41 45

SUPERINDUSTRIA Y COMERCIO
Radicación : 00236416 00000022 Folios: 34
Fecha (AMJ): 2000-04-05 16:47:18
Trámite : 282 PATENTES D 1 REGISTRO/ 329 COMPLEMEN
Dependencia: 2820 DIVISION DE NUEVAS CREACIONES

Señor

SUPERINTENDENTE DE INDUSTRIA Y COMERC

DIVISION DE NUEVAS CREACIONES

E. S. D.

Re: P1.-**AMERICAN CYANAMID COMPANY**.-Solicitud de patente de invención para **"COMPOSICIONES EXTRUIDAS LIVIANAS QUE CONTIENEN UN PORTADOR CERAMICO LIVIANO EXTRUIBLE, METODOS DE USO DE LAS MISMAS Y PROCESOS PARA SU PRESPARACIÓN"**.-Clase A.01.-Expediente número 00-008.416.-

1. Me refiero a mi solicitud de patente arriba nombrada de fecha 9 de Febrero de 2000.

2. Anexos me permito presentar a usted :

(a) Copia autentica debidamente certificada **respecto de la cual reclamo prioridad unionista,** a saber la solicitud estadinense número 09/248.859 del 11 de Febrero de 1999, junto con su traducción oficial, **correspondiente a las legalizaciones y reivindicaciones de dicho documento;** y

(b) Copia debidamente autenticada por el Notario Sexto del Circulo de Bogotá, de los documentos que acreditan la calidad de Traductor Oficial del señor Eduardo Calado Noguera quien elaboró la traducción de la solicitud estadinense número 09/248.859, respecto de la cual se reivindica prioridad en el presente caso.

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

Señor Superintendente,

JOSE ANTONIO LLOREDA

T.P. 10.784

Código 231

42 AA

REPUBLICA DE COLOMBIA
MINISTERIO DE RELACIONES EXTERIORES

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

COMO NOTARIO SEXTO ENCARGADO
DE SANTAFE DE BOGOTA
HAGO CONSTAR
QUE LA FOTOCOPIA COINCIDE CON LA FOTOCOPIA
AUTENTICA QUE HE TENIDO A LA VISTA
SANTAFE DE BOGOTA 25 AGO. 1999
PABLO MENDEZ BARAJAS

CERTIFICA

Que revisados los registros que se llevan el al oficina de Legalizaciones aparece la firma del señor **EDUARDO CALADO NOGUERA,** como traductor e intérprete oficial para los idiomas INGLES- ESPAÑOL, ESPAÑOL- INGLES, según resolución 541 del 27 de febrero de 1976.

La anterior certificación se expide a solicitud del interesado quien se identificó con cédula de ciudadanía 17.177.588 expedida en Bogotá.

Dada en Santa Fe de Bogotá, D.C., a los seis (6) de noviembre de 1997.

BLANCA ACOSTA DE GARCIA
Jefe Area de Legalizaciones (e)

COMO NOTARIO SEXTO ENCARGADO
DE SANTAFE DE BOGOTA
HAGO CONSTAR
QUE LA FOTOCOPIA COINCIDE CON LA FOTOCOPIA
AUTENTICA QUE HE TENIDO A LA VISTA
SANTAFE DE BOGOTA

COMO NOTARIO SEXTO ENCARGADO
DE SANTAFE DE BOGOTA 22 MAR. 2000
HAGO CONSTAR
QUE LA FOTOCOPIA COINCIDE CON LA FOTOCOPIA
AUTENTICA QUE HE TENIDO A LA VISTA
SANTAFE DE BOGOTA 26 NOV. 199

43 A5

República de Colombia

Ministerio de Justicia y del Derecho

EL SECRETARIO GENERAL (E) DEL MINISTERIO DE JUSTICIA Y DEL DERECHO

CERTIFICA:

