* (Syn *A. Konjac*), *A. oncophyllus*, *A. variabilis*, *A. bulbifera* and *A. blumei*.

The preferred ratio of glucomannan to carrageenan is in the range of 20:1 to 1:20 and the preferred concentra-

tion of the combined mixture in the aqueous phase is 0.01% to 5%, preferably 0.5 to 5% by weight.

The product of the invention is an edible material having a pH not higher than 8, which is structured, or shaped, or bound, substantially by a gel matrix produced from a mixture of glucomannan and carrageenan in the aqueous phase.

The edible material of the invention may be any foodstuff or confectionery in which it is desired to have a gelled or thickened phase. As a thermo-irreversible gel the food product may comprise, for example a gelled chunk which with the addition of flavouring and colourings or other similar food materials may be used as a meat analogue and in this form the material may have a texture very similar to cooked lung. Preferably, as a thermo-irreversible gel, however, the gel serves as a binder for a meat analogue comprising meat or other proteinaceous material dispersed in and bound together by the gelled aqueous phase. As a thermo-reversible gel the edible material may be for example a meat-in-jelly petfood or at very acid pH down to about say 3 a thermo-reversible gel may be present in gelled deserts and confectionery, especially fruit based products in which the fruit acids considerably lower the pH.

The edible product of this invention may be any foodstuff or confectionery in which it is desired to have a structured or shaped form which is resistant to structural breakdown upon heating. The gelled foodstuff may include flavouring, and colouring ingredients. If desired, humectants and fungistats may be included to provide microbiological stability in, for example, so-called "semi-moist" foods. A major advantage of the gelling system over other polysaccharide gelling systems such as alginates and polypectates is that there is no necessity for treatment with divalent or polyvalent ions, a process which often imparts a palatability negative to the product unless an efficient washing stage is included.

Another advantage of the gelling system over calcium alginates lies in the stability of the glucomannan/carrageenan gels to heating in the presence of polyphosphates. Food analogues structured by calcium alginate soften considerably when heated in the presence of polyphosphates whereas the products of this invention do not. This is particularly useful for meat analogues which are to be included in common convenience foods since these often contain polyphosphates.

Yet another advantage of the gelling system used in this invention is that it is odourless and flavourless even after severe heat treatment. This is in marked contrast to many vegetable protein binders such as the soya, cottonseed, and wheat proteins used in commerce. The gelling system of the invention does not therefore contribute a palatability negative to the foodstuff in which it is included.

The following Examples illustrate the invention. In the Examples the carrageenans were commercially available samples of the type specified and the *Amorphophallus* sp. extract contains approximately 90% glucomannan.

EXAMPLES

1. Thermo-reversible gels.

A petfood product was prepared to the following recipe:

INGREDIENT		% by weight
"Meats"	Offal Meats	40
	Fibrous Muscle Meat	16
	Hydrated T.V.P.	10
	Condensed Whey	3
"Gravy"	Dye Solutions	0.7
	Water	29.09
	Potassium Chloride	0.5
	Kappa-carrageenan	0.16
	Carob gum (Industrial Grade)	0.55
		100.00

The gravy was prepared by mixing all the ingredients at room temperature using a high shear stirrer. Sufficient alkali was added to the gravy in order to maintain a final product pH of 6.2. The gravy was then added to the coarsely chopped "meats" and the product was filled into metal cans, which were sealed and heat sterilised in a pressure cooker @ 130° C. for 60 minutes after which time the cans were immersed in cold water for half an hour. The product was examined after 1 day.

A similar product was prepared but instead of the 0.16% carrageenan and 0.55% carob gum added to the gravy, 0.11% carrageenan and 0.55% glucomannan extracted from *Amorphophallus* sp. was used.

Upon examination the products were assessed to be similar in appearance, taste and firmness. The product containing glucomannan/carrageenan was rated as tougher to cut than the control containing carob gum/carrageenan even though the carrageenan level was lower.

The pH of both products was 6.2.

Both gels were thermo-reversible each melting at 75° C. and setting at 42° C. and 52° C., respectively.

EXAMPLE 2

This example demonstrates the greater stability of glucomannan/carrageenan solutions to heating at low pH.

The process of Example 1 was repeated using the following recipe.

INGREDIENT		CONTROL PRODUCT % by weight	TEST PRODUCT % by weight
Meat	Offal Meats	37	37
	Fibrous Muscle Meat	16	16
	Hydrated T.V.P.	10	10
	Condensed Whey	6	6
Gravy	Dye Solutions	0.7	0.7
	Water	29.09	29.09
	Potassium Chloride	0.5	0.5
	Kappa carrageenan	0.16	0.16
	Carob gum (Industrial Grade)	0.55	—
	<i>Amorphophallus</i> sp. extract	—	0.55
		100.00	100.00

The pH of both products was 5.7.

The control product containing carob gum barely supported its own weight and consisted of meats surrounded by low areas of very weak gel slurry and a large quantity of free water liquid. This is typical of the degradation of this gelling system subjected to high temperatures at relatively low pH.

In contrast the product containing glucomannan was an integral solid meat and jelly pack, self supporting and containing areas of clear, soft, tough gel without syneresis.

EXAMPLE 3

This Example demonstrates the preparation of a "formed" solid which is stable to heat in a thermo-irreversible structure using carrageenan/glucomannan.

A 6.8 pH buffer solution was prepared using;

0.4% NaH ₂ PO ₄ · 2H ₂ O	}	In distilled water
0.44% Na ₂ HPO ₄		
0.2% KCl		

2 parts of kappa carrageenan and 5 parts of *Amorphophallus* sp. extract were dispersed in 1000 parts of the buffer solution and heated to the boil with stirring.

The dispersion was heated in an autoclave at 130° C. for 50 minutes. After removal from the autoclave the resulting firm, very tough, solid was cut into chunks. The chunks exhibited remarkable resistance to shearing forces and had a texture similar to cooked lung. With the addition of flavourings and colourings the chunks make an excellent meat analogue.

The chunks were heat sterilised in water in sealed cans at 130° C. for 1 hour. The chunks retained their separate identity demonstrating thermo-irreversibility of the gel.

EXAMPLE 4

This example demonstrates the use of different carrageenans.

(a) Use of Iota carrageenan

The process of Example 1 was repeated using the following recipe:

INGREDIENT		CONTROL PRODUCT % by weight	TEST PRODUCT % by weight
Offal Meats	Offal Meats	37	37
	Fibrous Meat	7	7
	Hydrated T.V.P.	26	26
	Dye solutions	1.5	1.5
Water	Water	27.4	27.0
	Sodium Chloride	0.4	0.4
	Calcium Hydroxide	0.1	0.1
	Iota Carrageenan	0.6	0.6
	<i>Amorphophallus</i> sp. extract	—	0.4
	pH	6.1	6.3

The control product containing no glucomannan was barely integral just supporting its own weight. The pack readily broke down under slight pressure to reveal glossy meat in a viscous gravy. There were small areas of a very weak paste-like gel.

In contrast, the product containing the glucomannan was integral easily supporting its own weight. This pack had significant areas of an elastic clear glossy gel.

(b) Use of Lambda Carrageenan

The process of example 1 was repeated except that:

In the control product the carrageenan and carob gum were replaced by 0.5% Lambda carrageenan and the difference was corrected for adjustment of the water content. The pH of the product was 6.6.

In the test product the carrageenan and carob gum were replaced by 0.5% Lambda carrageenan and 0.4% *Amorphophallus* sp. extract. Again the recipe was cor-

rected by adjustment of water content. The pH of the product was 6.8.

The control was a non-self supporting meat in gravy product. The gravy was viscous, glossy and clear.

The product containing the glucomannan was firmer and more resistant to rupture and had some areas of clear gel.

EXAMPLE 5

This example demonstrates the use of different types of glucomannan source.

Example 1 was repeated with the carrageenan and carob gum replaced by the following ingredients:

In product A, *Amorphophallus oncophyllus* extract (0.31%) and kappa carrageenan (0.32%) were used (pH 6.8).

In product B, the process and recipe of product A was repeated but replacing the 0.31% *A. oncophyllus* extract by 0.25% *A. rivieri* extract (pH 6.7).

In product C, the process and recipe of product A was repeated but replacing the 0.31% *A. oncophyllus* extract by 0.31% glucomannan from Indonesian *Amorphophallus* sp. extract prepared by the process described in Japanese published patent application No. 1979/49346 (pH 6.8).

Examination of the finished products after the day showed that all three were virtually identical being integral solid meat and jelly packs, self supporting and containing areas of clear, soft, tough gel without syneresis.

EXAMPLE 6

This example demonstrates the interaction between glucomannan and carrageenan to produce thermo-irreversible gels under different pH conditions.

1. Buffer solutions at pH values of 5.5, 6.5, and 7.0 were prepared to the following formation:

pH	mg Na ₂ HPO ₄	mg NaH ₂ PO ₄
5.5	205	4795
6.5	1615	3385
7.0	3090	1910

Each of the above dry salt mixtures was dissolved in 500 ml of distilled water.

Kappa carrageenan was dissolved in each buffer at 80° C. at a concentration of 1% w/v.

Once the carrageenan has dissolved, 1% glucomannan as used in Example 5 product C is added while mixing with a high shear mixer.

The solutions were sealed in cans, heat sterilised at 130° C. for 1 hour, cooled and examined.