NOTARIO SEXTO ENCARGADO DE SANTAFE DE BOGOTA
HAGO CONSTAR
QUE LA FOTOCOPIA COINCIDE CON LA FOTOCOPIA AUTENTICA QUE HE TENIDO A LA VISTA.
SANTAFE DE BOGOTA 25 AGO. 1999
PABLO MENDEZ BARAJAS

Que por Resolución 541 del 27 de febrero de 1976, le fue expedida licencia para ejercer funciones de Traductor e Intérprete Oficial en los idiomas INGLES y **ESPAÑOL** al señor **EDUARDO CALADO NOGUERA,** identificado con la cédula de ciudadanía No. 17.177.588 expedida en Bogotá.

Que dicha Resolución se encuentra vigente en la fecha.

Se expide la presente certificación a solicitud del interesado.

Dada en Santa Fe de Bogotá, D.C., a 14 OCT. 1997

ALVARO NAMEN VARGAS

ICM/mmc

NOTARIO SEXTO ENCARGADO DE SANTAFE DE BOGOTA
HAGO CONSTAR
QUE LA FOTOCOPIA COINCIDE CON LA FOTOCOPIA AUTENTICA QUE HE TENIDO A LA VISTA.
SANTAFE DE BOGOTA 26 NOV. 1997
NOTARIO SEXTO ENCARGADO DE SANTAFE DE BOGOTA

Hago constar que esta copia coincide con documento presentado para autenticar
04 NOV. 1997
Santafé de Bogotá D.C. - Colombia
SERGIO PRIETO LEON
SECRETARIO GENERAL

HAGO CONSTAR
QUE LA FOTOCOPIA COINCIDE CON LA FOTOCOPIA AUTENTICA QUE HE TENIDO A LA VISTA.
SANTAFE DE BOGOTA 22 MAR. 2000
PABLO MENDEZ BARAJAS

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Febrero 7, 2000 (American Home Products Corp)
Traducción Oficial No. 0208 Caso-33-556-00
REF: AMERICAN HOME PRODUCTS
Patente No. 09/248,859

DEPARTAMENTO DE COMERCIO DE LOS ESTADOS UNIDOS
OFICINA DE MARCAS Y PATENTES

Enero 27, 2000

Por medio del presente documento se certifica que adjunta se encuentra una fiel copia de los registros de la Oficina de Marcas y Patentes de los Estados Unidos, correspondientes a los documentos para la solicitud tal como se presentaron, con el fin de asignarle una fecha de registro bajo la norma del código 35 USC 111.

Número de Solicitud:09/ 248,859
Fecha de Registro: Febrero 11, 1999

Autorizado por:
COMISIONADO DE MARCAS Y PATENTES
Firma:N. WILLIAMS
Funcionario Encargado de Certificaciones
Hay sello de la Oficina de Marcas y Patentes realzado de color dorado.

Eduardo Calado
Eduardo Calado Nogueira
TRADUCTOR OFICIAL
INGLES-ESPAÑOL

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

Caso No: 33556

NUEVA SOLICITUD PARA TRAMITE

Por emdio de la presente se tramita para registro de solicitud de patente de los siguientes inventor(es).

Norikazu Takayanagi, Osamu Yamada, Munehiro Susuki; para el invento de: COMPOSICION DE LUZ POR EXTRUSION QUE CONTIENEN UN PORTADOR CERAMICO DE LUZ POR EXTRUSION, METODOS PARA SU USO Y PROCESOS PARA SU PREPARACION.

1. Se adjuntan Documentos requeridos para el registro bajo el 35 CFR 1.53(b):

19 páginas para especificación
Listado de secuencia (___ páginas)
8 páginas de Reivindicaciones
1 Página (s) de Resumen
Páginas de Gráficas
[ ] Formal
[ ] Informal

2. Se adjuntan documentos adicionales

[x] Información sobre documento de divulgación
[x] Formulario PTO-1449

Eduardo Salado
ESTRICTO TOR
INGLES ESPAÑOL-INGLES
Res 541 Febrero de 19.6

[x] Citaciones

[ ] Declaración de Depósito biológico

[ ] Formulario de listado de secuencia legible por computador

[ ] Declaración bajo 37 CFR 1.821(f)

[ ] Otros:

3. Declaración

[ ] Se adjunta documento ejecutado por todos los inventor (es)

[x] No se adjunta o los documentos no son ejecutados por todos los inventor(es)

CERTIFICADO DE ENVIO POSTAL BAJO CODIGO 37 CFR 1.10

Yo, por medio del presente documento certifico que este ha sido enviado por Servicio Postal del Correo de los Estados Unidos de America, en la fecha anteriormente mencionada en un sobre rotulado "Correo Postal al Destinatario" con número de envio: EL251676630 US, y al Comisionado Asistente para Patentes, Box Patent Application, Washington, DC., 20231.
Firma: Enviado por:Barbara L. Renda
Fecha: Febrero 11, 1999

4. Traspaso

Traspaso del invento a:

AMERICAN CYANAMID COMPANY
Five Giralda Farms

Madison, New Jersey 07940-0874

[ ] Fué realizado antes de la solicitud anterior en PTO en _____, Rollo, Marco

[ ] se adjunta bajo registro separado de la Caratula Principal.

[x] a continuación

5. Cálculos de Honorarios de Registro

REGISTROS DE REIVINDICACIONES

(1) PARA	(2) NUMEROS REGISTRADOS	(3) NUMEROS EXTRA X PORCENTAJE	(4) HONORARIOS BASICOS $ 760.00
TOTAL REIVIND	33	13 X $18.00	$234.00
REIVIND INDEPENDIENTES	3	0 X $ 78.00	
HONORARIOS DEPENDENCIAS MULTIPLES	0	0 X $ 260.00	

TOTAL HONRARIOS DE REGISTRO: $994.00

6. Forma de Pago de Honorarios

Cobro a Cuenta Corriente No. 01-1300 por la suma de $994.00

Se adjunta un duplicado del trámite original.

7. Instrucciones de sobre pago

Eduardo Collado

Acreditar cualquier sobre pago a la cuenta Corriente No. 01-1300.

8. Autorización general

Durante la vigencia de esta solicitud favor avisarnos acerca de si se necesita extensión adicional para la entrega. Por medio de la presente el comisionado se encuentra autorizado para cobrar todos los honorarios debido a la extensión del tiempo de entrega durante la vigencia de esta solicitud a la Cuenta Corriente No. 01-1300.

9. Autorización para Cobrar Honrarios Adicionales

[x] El comisionado se encuentra autorizado para cobrar cualquier honorario adicional que se presente en este documento y durante la vigencia de esta solicitud a la Cuenta Corriente No. 01-1300:

[x] 37 CFR 1.16(a), (f) o (g) honorarios de registro

[x] 37 CFR 1.16(b), (c) y (d) presentación de reivindicaciones adicionales

[x] 37 CFR 1.16(e) recargo para registro de honorarios básicos y/o declaración en una fecha posterior de la fecha de registro de esta solicitud.

[x] 37 CFR 1.17 honorarios para procesamiento de solicitud.

10. Relación (35USC 119(e))

[ ] Rectificar la Especificación introduciendo la siguiente frase:

Eduardo Calado

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--Esta solicitud reivindicación de prioridad para una solicitud(es) provisional pendiente número Serial 60/_____registrado en

Firma BARBARA L. RENDA

No de Registro: 27,626

American Home Products Corporation

Patent Law Department

One Campus Drive

Parsippany, NJ 07054

Tels. No. (973) 683-2156

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REIVINDICACIONES :

1. Una composición de luz por extrusión que contienen por lo menos un compuesto de agrícola; una luz de extrusión, portador cerámica y por lo menos un agente activo de superficie.

2. Una composición de acuerdo a la reivindicación 1 el cual a continuación consiste de un portador y una sustancia aglutinante mineral.