For comparison purposes, the above exercise was repeated replacing the two gums by 1% of the glucomannan alone in one case and by 1% kappa carrageenan alone in the second case.

The results obtained are noted below.

	1% kappa-carrageenan	1% glucomannan	1% kappa-carrageenan and 1% glucomannan
pH 5.5	Thin solution	Slightly viscous solution	Tough, slightly brittle gel; similar texture to

-continued

	1% kappa-carrageenan	1% glucomannan	1% kappa-carrageenan and 1% glucomannan
pH 6.5	Very weak, brittle gel; Excess syneresis	Viscous solution	alginate gels Tough brittle gel
7.0	Weak, brittle gel; some syneresis	Viscous solution; some very weak gel pieces present	Tough brittle gel

The gels produced using 1% glucomannan in conjunction with 1% kappa carrageenan were cut into chunks and canned in water. These were then re-processed at 130° C. for 1 hour.

After re-processing, the chunks remained integral and discrete.

EXAMPLE 7

This example relates to a chocolate jellied-milk.

RECIPE	TEST PRODUCT	CONTROL
Calcium Sulphate	0.50 g	0.50 g
Potassium citrate	1.25 g	1.25 g
Sugar	77.00 g	77.00 g
Chocolate powder	10.00 g	10.00 g
Low methoxyl pectin (DE of 30-50%)	2.00 g	2.00 g
Potassium-sensitive carrageenan	0.62 g	0.62 g
Calcium-sensitive carrageenan	1.19 g	1.19 g
Glucomannan as used in Example 5 product C	0.95 g	—
Carob gum (Industrial Grade)	—	0.95 g

The above dry powders were weighed out and mixed together.

570 ml of milk was then heated to 85° C. and the dry powders were whisked in using an egg-whisk.

The resulting mixture was then allowed to set at room temperature for 2-3 hours, to form the product.

The recipe allows by the addition of preservatives, flavours and food-grade colours although these are not included in the recipe as given.

The control product, containing carob gum was a neutral (pH 6.1) chocolate-flavoured dessert gel that cut cleanly with a spoon. There was some syneresis. The product containing glucomannan had a pH of 5.97 and a similar texture but showed no syneresis.

EXAMPLE 8

This example relates to a fruit-flavoured dessert gel and demonstrates the use of glucomannans in low pH food systems.

RECIPE	TEST PRODUCT	CONTROL
Calcium sulphate	0.5 g	0.5 g
Adipic acid	2.5 g	2.5 g
Potassium citrate	1.25 g	1.25 g
Sugar	77.00 g	77.00 g
Low methoxyl pectin (DE 30-50%)	2.00 g	2.00 g
Potassium-sensitive carrageenan	0.62 g	0.62 g

-continued

RECIPE	TEST PRODUCT	CONTROL
Calcium-sensitive carrageenan	1.19 g	1.19 g
Glucomannan as used in Example 5	0.95 g	—
product C	—	0.95 g
Carob gum (Industrial Grade)	—	0.95 g

The above powders were weighed out and mixed together.

570 ml of pineapple juice was heated to 85° C. and the dry powders incorporated with an egg whisk.

The resulting mixture was then allowed to set for 2-3 hours at room temperature to form the product.

The formation allows for the addition of preservatives, flavours and food-grade colours as required although these are not included in the recipe above.

The control product containing carob gum was an acidic (pH 3.3) pineapple-flavoured dessert gel that cut cleanly with a spoon. There was some syneresis. The product containing glucomannan had a pH of 3.3 and a similar texture but showed no syneresis.

EXAMPLE 9

This example demonstrates the preparation of a typical thermally irreversible meat analogue product. The meat analogue product was prepared using the following recipe:

	INGREDIENTS	% by Weight
Meats	Fibrous Muscle Meats	27.3
	Offal Meats	16.2
	Ground Bone	6.5
Gravy	Amorphophallus sp. extract	1.5
	Kappa - carrageenan	1.0
	Water	47.5
		100.00

The meats were coarsely chopped and then mixed in the proportions given above, before being minced through a 5 mm screen. The minced meats were then added to the correct proportion of water and the whole was then heated to 90° C. with occasional stirring. When the mixture had attained a temperature of 90° C. the gravy powders were added, using the proportions given above, while the mixture was thoroughly macerated using a high-shear stirrer. During the addition of the gravy powders the temperature of the mixture was kept in the range 90°-95° C. When the gravy powders were evenly dispersed, the mixture was poured into an aluminium tray, covered and left to cool. When cool, the product was processed in a pressure cooker after which time the product was cooled.

When cool, the product was found to be tough, with a meaty appearance and could be cut cleanly into chunks with little or no fines being produced. The product resembled cooked lung.

The pH of the product was 6.4. The product was found to be thermally irreversible when assessed in the following manner:

The product was cut into cubes of side-length about 25 mm and 250 g of the cubes were placed in a metal can. The can was then filled with water and sealed before being processed in a pressure cooker at 130° C. for one hour. The can was then cooled by immersion in cold, running water. When cool, the can was opened

and the contents assessed. Thermo-irreversibility was confirmed since the chunks were still tough and discrete with clean surfaces after this treatment. Thermally-reversible chunks fuse together under the test conditions forming a single lump.

The structural integrity of the analogue is entirely due to the glucomannan and carrageenan present, since any contribution from the meats was destroyed by the 90° C. pre-heat treatment.

EXAMPLE 10

This example demonstrates the advantage of ageing the analogue mix prior to the heat forming process to improve the analogue toughness.

	Ingredients	% by Weight
Meats	Fibrous Muscle Meats	27.3
	Offal Meats	16.2
	Ground Bone	6.5
Gravy	Amorphophallus sp. extract	0.75
	kappa - carrageenan	0.5
	Water	48.75
		100.0

Using the above recipe the process of Example 1 was repeated up to and including the addition of the gums at 90° to 95°. When the gums were evenly dispersed, the mixture was split into two equal portions.

Product A

The hot mixture of one of the portions was poured into cans which were immediately sealed and transferred to a pre-heated autoclave. Without delay the cans and contents were heat sterilized at 130° C. for 50 minutes after which time they were cooled to room temperature by immersing in cold water. This product had had no ageing prior to the heat setting process.

Product B

The hot mixture of the second portion was poured into cans which were sealed and left to cool to room temperature overnight. After 12 hours at room temperature, the cans and contents were heat sterilized in a similar manner to Portion A. This product has been aged prior to the heat setting process.

The meat analogues resulting from Portion A and Portion B were cut into chunks and subjected to the test for thermo-irreversibility and described in Example 1.

Chunks from Product A were fused together to form a single lump. Some chunk definition was evident within the lump but the chunks were weak.

Chunks from Product B were discrete, had clean surfaces and were tougher than the chunks from Product A. The pH of both products was 6.5.

EXAMPLE 11

This example illustrates the preparation of a thermally irreversible meat analogue product using raw meats.

The product was prepared according to the following recipe:

	Ingredients	% by Weight
Gravy	Fish	50
	Water	47.5
	kappa - carrageenan	1.0
	Amorphophallus sp. extract	1.5

-continued

Ingredients	% by Weight
	100.0

The fish was chopped and then minced through a 5 mm screen.

The gravy was prepared separately, by firstly heating the water to a temperature of 90° C. The water was maintained at this temperature while the Amorphophallus sp. extract and the kappa carrageenan were added and dispersed using a high shear mixer. When the powders were fully dispersed, the gravy was added to the minced fish and the resultant mixture was homogenized using a high shear mixer.

The product was then left to cool to room temperature before being processed in a pressure cooker at 110° C. for one hour. The product was finally allowed to cool to room temperature before being assessed for appearance, pH, toughness and thermo-irreversibility.

The thermally-irreversible product was tough with a texture similar to a meat loaf, the fish being evenly dispersed throughout the pack. The pH of the product was 7.1.

EXAMPLE 12

This example demonstrates the use of the glucomannan/carrageenan gel system to provide a meat analogue with high pet animal acceptance.

1. Analogue Preparation.

The following recipe was used:

Ingredient	% w/w
Liver	12
Offal Meats	28
Fibrous Muscle Meat	16
Hydrated TVP	10
Condensed Whey	3
Carob gum	0.5
Flavouring salts	0.2
Dye Solution	0.7
Water	26.5
	96.9

The ingredients were mixed together and minced through a 4 mm plate.

The minced product was stirred using a low shear mixer whilst adding 1.5% Amorphophallus extract and 1.6% commercial grade kappa carrageenan ensuring that the gums were well dispersed. The resulting mixture was heated in an autoclave for one hour at 130° C. in a suitable container.

After cooling, the solid pack was cut into chunks approximately 10 mm × 7 mm × 7 mm in size to provide the meat analogue.

2. Preparation of Pet Food.

The following recipes were used:

Ingredients	Product A % w/w	Product B % w/w
Meat analogue (as above)	70	—
Gravy A	30	—
Raw Meat Mix (as in 1 above)	—	97
kappa Carrageenan (Commercial Grade)	—	0.2
Water	—	2.8
	100.0	100.0

Gravy A

Ingredient	% w/w
Water	87.5
Liver	12
Dye Solution	0.3
Flavour	0.2
	100.0

The liver and flavour salts were added to the gravy to ensure that in Product A, the concentrations of these palatable ingredients were similar to those in Product B.