3. La composición de acuerdo a la Reivindicación 2, la cual consta de un peso básico aproximado de 0.5% hasta alrededor de 75% de uno o más componente(s) agrícola; aproximadamente 15% hasta 90 % del portador ceramico de luz por extrusión; alrededor de 2% hasta 20% de uno o más agentes activos de superficie; alrededor de 0.1% hasta 10% del aglutinante.

4. La composición de acuerdo a la reivindicación 1 en la cual el portador cerámico de luz por extrusión tiene una densidad aproximada de 0.5 g/cm3 hasta 0.8 g/cm3.

5. La composición de acuerdo a la reivindicación 1 en la cual el portador cerámico de luz por extrusión se prepara de una composición la

Eduardo Calvo Noguera
Eduardo Calvo Noguera
"TRADUCTOR OFICIAL"
[illegible]
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cual consiste en el peso base aproximado de 50% hasta 60% de óxido de silicona (IV, alrededor de 0.1% hasta 6% de óxido de calcio, alrededor de 0.1% hasta 3% de óxido de hierro (III), y alrededor de 0.1% hasta 2% de óxido de titanio (IV).

6. La composición de acuerdo a la reivindicación 1 en la cual el portador cerámico de luz por extrusión tiene un porcentaje de tamaño de partícula aproximado de 100 μm hasta 250 μm.

7. La composición de acuerdo a la Reivindicación 1 en la cual el portador cerámico de luz por extrusión tiene aproximadamente una fuerza de presión superior a 150 kg/cm2.

8. La composición de acuerdo a la reivindicación en la cual el compuesto de agrícola es seleccionado de un grupo que consiste de herbicida, insecticida, acaricida, nematicida, fungicida, molluscicida, un regulador de crecimiento de planta, un conservante, un algicida y un antimoho y mezclas del mismo.

10. La composición de acuerdo a la reivindicación 8 en la cual el herbicida es seleccionado de un grupo que consiste de 2,4-D, 2,4-D-2-etilohexilo, 2,4-Disobutilo, 2,4-Dbutilo, 2,4-D-calcio, 2,4-D-

Eduardo Calado Nogueira

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dimetiloamonio, 2,4-D-diolamino, 2,4-D-isooctilo, 2,4-D-isopropilo, 2,4-D-potasio, 2,4-D-sodio, 2, 4-D-trolamina, azimosulfurone, benzosulfuronemetilo, betanzona, benzofenape, bifenox, bromobutido, butaclor, cafenstrol, clorometiloxinilo, cloronitrofen, clortiamido, cinmetilin, cinosufurone, clomeprop, ciclosulfamuron,sodio de sal de ciclosulfamuron, cihalofopbutilo, dimepiperato, dimetametrina, ditiopiro, dimron, esprocarb, etoxisulfurone, etobenzanida, fentrazamida, imazosulfurone, MCPA, MCPA-butilo, MCPA-calcio, MCPA-dimetiloamonio, MCPA isooctilo, MCPA-potasio, MCPA sodio, MCPB, MCPB-etilo, MCPB-sodio, MCPCA, mefenacet, molinato, naproanilida, oxadiazon, oxaziclomefona, pendimetalina, pentoxazone, piperopos, pretilaclor, prometrina, propanil, pirazolate, pirazosulfurone-etilo, pirazoxifeno, piributicarbo, simetrino, swep, teniloclor y tiobecarbo y mezclas del mismo;

El insecticida seleccionado del grupo consiste de acefato, alfa-cipermetrina, benfuracarbo, bensultap, BPMC, buzofezina, carbarilo, carbofurano, carbosulfano, cartap, clorfenapir, clorofenvinfos, cloropirifosmetilo, cloropirifos, cianofenos, ciclopротrino, diazinon, dimetoato, dioxibenzofos, disulfoton, EPN, etofenproxo, fenitrotion, fention, furatiocarbo, isoprocarbo, metilod de isotiocianato, isoxation, malation, ,etomilo, metolcarb, monocrotofos, nitenpiram, fentoato, etilo- pirimifos, metilo-