Product A

The appropriate weight of chunks analogue was added to the cans and the cans were filled with Gravy A to give the correct ratio of chunks to gravy. The can and contents were sealed.

Product B

All of the ingredients were mixed together and sealed in cans.

Both products were heat sterilized @130° C. for one hour. After cooling to room temperature the can were stored for one day at room temperature before opening to assess the contents. Samples of Product A and Product B were also fed to cats in a preference situation.

Product A consisted of tough, integral, well defined, chunks of meat in a weakly gelled gravy.

Product B consisted of a solid pack of minced meats embedded in a fairly tough clear thermo-reversible jelly.

To a human panel the chunks from Product A tasted similar to the Product B. There was no detectable flavour difference resulting from the inclusion of Amorphophallus extract and carrageenan as the binder system in Product A.

In Cat Preference trials, a panel of 40 felines ate both products with equal relish.

EXAMPLE 13

This example demonstrates the use of hot gum dispersion to aid the development of thermo-irreversible glucomannan/carrageenan gels.

Two meat analogue materials were prepared:

1. With gums mixed in the cold.
2. With gums mixed at elevated temperature.

Both had the following recipe:

Ingredient	% by Weight
Offal Meats	12.8
Fibrous Muscle Meats	22.0
Ground Bone	5.2
Water	57.5
kappa - carrageenan	1.0
Amorphophallus sp. extract	1.0
	100.0

For each meat analogue material, the meat constituents were roughly chopped, thoroughly mixed in their correct proportions and then minced employing the method illustrated in Example 1. The meat mix was then cooked by boiling in water for five minutes. The meats were strained, cooled to room temperature and employed in the following preparations:

1. Cold Gum Dispersal.

To 40 parts of the above meat mix 57.5 parts of water was added. The mixture was then thoroughly dispersed

with a high shear mixer. The required weights of gums were then dispersed into the mix whilst continually shearing for 1-2 minutes. The mixture was then poured into cans, sealed and sterilized at 130° C. for one hour.

2. Elevated Temperature Gum Dispersal.

To 40 parts of meat mix 57.5 parts of water was added.

The mixture was then heated to 90° C. whilst continually stirring with a high shear mixer. The gums were then dispersed into the mix using a high shear mixer and maintaining the temperature at 90° C. for 1-2 minutes. The mixture was then poured into cans, sealed and cooled to room temperature prior to being sterilized at 130° C. for one hour.

Both samples 1 and 2 were allowed to cool to room temperature after sterilization, before being assessed for thermo-irreversibility employing the method illustrated in Example 1.

Upon examination of the meat analogue chunks after the thermo-irreversibility test, obvious differences were apparent.

1. Cold Gum Dispersal.

The chunks had fixed together forming a continuous lump of meat and gel moulded to the shape of the can bottom. Gel had dissolved into the aqueous phase from the chunks producing a very viscous solution. The pH of the solid material was in the range of 6.30-6.38.

2. Hot Gum Dispersal.

The chunks were completely integral retaining their original shape before the test. They were glossy and juicy in appearance. The pH of the chunks was in the range 6.38-6.40. Some excess gel had diffused from the chunks to the aqueous phase to form a viscous solution.

EXAMPLE 14

This example illustrates the formation of thermo-irreversible gels employing a low temperature for a prolonged period of time.

Two 1 liter portions of gel were prepared having the following recipe:

Ingredient	% w/w
1. Amorphophallus sp. extract	1.500
2. kappa carrageenan	1.000
3. NaH ₂ PO ₄ ·2H ₂ O	0.382
4. Na ₂ HPO ₄	0.618
5. Water	96.500
	100.000

The required quantity of water was taken for two liters of gel and heated to 90° C. The water was then mixed using a high shear stirrer and ingredients 3 and 4 added. Ingredients 1 and 2 were then added and mixing continued whilst maintaining a temperature of 90° C. for five minutes. The solution was divided into two equal parts, each being poured into an aluminium tray, covered and allowed to cool.

One of the trays containing the gel was then heated to 76.5° C. for a period of 16 hours, employing a constant temperature water bath and a thermocouple linked to a chart recorder to monitor the gel temperature. The gel was then allowed to cool to room temperature.

Both the heat treated and non heat treated gels were then assessed for thermo-irreversibility employing the method illustrated in Example 1.

Chunks from the non heat treated gel had completely fused together forming one continuous lump at the bottom of the can. The pH of the gel was 6.85.

Chunks from the heat treated gel remained totally integral and retained their original shape. The chunks were tough and glossy in appearance. Some gum had diffused from the chunks into the aqueous phase but this was not excessive.

pH of chunks = 7.01.

EXAMPLE 15

This example illustrates the effect of pH on the toughness of the thermally-irreversibility of the meat analogue product.

Two products were prepared using samples of offal meat from the same source. The products were prepared to the same recipe as that given in Example 3, except that the fish was replaced by the same proportion of offal meat.

The products were prepared in the same way as described in Example 3 except that prior to the addition of the gravy, the offal meat was treated with a suspension of calcium hydroxide in water to adjust the pH.

When the preparation of the products was complete, they were assessed for pH and toughness. Product (A) had a pH of 6.85 was thermo-irreversible and was markedly tougher than product (B) which had a pH of 5.65 and was thermo-reversible.

EXAMPLE 16

This Example illustrates the minimum heat input required to product a thermo-irreversible gel.

A pH 7.1 buffer solution was prepared by dissolving the following salts in distilled water.

Ingredient	Wt/g	% w/w
Na ₂ HPO ₄	49.44	0.618
NaH ₂ PO ₄ ·2H ₂ O	30.56	0.382
Distilled Water	7920.00	99.000
	8000.00	100.000

1 liter of pH 7.1 buffer solution was taken and heated to 90° C. The solution was then stirred employing a Silverson high shear mixer whilst maintaining the temperature at 90° C. 15 grams of knojac and 10 grams of carrageenan were then dispersed into the buffer solution and mixed thoroughly with the Silverson high shear mixer for a period of five minutes. During this time the solution temperature was maintained between 90°-95° C., after which the solution was poured into an aluminium tray, covered and allowed to cool to room temperature. A number of trays were made up in this manner and these were each heated for a period of 16 hours at a different temperature.

Two methods of heating were employed:

- 30°-80° C. using a constant temperature water bath. The aluminium tray was submerged in the water to the upper level of gel. The gel temperature was then allowed to equilibrate with that of the water.
- 80°-130° C. using an Astell autoclave, vented to give temperatures up to 100° C. maintaining atmospheric pressure and under elevated pressure to obtain temperatures up to 130° C.

The temperature of the gel was monitored in each case by means of a previously calibrated thermocouple

linked to a twin channel chart recorder. A second thermocouple was also employed to monitor the temperature of the heating environment. Timing at any given temperature was started at the point where the gel temperature was in equilibrium with the heating environment.

The following heating conditions were employed.

Temperature °C.	Time/Hours
100	16
85	16
76.5	16
65	16
61.5	16
*50	16
41	16

The gels produced were assessed for thermo-irreversibility and toughness employing the following methods:

Toughness

The gels were measured for toughness employing an Instron food tester.

The Instron food tester was set up as follows:

Load cell	=	50 Kg
Crosshead speed	=	500 mm/minute
Chart speed	=	1000 mm/minute

The gel from each of the solutions prepared was emptied from its tray and the subjective textural characteristics of the gel were noted.

Part of the gel was then cut into cubes having approximate side length of 15 mm. 85-90 g of these cubes were transferred into a modified Minnesota cell which included a 10 mm screen. The chunks were then extruded through the screen by means of a plunger which was attached to the Instron load cell. The average toughness value was taken as the maximum load from the Instron recorder trace obtained. This procedure was repeated for four 85-90 g. quantities of chunks and the average toughness value taken.

Thermo-irreversibility

The remaining part of the gel was taken and cut into chunks of approximately 1" side. 250 g. of these chunks were placed in a steel can and the remaining volume made up with water. The can was then sealed and processed at 129° C. for 59 minutes in an Astell autoclave. It was then allowed to cool to room temperature prior to opening.

A thermo-irreversible gel is confirmed if the gel chunks have retained their integral shapes and are not fused together.

A thermo-reversible gel is identified if the gel chunks have melted and fused together in the bottom of the can.

pH values of the gels were measured both before and after the test for thermo-irreversibility.

The results are illustrated in the following table:

Results

Temp. °C.	Thermo-irreversibility	Colour	Toughness	pH
100	Yes	Opaque	2.8	6.9
85	Yes	Opaque	4.7	7.0
76.5	Yes	Opaque	6.0	7.0

-continued

Temp. °C.	Thermo-irreversibility	Colour	Toughness	pH
65	Yes	Opaque	8.0	7.0
61.5	Yes	Opaque	10.0	7.0
*50	Yes/No	Opaque	9.0	7.0
41	No	Translucent	6.6	7.1

*Several experiments were carried out employing 50° C./16 hours heating conditions which produced in some cases, gels which were borderline in terms of thermo-irreversibility and in other cases gels which were thermo-reversible. It can be concluded that the minimum heat input for thermo-irreversibility lies at about 50° C./16 hours.

EXAMPLE 17

In order to establish more clearly the effect of pH on the formation of thermo-irreversible gels in meat analogue materials a number of experiments were carried out using meats at natural pH and at an artificially adjusted neutral pH. For the majority of the experiments the formulation used was as follows:

Meat	50% by weight
Konjac	1.5% by weight
Carrageenan	1% by weight
Water	47.5% by weight.

For one experiment using lung the amount of meat was reduced to 40% by weight and the water content increased accordingly.

The required amount of water for 1 Kg. of product was taken and heated to 90° C. This was then stirred with a Silverson high shear mixer during the addition of the required quantities of konjac and carrageenan. Stirring was continued until a homogeneous mix was obtained.

The required weight of meat was taken and mixed thoroughly with the aqueous gel blend. The resulting mix was spread evenly into an aluminium tray and allowed to cool.

The materials in the tray were heated to a temperature of 110° C. for a period of 60 minutes in an Astell laboratory autoclave. The trays were then allowed to cool prior to being tested for toughness, pH and thermo-irreversibility using the methods described in Example 8.

Results

Meat	Thermo-irreversibility	pH	Chunk toughness/Kg.
Meat trimmings	No	5.7	6.15
Liver trimmings	No	5.7	5.1
Liver trimmings	Yes	6.4	8.7
Fish	Yes	7.1	13.4
Kidney	Yes	7.3	7.3
Lung	Yes	7.2	11.7

In those cases where the pH is below 6 and thermo-irreversibility is not achieved the meat is at its natural pH. In those cases where the pH is above 6.4 and thermo-irreversibility is achieved the pH was initially adjusted to 7-7.5 by the addition of calcium hydroxide.

The results illustrate that when meat is present in the konjac-carrageenan gelling system pH is an important factor in determining whether the gel will be thermo-irreversible or not.

What is claimed is:

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1. A food product having a pH not higher than 8 comprising a gelled aqueous phase and at least one other food material, said gelled phase comprising 0.01 to 5 percent by weight of a mixture or reaction product of at least one glucomannan and at least one carrageenan in a ratio of glucomannan to carrageenan from 20:1 to 1:20.

2. The food product of claim 1 wherein said glucomannan is derived from an *Amorphophallus* species.

3. The food product of claim 1 wherein the gelled aqueous phase is thermo-irreversible.

4. The food product of claim 3 wherein the gelled phase is in the form of chunks or lumps.

5. The food product of claim 4 wherein the other food material comprises flavouring and/or colourings such as to impart the flavour and appearance of meat to the gelled phase.

6. The food product of claim 1 wherein the gelled aqueous phase is a thermo-reversible gel.

7. The food product of claim 6 wherein the other food material is meat.

8. The food product of claim 6 wherein the food product is a dessert gel.

9. The food product of claim 1 having a pH within the range of from 5 to 8.

10. The food product of claim 6 having a pH within the range from 3 to 6.

11. The food product of claim 1, wherein the ratio of glucomannan to carrageenan is within the range of from 1:10 to 10:1.

12. The food product of claim 1, wherein the concentration of total amount of glucomannan and carrageenan in the aqueous phase is from 0.01% to 5% by weight of the aqueous phase.

13. The food product of claim 1, wherein the carrageenan contains at least some kappa carrageenan.

14. The food product of claim 1, wherein the glucomannan is a glucomannan from the corms of the *Amorphophallus* genus.

15. A method for making a food product which comprises mixing a gelling agent of a combination of at least one glucomannan and at least one carrageenan to other edible materials and heating the thus prepared mixture at a temperature of at least 100° C. at a pH not higher than 8 for sufficient time to cause formation of a gelled or thickened aqueous phase in the material.

16. The method of claim 15 wherein the other food materials are selected from the group consisting of meats and other proteinaceous materials of vegetable and/or animal origin wherein heating is continued

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whereby the product forms a proteinaceous material in a thermo-reversible gelled aqueous phase.

17. A process for the production of a food product comprising heating a mixture of at least the glucomannan and at least one carrageenan in water, with flavourings and/or colourings, at a temperature of at least 100° C. at a pH not higher than 8 for a time sufficient to produce a thermo-irreversible gel.

18. A process for the production of an edible product having a pH between 5 to 8 and having a gelled aqueous phase provided by a mixture of at least one glucomannan and at least one carrageenan, which comprises subjecting a gellable combination of at least one glucomannan and at least one carrageenan to a temperature of at least 50° C. for a period of up to 16 hours such as to form a thermo-irreversible gel in the aqueous phase.

19. A process as claimed in claim 18 wherein the gelling system is produced by dissolving the carrageenan and glucomannan in a hot aqueous phase which is then cooled and then reheated to form the thermo-irreversible gel.

20. A process as claimed in claim 19 wherein before being reheated to form the thermo-irreversible gel the solution is held at room temperature for an aging period.

21. A process as claimed in claim 18 wherein the glucomannan is a glucomannan present in the corms of the *Amorphophallus* genus.

22. A process as claimed in claim 21 wherein the glucomannan is a glucomannan derived from *A. rivieri*, *A. oncophyllus*, *A. variabilis*, *A. bulbifera* or *A. blumei*.

23. A process as claimed in claim 18 wherein the carrageenan is a carrageenan type containing at least some kappa carrageenan.

24. A process as claimed in claim 18 wherein the ratio of glucomannan to carrageenan is in the range of 20:1 to 1:20.

25. A process as claimed in claim 18 wherein the concentration of the mixture of glucomannan and carrageenan in the aqueous phase is from 0.01% to 5% by weight.

26. A process as claimed in claim 18 wherein the concentration of the mixture of glucomannan to carrageenan in the aqueous phase is from 0.5 to 5% by weight.

27. A meat analogue comprising proteinaceous material dispersed in and bound together by a thermo-irreversible gelled aqueous phase, wherein the gelling system comprises a mixture of at least one glucomannan and at least one carrageenan.

* * * * *

Poder de Abogado

La abajo firmada, **QUALA S.A.**, sociedad organizada y existente de conformidad con las leyes de Colombia, domiciliada en Carrera 68D No. 39F-51 Sur, Bogotá D.C., Colombia, otorga a **ANDREA TOBOS MATEUS**, tpa 148648, de la firma Martínez y Tobos S.A.S., domiciliada en la Avenida 19 No. 118-30 oficina 209, Bogotá D.C., Colombia, poder amplio y suficiente para que nos represente ante la Superintendencia de Industria y Comercio, en todo lo concerniente a los siguientes asuntos:

a) Presentación y tramitación de oposiciones, a cuyo efecto la faculta para presentar solicitudes, peticiones y demandas, interponer recursos, reclamos, pagar impuestos y tasas, recibir, transigir y desistir, incluyendo facultades para entrar en acuerdos amigables, conciliaciones y transacciones, y en general, a dar ante las autoridades competentes todos los pasos necesarios para la presentación y tramitación de oposiciones.

Asimismo, se concede a la mencionada mandataria poder suficiente para recibir notificaciones a nombre de la compañía, otorgar poderes a quienes vayan a representar a la compañía judicial y extrajudicialmente, responder en juicio a todas las reclamaciones o demandas que por motivo de las oposiciones se presentaren y hacer cuanto fuere necesario ante las autoridades administrativas o judiciales de cualquier orden para el cumplimiento de este mandato, dándoles igualmente facultad para sustituir el presente poder y en caso necesario, revocar dichas sustituciones.

Dado y firmado hoy noviembre de 2009

En Bogota
Por EDGAR IVAN AREVALO
REPRESENTANTE LEGAL
QUALA S.A
C.C 79423566



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Eduar Ivan Aranda
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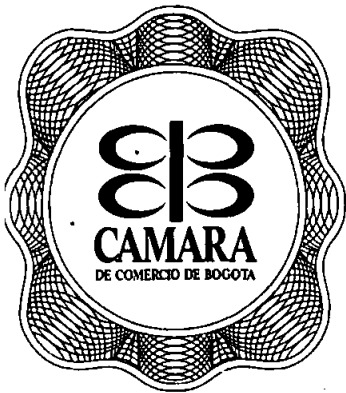


30-10-2009
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Con el Notario Cuarenta y tres del círculo
de Bogotá D.C. hago constar. Que
esta fotocopia coincide con su original.
25 NOV 2009
NOTARIO CUARENTA Y TRES
JUAN ENRIQUE NIÑO GUARIN
NOTARIO
BOGOTÁ D.C.

2009



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CAMARA DE COMERCIO DE BOGOTA

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PAGINA: 1 de 4

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CERTIFICADO DE EXISTENCIA Y REPRESENTACION LEGAL O INSCRIPCION DE DOCUMENTOS

LA CAMARA DE COMERCIO DE BOGOTA, CON FUNDAMENTO EN LAS MATRICULAS E INSCRIPCIONES DEL REGISTRO MERCANTIL

CERTIFICA:

NOMBRE : QUALA S A

N.I.T. : 860074450-9

DOMICILIO : BOGOTA D.C.

CERTIFICA:

MATRICULA NO: 00130709 DEL 13 DE FEBRERO DE 1980

CERTIFICA:

DIRECCION DE NOTIFICACION JUDICIAL : CR 68 D NO. 39F-51 SUR

MUNICIPIO : BOGOTA D.C.

EMAIL DE NOTIFICACION JUDICIAL : quala@quala.com.co

DIRECCION COMERCIAL : CR 68 D NO. 39F-51 SUR

MUNICIPIO : BOGOTA D.C.