Eduardo Calado Noguera

pirimifos, propafos, propoxur, piraclofos, piridapention, quinalfos, propoxur, piraclofos, piridapention, quinalfos, tetraclorovinfos, tiociclamina,tiodicarbos, triclorofon. vamidotion, XMC, xixicarbo, y 1- [1-(p-clorofenilo) - fluoro-4-(4-flúor -3- fenoxifenilo)-2-butenilo]ciclopropano(R,S) - (Z) y mezclas del mismo; y fungicidas seleccionados de un grupo que consiste de benomil, captan, diclomezine, edifenfos, fenoxanilo, ferimzone, flutolanil, talide, iprobenfos, iprodione, isoprotiolane, kasugamicina,hidrato de hidrocloruro de kasugamicina, mepronil, metalaxil, metominostrobino, ácido oxolinico, pencicuron, probenazola, piroquinola, tecloftalam tiofenato-metilo, TPN, triciclazol, triflumizol, y validamicina y mezclas del mismo.

10. La composición de acuerdo a la Reivindicación 1 en la cual la superficie del agente activo es seleccionado de un grupo que consiste de ciclosulfamuron, cafenstrole y dimron y mezclas del mismo.

11. La composición de acuerdo a la reivindicación 1 en la cual la superficie del agente activo es seleccionada de un grupo que consiste de alquilo sulfonato benceno, unm alquilo naftaleno sulfonato, un lignosulfonato, un condensado de naftaleno sulfonato formaldehído, un alquilo naftaleno sulfonato formaldehído,un éter alquilo polioxietileno, un éter alquilo sulfato polioxietileno, un éter de fosfato alquilo sulfato

Eduardo Calado Noguera
Edo. [illegible] Calado Noguera
"[illegible]"

polioxietileno, éter alquilo arilo polioxietileno, un éter sulfato alquilo arilo polioxietileno, un éter fosfato alquilo arilo polioxietileno, un policarboxilato, un sodio tripolifosfato, un hexameta fosfato, un fenol sulfonado, un aluilo sulfatado, un dialquilo sulfosucinato, un éter de alquilo sulfatado y un glicol de acetileno y mezclas del mismo.

12. La composición de acuerdo a la reivindicación 11 en la cual el agente de superfice activa es seleccionado de un grupo que consiste de alquilo naftaleno sulfonato, un policarboxilato, un naftaleno sulfonato formaldehído condensado y un dialquilo sulfosuccinato y mezclas del mismo.

13. La composición de acuerdo a la reivindicación 12 en la cual el agente de superficie activa consiste de una mezcla de sodio; un sodio alquilo naftaleno sulfonato, un policarboxilato, un sodio haftaleno sulfonato formaldehído condensado y un sodio de alquilo sulfonato alquilato.

14. La compsoición de acuerdo a la reivindicación 2 en el cual el portador mineral es seleccionado de un grupo que consiste de bentonita de calcio, un sodio de bentonita, montmorillonita, arcilla de caolina, arcilla de pirofilita, arcilla de sericita, tierra de diatomaceus y talco y mezclas del mismo.

15. La composición de acuerdo a la reivindicación 14 en la cual el portador mineral es bentonita de sodio.

16. La composición de acuerdo a la reivindicación 2 en la cual el aglutinante es seleccionado de un grupo que consiste de celulosa de sodio carboximetilo, celulosa de hidroxi metilo, celulosa de metilo, celulosa de etilo, dextrina, almidón, poli(vinilo alcohol), sodio alginato, sodio poliacrilato, goma de xanthan, goma de welan y goma arábica y mezcla de los mismos.

17. La composición de acuerdo a la reivindicación 16 en la cual el aglutinante es sodio de celulosa carboximetilo.

18. La composición de acuerdo a la reivindicación 2, la cual consiste de un peso básico aproximado de 0.2% ciclosulfamuron, alrededor de 10% hasta 20% de canestrol; alrededor de 25% hasta 35% de dimron; alrededor de 25% hasta 45% de un portador cerámico de luz por extrusión la cual: (1) se prepara de una composición la cual consta de una base de peso aproximado de 50% hasta 60% de óxido de silicona (IV), alrededor de 25 hasta 45% de óxido de aluminio, aproximadamente 0.1% hasta 6% de óxido de calcio, aproximadamente 0.1% hasta 3% de óxido de hierro (III)

Eduardo Calado
TRADUCTOR OFICIAL
ESPAÑOL-INGLES
Febrero de 19 6

y alrededor de 0.1% hasta 2% de óxido de titanio (IV), (2) tiene un promedio en tamaño de partícula aproximado de 100 μm hasta 250 μm, y (3) tiene una fuerza de presión superior aproximadamente de 150 kg/cm2; alrededord e 4% hasta 8% de sodio de alquilo naftaleno sulfonato; aproximadamente 0.5% hasta 2% de una mezcla de policarboxilato y un condensado de sodio naftaleno sulfonato formaldehído; alrededor de 1% hasta 3% de sodio de alquilo sulfonato alquilato; alrededor de 3% hasta 8% de bentonita de sodio y alrededor de 1% hasta 3% de sodio celulosa carboximetilo.

19. Un método para el suministro de por lo menos un compuesto agrícola en el agua de arrozal, la cual consiste en suministrar al agua en la superficie del arrozal una composición de luz por extrusión del compuesto agrícola; un portador cerámico de luz por estrusión; y por lo menos un agente de superficie activo.

20. El método de acuerdo a la reivindicación 19 en el cual la composición de luz por extrusión a continuación consiste de un portador mineral y un aglutinante.

Eduardo Calado Noguera
POR OFICIAL

21. La composición de acuerdo a la reivindicación 19 en el cual el portador cerámico de luz por extrusión tiene una densidad aproximada de 0.5 g/cm3 hasta 0.8 g/cm3.

22. El método de acuerdo a la reivindicación 19 en la cual el portador cerámico de luz por extrusión se prepara de una composición la cual consta de: una base aproximada del peso de 50% hasta 60% de óxido de silicona (IV), alrededor de 25% hasta 45% de óxido de aluminio, alrededor de 0.1% hasta 6% de óxido de calcio, aproximadamente 0.1% hasta 3% de óxido de hierro(III) y alrededor de 0.1% hasta 2% de óxido de titanio (IV).

23. El método de acuerdo a la reivindicación 19 en la cual el portador de cerámica de luz por extrusión tiene un promedio de tamaño de partícula aproximado de 100 μm hasta 250 μm.

24. El método de acuerdo a la reivindicación 19 en el cual el portador cerámico de luz por extrusión tiene una fuerza de presión superior aproximadamente a 150 kg/cm2.

25. El método de acuerdo a la reivindicación 19 en la cual el compuesto agrícola es seleccionado de un grupo que consiste de herbicida, insecticida,

acaricida, un nematicida, un fungicida, un moluscicida, un regulador de crecimiento de plantas, un asegurador, un algicida un antimoho y mezclas del mismo.

26. El método de acuerdo a la reivindicación 19 en la cual el compuesto agrícola es seleccionado de un grupo quen consiste de ciclo sulfamuron, cafenstrol, y dimron y mezclas del mismo.

27. Un método de acuerdo a la reivindicación 20 en la cual el agente de superficie activo consiste de una mezcla de sodio alquilo naftaleno sulfonato, un policarboxilato, un sodio naftaleno sulfonato formaldehído condensado y un sodio alquilo sulfonato alquilato; el portador mineral es un bentonito de sodio y el aglutinante es un sodio de celulosa carboxímetilo.