EMAIL COMERCIAL : quala@quala.com.co

CERTIFICA:

CONSTITUCION: ESCRITURA PUBLICA NO.226, NOTARIA 6 DE BOGOTA, EL 24 DE ENERO DE 1.980, INSCRITA EL 13 DE FEBRERO DE 1.980, BAJO EL,NO. 81364 DEL LIBRO IX SE CONSTITUYO LA SOCIEDAD LIMITADA DE-NOMINADA "QUALA LIMITADA"

CERTIFICA:

QUE POR ESCRITURA NO. 5387 OTORGADA EN LA NOTARIA 18 DE BOGOTA EL 26 DE DICIEMBRE DE 1.984, ACLARADA POR LA ESCRITURA PUBLICA NO. - 0390 OTORGADA EN LA MISMA NOTARIA EL 14 DE FEBRERO DE 1.985, INSCRITAS EN ESTA CAMARA DE COMERCIO EL 28 DE DICIEMBRE DE 1.984, Y EL 27 DE MAYO DE 1.985 BAJO LOS NUMEROS 163.355 Y 170.593 DEL LIBRO IX, LA SOCIEDAD SE TRANSFORMO DE LIMITADA EN ANONIMA BAJO EL NOMBRE DE " QUALA S.A. "

CERTIFICA:

QUE POR ESCRITURA PUBLICA NO. 5465 DEL 29 DE OCTUBRE DE 2001 DE LA NOTARIA SEXTA DE BOGOTA D.C., INSCRITA EL 07 DE NOVIEMBRE DE 2001 BAJO EL NO. 801318 DEL LIBRO IX, LA SOCIEDAD DE LA REFERENCIA SE FUSIONO CON LA SOCIEDAD SOL NACIENTE S. A. ABSORVIENDOLA.

CERTIFICA:

REFORMAS:

ESCRITURAS NO.	FECHA	NOTARIA	INSCRIPCION
1832	29-IV-1.981	6 BTA	NO.100922 1-VI-1.981
3304	9-VII-1.981	6 BTA	NO.104268 14-VIII-81
7223	23-XII-1.983	6 BTA	NO.144964 30-XII- 83
10135	9-XII-1.986	27 BTA	NO.202426 15-XII- 86
10764	28-XII-1.989	5A.BTA.	NO.284544 17- I -1990
1040	25-II -1.993	18 STAFE BTA.	NO.408663 9-VI -1993

3490 19- X-1.995 32 STAFE BTA NO.514395 31- X-1995
82 14- I-1.992 18 STAFE BTA NO.520908 26-XII-1995

CERTIFICA:

REFORMAS:

E.P. NO.	FECHA	NOTARIA	CIUDAD	FECHA	NO. INSC.
0005465	2001/10/29	0006	BOGOTA D.C.	2001/11/07	00801318
0006035	2002/12/06	0006	BOGOTA D.C.	2003/01/30	00864109
0000508	2004/03/08	0032	BOGOTA D.C.	2004/03/16	00925005

CERTIFICA:

VIGENCIA: QUE LA SOCIEDAD NO SE HALLA DISUELTA. DURACION HASTA EL 26 DE DICIEMBRE DE 2064 .

CERTIFICA:

OBJETO SOCIAL: LA SOCIEDAD TENDRA COMO OBJETO SOCIAL PRINCIPAL, LA ELABORACION, PREPARACION, FABRICACION, PROCESAMIENTO, COMPRA VENTA, DISTRIBUCION Y EN GENERAL COMERCIALIZACION Y MERCADEO DE PRODUCTOS DE CONSUMO MASIVO, TALES COMO PRODUCTOS ALIMENTOS DE TODO TIPO, PRODUCTOS COSMETICOS, DETERGENTES, DENTRIFICOS (SIC). PERFUMES, ARTICULOS DE TOCADOR Y CUALQUIER OTRO TIPO DE PRODUCTOS DE CONSUMO DURABLE Y PERECEDERO DE COMERCIO LICITO. LA RELACION QUE SE HACE ES POR VIA ENUMERATIVA SOLAMENTE, PERO NO ES LIMITATIVA. EN DESARROLLO DE SU OBJETO SOCIAL LA EMPRESA TAMBIEN PODRA IMPORTAR Y EXPORTAR DICHOS PRODUCTOS, CELEBRAR CONTRATOS, ADQUIRIR, CONSERVAR, USAR, CEDER Y VENDER TODO TIPO DE BIEN OBJETO DE PROPIEDAD INDUSTRIAL E INTELECTUAL, ADQUIRIR, CONSERVAR Y GRAVAR TODO TIPO DE TITULOS VALORES Y DEMAS DOCUMENTOS CIVILES Y COMERCIALES, TOMAR INTERESES COMO ACCIONISTA, FUNDADOR O NO EN OTRAS COMPAÑIAS, FUSIONARSE CON ELLAS, INCORPORARSE EN ELLAS, TOMAR Y DAR DINERO EN MUTUO, CON GARANTIAS REALES O SIN ELLAS, EN GENERAL CELEBRAR LOS CONTRATOS DE CAMBIO Y CUENTA CORRIENTE EN TODAS SUS MODALIDADES Y LLEVAR A CABO TODO ACTO QUE SE RELACIONE CON EL OBJETO PRINCIPAL DE LA SOCIEDAD. LA RELACION QUE SE HACE ES POR VIA ENUMERATIVA SOLAMENTE, PERO NO ES LIMITATIVA.

CERTIFICA:

CAPITAL:

**** CAPITAL AUTORIZADO ****

VALOR	:	\$10,200,000,000.00
NO. DE ACCIONES	:	102,000,000.00
VALOR NOMINAL	:	\$100.00

**** CAPITAL SUSCRITO ****

VALOR	:	\$9,023,456,900.00
NO. DE ACCIONES	:	90,234,569.00
VALOR NOMINAL	:	\$100.00

**** CAPITAL PAGADO ****

VALOR	:	\$9,023,456,900.00
NO. DE ACCIONES	:	90,234,569.00
VALOR NOMINAL	:	\$100.00

CERTIFICA:

**** JUNTA DIRECTIVA: PRINCIPAL (ES) ****

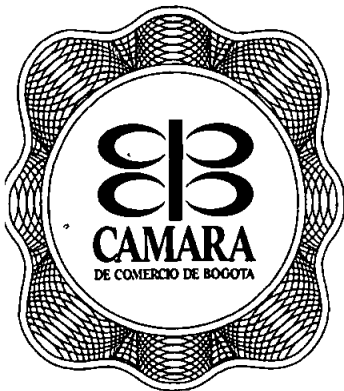
QUE POR ACTA NO. 0000040 DE JUNTA DE SOCIOS DEL 31 DE MARZO DE 2008, INSCRITA EL 29 DE ABRIL DE 2008 BAJO EL NUMERO 01209902 DEL LIBRO IX, FUE (RON) NOMBRADO (S):

NOMBRE
PRIMER RENGLON

LEAL FERNANDEZ ANDRES

IDENTIFICACION

C.C. 000000080421193



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CAMARA DE COMERCIO DE BOGOTA

SEDE CEDRITOS

25 DE NOVIEMBRE DE 2009

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PAGINA: 2 de 4

* * * * *

SEGUNDO RENGLON

DE RHODES DUB MICHAEL JOHN LYON

C.E. 000000000106398

TERCER RENGLON

LEON DUB JORGE FERNANDO

C.C. 000001023163140

** JUNTA DIRECTIVA: SUPLENTE (S) **

QUE POR ACTA NO. 0000040 DE JUNTA DE SOCIOS DEL 31 DE MARZO DE 2008, INSCRITA EL 29 DE ABRIL DE 2008 BAJO EL NUMERO 01209902 DEL LIBRO IX, FUE (RON) NOMBRADO (S):

NOMBRE

IDENTIFICACION

PRIMER RENGLON

RODRIGUEZ BARRIOS MARIA ANGELICA

C.C. 000000039792657

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GIRALDO ARISTIZABAL JULIO CESAR

C.C. 000000019433795

TERCER RENGLON

LEON DUB JOSE PATRICIO MARCELO

C.C. 000001016912138

CERTIFICA:

REPRESENTACION LEGAL: LA SOCIEDAD TENDRA UN GERENTE Y TRES (3) SUPLENTES. EL PRIMER, SEGUNDO Y TERCER SUPLENTES, EN SU ORDEN REEMPLAZARAN AL GERENTE CON LAS MISMAS FACULTADES, ATRIBUCIONES Y LIMITACIONES DE ESTE, EN SUS FALTAS ABSOLUTAS, TEMPORALES O ACCIDENTALES, SIN NECESIDAD DE DECLARACION EXPRESA, EL SOLO EJERCICIO DE UNO CUALQUIERA DE LOS SUPLENTES ENTIENDE LA FALTA O AUSENCIA.

CERTIFICA:

** NOMBRAMIENTOS **

QUE POR ACTA NO. 0000092 DE JUNTA DIRECTIVA DEL 27 DE NOVIEMBRE DE 2002, INSCRITA EL 12 DE DICIEMBRE DE 2002 BAJO EL NUMERO 00857029 DEL LIBRO IX, FUE (RON) NOMBRADO (S):

NOMBRE

IDENTIFICACION

GERENTE

LEAL FERNANDEZ ANDRES

C.C. 000000080421193

SEGUNDO SUPLENTE DEL GERENTE

MEJIA FLOREZ MAURICIO

C.C. 000000019161894

QUE POR ACTA NO. 0000108 DE JUNTA DIRECTIVA DEL 20 DE FEBRERO DE 2004, INSCRITA EL 19 DE MARZO DE 2004 BAJO EL NUMERO 00925915 DEL LIBRO IX, FUE (RON) NOMBRADO (S):

NOMBRE

IDENTIFICACION

TERCER SUPLENTE DEL GERENTE

SERRANO FALLA MARIA VICTORIA

C.C. 000000039774985

QUE POR ACTA NO. 0000146 DE JUNTA DIRECTIVA DEL 10 DE NOVIEMBRE DE 2008, INSCRITA EL 13 DE NOVIEMBRE DE 2008 BAJO EL NUMERO 01255854 DEL LIBRO IX, FUE (RON) NOMBRADO (S):

NOMBRE

IDENTIFICACION

PRIMER SUPLENTE DE GERENTE

AREVALO HERNANDEZ EDGAR IVAN

C.C. 000000079423566

CERTIFICA:

FACULTADES DEL REPRESENTANTE LEGAL: A.- ADMINISTRAR LOS NEGOCIOS DE LA SOCIEDAD Y SUS BIENES Y REPRESENTAR A ESTA JUDICIAL Y EXTRAJUDICIALMENTE ANTE CUALESQUIERA PERSONAS, CONSTITUIR MANDATARIOS A GENERALES O ESPECIALES Y DELEGAR TEMPORALMENTE ALGUNA O ALGUNAS DE SUS FUNCIONES PARA CASOS CONCRETOS Y ESPECIFICOS PREVIA AUTORIZACION DE LA JUNTA DIRECTIVA, B.- CELEBRAR LIBREMENTE TODA CLASE DE NEGOCIOS QUE NO REQUIERAN AUTORIZACION DE LA ASAMBLEA DE ACCIONISTAS O DE LA JUNTA DIRECTIVA DE ACUERDO CON LOS ESTATUTOS; C.- LEGALIZAR Y EJECUTAR LOS ACTOS JURIDICOS PREVISTOS EN LOS ORDINALES E, F, G, H, I, Y L DEL ARTICULO TREINTA Y UNO (31); D.- NOMBRAR Y REMOVER LOS EMPLEADOS NECESARIOS PARA EL BUEN FUNCIONAMIENTO DE LA SOCIEDAD, CON EXCEPCION DE AQUELLOS CUYOS NOMBRAMIENTOS CORRESPONDE A LA JUNTA DIRECTIVA DE ACUERDO CON LOS ORDINALES H Y N DEL ARTICULO TREINTA UNO (31) DE ESTOS ESTATUTOS; E.- CONVOCAR A LA ASAMBLEA GENERAL DE ACCIONISTAS A SUS SESIONES ORDINARIAS Y EXTRAORDINARIAS Y A LAS REUNIONES DE LA JUNTA DIRECTIVA; F.- EJECUTAR LAS DECISIONES DE LA ASAMBLEA GENERAL Y DE LA JUNTA DIRECTIVA Y RENDIR A UNA Y A OTRA LOS INFORMES QUE LES SOLICITEN; G.- AUTORIZAR CON SU FIRMA LOS TITULOS DE ACCIONES; H.- RENDIR CUENTAS COMPROBADAS DE SU GESTION CUANDO SE LO EXIJA LA ASAMBLEA GENERAL DE ACCIONISTAS O LA JUNTA DIRECTIVA Y AL FINAL DE CADA AÑO Y CUANDO SE RETIRE DE SU CARGO; I.- COMO REGLA GENERAL EL GERENTE PODRA CON SUJECION A LAS LIMITACIONES Y REQUISITOS PREVISTOS EN ESTOS ESTATUTOS, REALIZAR LOS ACTOS Y CONTRATOS QUE COMPETEN A LA SOCIEDAD. COLOCAR PEDIDOS, CONTRATAR TRABAJADORES PARA EL SERVICIO DE LA SOCIEDAD, EXIGIR, COBRAR Y PERCIBIR CUALESQUIERA CANTIDADES DE DINERO O DE OTRAS ESPECIES QUE SE ADEUDEN A LA SOCIEDAD; PAGAR A LOS ACREEDORES DE LA SOCIEDAD LLEGAR A ARREGLOS CON ELLOS SOBRE TERMINOS DE PAGO SOBRE SUS ACREENCIAS, GIRAR, ENDOSAR, PROTESTAR, ACEPTAR, Y AFIANZAR TODA CLASE DE GIROS COMERCIALES GIRAR Y ENDOSAR CHEQUES, SUSCRIBIR, RECIBIR Y AFIANZAR PAGARES COMERCIALES, CONSTITUIR UY ACEPTAR DEPOSITOS EN DINERO, REALIZAR TODA CLASE DE TRANSACCIONES BANCARIAS TRANSIGIR CUALESQUIERA LITIGIOS RECLAMOS, Y OTROS CONFLICTOS QUE SE PROMUEVAN CON RESPECTO A LOS DERECHOS U OBLIGACIONES DE LA SOCIEDAD Y PRESENTARLA EN CUALESQUIERA ACTUACIONES O LITIGIOS JUDICIALES O ADMINISTRATIVOS EN QUE LA SOCIEDAD HA DE SER DIRECTA O INDIRECTAMENTE REPRESENTADA ACTIVA O PASIVAMENTE O A NOMBRE DE TERCERA PERSONA SEA PARA INICIAR, PROMOVER O TERMINAR TALES GESTIONES DESISTIR DE CUALESQUIERA JUICIOS O DE CUALESQUIERA RECURSOS APELACIONES U OTROS ACTOS JUDICIALES, REPRESENTAR A LA SOCIEDAD ANTE CUALQUIERA JUNTA DE ACREEDORES DE CARACTER JUDICIAL O EXTRAJUDICIAL, OIR, ACEPTAR, O RECHAZAR EN ELLAS LAS PROPUESTAS DE ARREGLO QUE SE HAGAN, CONFERIR A TERCEROS PODERES ESPECIALES PARA QUE REPRESENTEN VALIDAMENTE A LA SOCIEDAD CUANDO SEA NECESARIA Y REVOCAR TALES PODERES Y FINALMENTE, ACTUAR CUANDO QUIERA QUE FUERE NECESARIO EN DEFENSA DE LOS INTERESES DE LA SOCIEDAD. PARAGRAFO: CORRESPONDE A LA JUNTA DIRECTIVA AUTORIZAR AL GERENTE PARA ADQUIRIR O ENAJENAR BIENES INMUEBLES, PARA CONSTITUIR GRAVAMENES REALES SOBRE ELLOS O PRENDAS SOBRE BIENES INMUEBLES, GARANTIZAR O AFIANZAR OBLIGACIONES DE TERCEROS Y CAUCIONAR CON LOS BIENES SOCIALES OBLIGACIONES DISTINTAS DE LAS PROPIAS DE LA SOCIEDAD. AUTORIZAR AL GERENTE PARA REALIZAR TODOS LOS ACTOS, CONTRATOS E INVERSIONES



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CAMARA DE COMERCIO DE BOGOTA

SEDE CEDRITOS

25 DE NOVIEMBRE DE 2009

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EN BIENES DE CAPITAL O MEJORAS DE LOS MISMOS, QUE IMPLIQUEN UNA EROGACION QUE EXCEDA EL EQUIVALENTE EN PESOS COLOMBIANOS DE SEIS MIL (6000) SALARIOS MINIMOS MENSUALES LEGALES Y VIGENTES AL MOMENTO DE LA OPERACION, ASI COMO AUTORIZARLO PARA CONTRAER PRESTAMOS QUE SUPEREN EL EQUIVALENTE EN PESOS COLOMBIANOS DE SEIS MIL (6000) SALARIOS MINIMOS MENSUALES VIGENTES AL MOMENTO DE LA OPERACION.

CERTIFICA:

QUE POR ESCRITURA PUBLICA NO. 461 DE LA NOTARIA 32 DE BOGOTA D.C., DEL 25 DE FEBRERO DE 2003, INSCRITA EL 11 DE FEBRERO DE 2004 BAJO EL NO. 8793 DEL LIBRO V, COMPARECIO EL DOCTOR JORGE ALBERTO PINZON VARGAS, IDENTIFICADO CON CEDULA DE CIUDADANIA NO. 19.458.199, DE BOGOTA EN SU CALIDAD DE REPRESENTANTE LEGAL DE LA SOCIEDAD QUALA S.A., POR MEDIO DE LA PRESENTE ESCRITURA PUBLICA, CONFIERE PODER GENERAL A LOS DOCTORES SAIDA ANDREA QUINTERO MARTINEZ, IDENTIFICADA CON CEDULA CIUDADANIA NO. 51.856.332 DE BOGOTA Y TARJETA PROFESIONAL NUMERO 51.379 DEL CONSEJO SUPERIOR DE LA JUDICATURA, COMO PRINCIPAL, Y GLORIA ISABEL VARGAS TORRES, IDENTIFICADA CON CEDULA DE CIUDADANIA NO. 43.732.569 DE ENVIGADO Y TARJETA PROFESIONAL NUMERO 79.096 DEL CONSEJO SUPERIOR DE LA JUDICATURA, COMO SUSTITUTA, PARA QUE ACTUEN EN NOMBRE DE LA SOCIEDAD Y LA REPRESENTEN EN TODOS LOS ACTOS PROPIOS DEL DERECHO DE TRABAJO (ASUNTOS LABORALES), EN QUE LA EMPRESA DEBA INICIAR ACCIONES, COMPARECER POR SU PROPIA INICIATIVA A ACTUAR COMO DEMANDADA O CITADA ANTE CUALESQUIERA AUTORIDAD ADMINISTRATIVA, PRIVADA O JURISDICCIONAL DENTRO DEL TERRITORIO NACIONAL (I.S.S., E.P.S., ENTIDADES ADMINISTRADORAS DE RIESGOS PROFESIONALES, SENA., I.C.B.F., FONDOS DE PENSIONES, CAJAS DE COMPENSACION, ENTIDADES U ORGANISMO PRIVADOS, ADMINISTRATIVOS, DESCENTRALIZADOS, AUTONOMOS, MINISTERIOS, TRIBUNALES, NOTARIOS, CONSEJO DE ESTADO, CORTE SUPREMA DE JUSTICIA, ETC.), CON EL FIN DE CUMPLIR CUALQUIERA DE LAS SIGUIENTES ACTUACIONES; PRESENTACION, NOTIFICACION Y CONTESTACION, DE TODA CLASE DE RECLAMACIONES, RECURSOS Y DEMANDAS; INICIACION DE INVESTIGACIONES O COMPARECENCIA EN ELLAS COMO DEMANDANTE O DEMANDADO, ABSOLUCION DE INTERROGATORIOS DE PARTE CON LA FACULTAD DE CONFESAR, CONFERIR, TODA CLASE DE PODERES ESPECIALES DENTRO DE LOS TERMINOS DEL PRESENTE MANDATO A CRITERIO DEL MANDATARIOS, (SIC) GENERAL, INTERPONER RECURSOS Y DESISTIR, CONCILIAR, TRANSIGIR, Y EN GENERAL TODAS AQUELLAS ACTUACIONES PROPIAS E INHERENTES AL MANDATO CONFORME A LAS ATRIBUCIONES LA LEY Y DEL PRESENTE PODER. DE LA MISMA MANERA, PARA REPRESENTAR A LA SOCIEDAD EN TODO LO RELACIONADO CON LOS TRABAJADORES DIRECTA E INDIRECTAMENTE, CON SUS ORGANIZACIONES SINDICALES Y LAS NEGOCIACIONES COLECTIVAS DE TRABAJO. LA RELACION QUE SE HACE ES

POR VIA ENUMERATIVA SOLAMENTE.

CERTIFICA : _

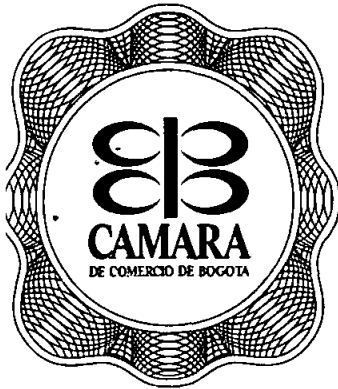
QUE POR ESCRITURA PUBLICA NO. 1775 DE LA NOTARIA 32 DE BOGOTA D.C., DEL 19 DE JULIO DE 2004, INSCRITA EL 18 DE AGOSTO DE 2004 BAJO EL NO. 9149 DEL LIBRO V, MODIFICADA POR ESCRITURA PUBLICA 2372 DEL 21 DE SEPTIEMBRE DE 2006 DE LA MISMA NOTARIA, INSCRITA EL 02 DE OCTUBRE DE 2006 BAJO EL NUMERO 11160 DEL LIBRO V, COMPARECIO EL DOCTOR JORGE ALBERTO PINZON VARGAS, IDENTIFICADO CON CEDULA DE CIUDADANIA NO. 19. 458. 199, DE BOGOTA EN SU CALIDAD DE REPRESENTANTE LEGAL DE LA SOCIEDAD QUALA S. A ., POR MEDIO DE LA PRESENTE ESCRITURA PUBLICA, MANIFESTO : PRIMERO : QUE OTORGA PODER GENERAL A FAVOR DE LAS SIGUIENTES PERSONAS : ELIANA PATRICIA DIAZ SANCHEZ, IDENTIFICADA CON LA CEDULA DE CIUDADANIA NUMERO 52. 117. 359 EXPEDIDA EN BOGOTA Y AL SEÑOR LUIS JAVIER JARAMILLO MONTOYA, IDENTIFICADO CON LA CEDULA DE CIUDADANIA NUMERO 10. 026. 249 EXPEDIDA EN PEREIRA, QUIEN OCUPARA EL CARGO DE ADMINISTRADORA DEL DISTRITO DE BARRANQUILLA, PARA QUE EN NOMBRE Y REPRESENTACION DE LA SOCIEDAD REALICEN LOS SIGUIENTES ACTOS ; A. ACEPTAR A NOMBRE DE QUALA S .A ., LA CONSTITUCION DE HIPOTECAS Y PRENDAS SIN TENENCIA A FAVOR DE LA MISMA, QUE OTORGUEN LOS CLIENTES DE LA EMPRESA PARA GARANTIZAR EL PAGO DE LAS OBLIGACIONES QUE CONTRAIGAN CON ELLA. SEGUNDO : EL PRESENTE PODER PERDERA SU VIGENCIA PARA CADA APODERADO CONSIDERADO INDIVIDUALMENTE EN EL MOMENTO EN QUE DEJE DE PRESTAR SUS SERVICIOS A LA SOCIEDAD QUALA S.A., O S (SIC) LA SOCIEDAD TOMA LA DECISION DE TRASLADAR EL EMPLEADO PARA DESEMPEÑAR CARGO DIFERENTES AL DE ADMINISTRADOR DE DISTRITO.

CERTIFICA : _

QUE POR ESCRITURA PUBLICA NO. 2218 DE LA NOTARIA 32 DE BOGOTA D.C., DEL 12 DE SEPTIEMBRE DE 2005, INSCRITA EL 11 DE OCTUBRE DE 2005 BAJO EL NO. 10075 DEL LIBRO V, COMPARECIO JORGE ALBERTO PINZON VARGAS, IDENTIFICADO CON LA CEDULA DE CIUDADANIA NO. 19.458.199 DE BOGOTA, OBRANDO COMO REPRESENTANTE LEGAL DE LA SOCIEDAD DE LA REFERENCIA POR MEDIO DE LA PRESENTE ESCRITURA PUBLICA OTORGA PODER GENERAL A FAVOR DEL SEÑOR ANDRES FERNANDO CORTES ROMERO, IDENTIFICADO CON LA CEDULA DE CIUDADANIA NUMERO 80.426.499 DE BOGOTA, QUIEN SE DESEMPEÑA COMO ADMINISTRADOR DEL DISTRITO DE BOGOTA, PARA QUE EN NOMBRE Y REPRESENTACION DE LA SOCIEDAD REALICE LOS SIGUIENTES ACTOS: A) ACEPTAR A NOMBRE DE QUALA S.A., LA CONSTITUCION DE HIPOTECAS Y PRENDAS SIN TENENCIA A FAVOR DE LA MISMA, QUE OTORGUEN LOS CLIENTES DE LA EMPRESA, PARA GARANTIZAR EL PAGO DE LAS OBLIGACIONES QUE CONTRAIGAN CON ELLA. SEGUNDO: EL PRESENTE PODER PERDERA SU VIGENCIA PARA EL APODERADO, EN EL MOMENTO EN QUE DEJE DE PRESTAR SUS SERVICIOS A LA SOCIEDAD QUALA S.A., O LA SOCIEDAD TOMA LA DECISION DE TRASLADAR AL EMPLEADO PARA DESEMPEÑAR CARGO DIFERENTE AL DE ADMINISTRADOR DE DISTRITO.

CERTIFICA : _

QUE POR ESCRITURA PUBLICA NO. 2372 DE LA NOTARIA 32 DE BOGOTA D.C., DE 21 DE SEPTIEMBRE DE 2006, INSCRITA EL 02 DE OCTUBRE DE 2006, BAJO EL NO. 11161 DEL LIBRO V, COMPARECIO JORGE ALBERTO PINZON VARGAS IDENTIFICADO CON CEDULA DE CIUDADANIA NO. 19.458.199, DE BOGOTA, EN SU CALIDAD DE REPRESENTANTE LEGAL DE LA SOCIEDAD DE LA REFERENCIA, POR MEDIO DE LA PRESENTE ESCRITURA PUBLICA, CONFIERE PODER GENERAL A MARIA XIMENA BELTRAN GAITAN IDENTIFICADA CON CEDULA DE CIUDADANIA NO. 63. 483. 866 DE



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CAMARA DE COMERCIO DE BOGOTA

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BUCARAMANGA, QUIEN SE DESEMPEÑA COMO ADMINISTRADORA DEL DISTRITO BUCARAMANGA, PARA QUE EN NOMBRE Y REPRESENTACION DE LA SOCIEDAD REALICE LOS SIGUIENTES ACTOS: A) ACEPTAR A NOMBRE DE QUALA S.A., LA CONSTITUCION DE HIPOTECAS Y PRENDAS SIN TENENCIA A FAVOR DE LA MISMA, QUE OTORGUEN LOS CLIENTES DE LA EMPRESA, PARA GARANTIZAR EL PAGO DE LAS OBLIGACIONES QUE CONTRAIGAN CON ELLA. EL PRESENTE PODER PERDERA SU VIGENCIA PARA CADA APODERADO CONSIDERADO INDIVIDUALMENTE, EN EL MOMENTO EN QUE DEJE DE PRESTAR SUS SERVICIOS COMO EMPLEADO A LA SOCIEDAD QUALA S.A., O SI LA SOCIEDAD TOMA LA DECISION DE TRASLADAR AL EMPLEADO PARA DESEMPEÑAR CARGOS DIFERENTES AL DE ADMINISTRADOR DE DISTRITO.

CERTIFICA: _

QUE POR ESCRITURA PUBLICA NO. 2372 DE LA NOTARIA 32 DE BOGOTA D.C., DE 21 DE SEPTIEMBRE DE 2006, INSCRITA EL 02 DE OCTUBRE DE 2006, BAJO EL NO. 11162 DEL LIBRO V, COMPARECIO JORGE ALBERTO PINZON VARGAS, IDENTIFICADO CON CEDULA DE CIUDADANIA NO. 19.458.199, DE BOGOTA, EN SU CALIDAD DE REPRESENTANTE LEGAL DE LA SOCIEDAD DE LA REFERENCIA, POR MEDIO DE LA PRESENTE ESCRITURA PUBLICA, CONFIERE PODER GENERAL A OMAR DARIO QUIJANO REYES, IDENTIFICADO CON CEDULA DE CIUDADANIA NO. 94.507.853 DE CALI, QUIEN OCUPA EL CARGO DE ADMINISTRADOR DEL DISTRITO CALI, EN REEMPLAZO DE LA SEÑORITA MARIA XIMENA BERNAL GAITAN. PARA QUE EN NOMBRE Y REPRESENTACION DE LA SOCIEDAD REALICE LOS SIGUIENTES ACTOS: A) ACEPTAR A NOMBRE DE QUALA S.A., LA CONSTITUCION DE HIPOTECAS Y PRENDAS SIN TENENCIA A FAVOR DE LA MISMA, QUE OTORGUEN LOS CLIENTES DE LA EMPRESA, PARA GARANTIZAR EL PAGO DE LAS OBLIGACIONES QUE CONTRAIGAN CON ELLA. SEGUNDO: EL PRESENTE PODER PERDERA SU VIGENCIA PARA CADA APODERADO CONSIDERADO INDIVIDUALMENTE, EN EL MOMENTO EN QUE DEJE DE PRESTAR SUS SERVICIOS COMO EMPLEADO A LA SOCIEDAD QUALA S.A., O SI LA SOCIEDAD TOMA LA DECISION DE TRASLADAR AL EMPLEADO PARA DESEMPEÑAR CARGOS DIFERENTES AL DE ADMINISTRADOR DE DISTRITO. TERCERO: REVOCAR PARCIALMENTE EL PODER OTORGADO A LA SEÑORITA MARIA XIMENA BERNAL GAITAN IDENTIFICADA CON LA CEDULA DE CIUDADANIA NO. 63.483.866 EXPEDIDA EN BUCARAMANGA, MEDIANTE ESCRITURA PUBLICA NUMERO MIL SETECIENTOS SETENTA Y CINCO (1.775) DEL VEINTIDOS (22) DE JULIO DE DOS MIL CUATRO (2.004), OTORGADA EN LA NOTARIA TREINTA Y DOS (32) DE BOGOTA, PARA ACTUAR COMO ADMINISTRADORA DEL DISTRITO CALI.

CERTIFICA:

** REVISOR FISCAL **

QUE POR ACTA NO. 0000034 DE ASAMBLEA DE ACCIONISTAS DEL 21 DE FEBRERO DE 2003, INSCRITA EL 27 DE MARZO DE 2003 BAJO EL NUMERO 00872625 DEL LIBRO IX, FUE (RON) NOMBRADO (S):

NOMBRE

IDENTIFICACION

REVISOR FISCAL

CABADELPA COLOMBIA S.A. N.I.T. 000008300507951
QUE POR DOCUMENTO PRIVADO DEL 26 DE MARZO DE 2003, INSCRITA EL 27 DE
MARZO DE 2003 BAJO EL NUMERO 00872627 DEL LIBRO IX, FUE (RON) NOMBRADO
(S):

NOMBRE	IDENTIFICACION
REVISOR FISCAL PRINCIPAL	
DELGADO ROMERO HECTOR GUSTAVO	C.C. 000000019396732
REVISOR FISCAL SUPLENTE	

PARDO DE DELGADO REINA	C.C. 000000051671496
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QUE POR DOCUMENTO PRIVADO NO. DE REVISOR FISCAL DEL 29 DE ABRIL DE
2009, INSCRITA EL 5 DE MAYO DE 2009 BAJO EL NUMERO 01294326 DEL LIBRO
IX, FUE (RON) NOMBRADO (S):

NOMBRE	IDENTIFICACION
REVISOR FISCAL SEGUNDO SUPLENTE	
CASTRO DIAZ CARLOS JAVIER	C.C. 000000011200284

CERTIFICA:

QUE POR DOCUMENTO PRIVADO DE DEL 30 DE SEPTIEMBRE DE 2003, INSCRITA EL
4 DE NOVIEMBRE DE 2003 BAJO EL NUMERO 00904905 DEL LIBRO IX, COMUNICO
LA SOCIEDAD MATRIZ:

- QUALA INC.

DOMICILIO: (FUERA DEL PAIS)

QUE SE HA CONFIGURADO UNA SITUACION DE CONTROL CON LA SOCIEDAD DE LA
REFERENCIA.

CERTIFICA:

QUE LA SOCIEDAD TIENE MATRICULADOS LOS SIGUIENTES ESTABLECIMIENTOS:

NOMBRE : QUALA

MATRICULA NO : 00130710 DE 13 DE FEBRERO DE 1980

RENOVACION DE LA MATRICULA : EL 13 DE MARZO DE 2009

ULTIMO AÑO RENOVADO : 2009

CERTIFICA:

DE CONFORMIDAD CON LO ESTABLECIDO POR LA LEY 962 DE 2005, LOS ACTOS DE
REGISTRO AQUI CERTIFICADOS QUEDAN EN FIRME CINCO (5) DIAS HABILES
DESPUES DE LA FECHA DE INSCRIPCION, SIEMPRE QUE NO SEAN OBJETO DE
RECURSOS EN LA VIA GUBERNATIVA.

* * *	EL PRESENTE CERTIFICADO NO CONSTITUYE PERMISO DE	* * *
* * *	FUNCIONAMIENTO EN NINGUN CASO	* * *

EL SECRETARIO DE LA CAMARA DE COMERCIO,

VALOR : \$ 3,500

DE CONFORMIDAD CON EL DECRETO 2150 DE 1995 Y LA AUTORIZACION IMPARTIDA
POR LA SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO, MEDIANTE EL OFICIO
DEL 18 DE NOVIEMBRE DE 1996, LA FIRMA MECANICA QUE APARECE A
CONTINUACION TIENE PLENA VALIDEZ PARA TODOS LOS EFECTOS LEGALES



SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 800176089-2

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IBO OFICIAL DE CAJA : 09 - 88,941
4A : NOVIEMBRE 26 DE 2009

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

No. 08-019258.-00004-0000

Fecha: 2009-11-26 15:00:56 Dep. 2020 DIR.NUEVASCR
Tra. 2 PATENTES Eje: 1 REGDEPOSITO
Act. 400 OPOSIOBSERVTER Folios: 27

***** CONSIGNACION *****

OSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PGO	Vr. PAGO
TINEZ Y TUBOS S A S	CONSIGNACION	BANCO DE BOGOTA	062754387	173396241	26/11/2009	1,722,000.00

***** CONCEPTO *****

1. RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1 50005-01-04 PRESENTACION DE OBSERVACIONES	12 MARCAS Y LEAS COMERCIALES	287,000.00
	TOTAL :	\$ 287,000.00

: DOSCIENTOS OCHENTA Y SIETE MIL PESOS

PENSABLE

IBO DE CAJA APLICADO AL EXPEDIENTE No.

114

2020
Bogotá, D.C.,

Doctora:
Alicia Lloreda Ricaurte
Apoderada

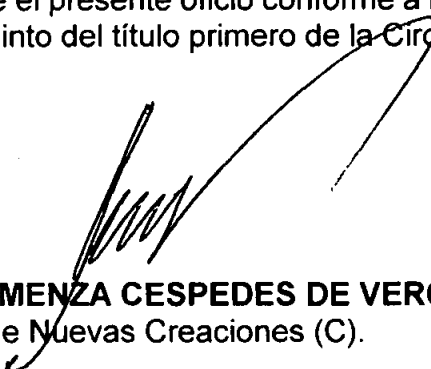
Oficio N°:
2534

ASUNTO:	Radicación N°	08-19258
	Trámite	002
	Evento	001
	Actuación	440
	Folios	028

Con fundamento en lo previsto por el artículo 43 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica que la oposición presentada por la doctora Andrea Tobos Mateus, en su calidad de apoderada de Quala S.A., reúne los requisitos formales exigidos por la ley al momento de su presentación.

En cumplimiento de lo dispuesto en la citada norma, se le concede el término de sesenta (60) días hábiles siguientes a la fecha de notificación del presente oficio, para que haga valer sus argumentaciones y presente pruebas.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Única N° 10 de 2001.


ALIX CARMENZA CESPEDES DE VERGEL
Directora de Nuevas Creaciones (C).

25 FEB. 2010

El anterior oficio fue notificado por fijación en lista de fecha,_____.

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