28. El método de acuerdo a la reivindicación 19 en la cual la composición de luz por extrusión se encuentra envasada en un sistema de liberación de agua soluble contenida, la composición de luz por extrusión se suministra a la superficie del agua.

29. El método de acuerdoa la reivindicación 28 en el cual la liberación sistema de agua soluble se selecciona de un grupo qué consiste de una bolsa

soluble en agua de poli (vinilo -alcohol), una bolsa de papel soluble en agua y una botella soluble en agua.

30. El método de acuerdo a la reivindicación 19 en la cual la composición de agua por extrusión se encuentra envasada en un sistema no contenido y la composición de luz por extrusión no contenida se aplica en la superficie de agua a mano, cuchara, aereosol o por via mecánica.

31. El método de acuerdo a la reivindicación 30 en la cual el sistema no contenido es seleccionado de un grupo que consiste de una bolsa, un tubo o un tanque alimentador.

32. Un proceso para la preparación de una composición de luz por extrusión la cual consiste de por lo menos un compuesto agrícola; un portador cerámico de luz por extrusión; y por lo menos un agente de superficie activa, cuyo proceso consta de los siguientes pasos:

(a) mezclar el compuesto agrícola; el portador cerámico de luz por extrusión y el agente de superficie activa con agua para obtener una mezcla por extrusión:

(b) Extruir una mezcla por extrusión desde el paso (a) hasta obtener una extrusión ; y

(c) secar la mezcla por extrusión para obtener composicieon de luz por extrusión.

33. El proceso de acuerdo a la reivindicacieon 32 en la cual el paso (a) a continuación consta de un portador y aglutinador mineral.

DECLARACION Y PODER

(Original, Diseño, suplementario, Divisorio, Continuación)

Eduardo Collado

Yo en mi calidad de abajo mencionado inventor, por la presente declaro que:

Mi residencia, dirección de Oficina Postal y ciudadanía son mencionados a continuación como también mi nombre. Yo creo ser el único y primer inventor (si solo se encuentra un nombre en la lista) o original, primero y co-inventor (si aparecen más nombres en la lista) del tópico en cuestión, el cual se reivindica pidiendo la solicitud de patente de la invención con el titulo de:

TITULO DE LA INVENCION

COMPOSICION DE LUZ POR EXTRUSION QUE CONTIENE UN PORTADOR CERAMICO DE LUZ POR EXTRUSION, METODOS PARA SU USO Y PROCESOS PARA SU PREPARACION.

ESPECIFICACIONES DE LA INVENCION

La especificación

(a) _X_ se encuentra adjunta a la misma.

(b) fué registrada en _____--como Solicitud con

____No. Serial

__x_ No. de certificado de envio postal EL251676630US, y No Serial aún se desconoce

(c) _____ fué descrita y reivindicada como patente Internacional PCT Solicitud No. _____ registrada bajo el Artículo 19 en _____.(Si existe)

Eduardo Calado

Eduardo Calado Nogueira
"TRADUCTOR OFICIAL"

Yo por medio del presente documento declaro que he revisado y entiendo el contenido de las especificaciones anteriormente mencionadas, incluyendo las reivindicaciones, tal como fueron certificadas anteriormente.

Yo tengo conocimiento sobre mi obligación de proteger la información de material patentable tal como lo define el Código 37 C.F.R. 1.56 (a).

Yo por la presente reivindico beneficios de prioridad bajo el Título 35, del Código de los Estados Unidos, Sección 119 de cualquiera de la solicitud(es) para patente (s) de solicitud de inventor de cualquiera de la(s) Solicitud (es) PCT Internacionales, mencionando por lo menos un pais diferente de los Estados Unidos de America también se como se mencionó anteriormente, como tambien he cualquier solicitud para Patente Internacional PCT o certificado de invención en cualquiera de las solicitudes para Patentes Internacionales, mencionando al menos un pais diferente de los Estados Unidos de America, registrada personalmente por misobre el mismo tema y que tenga una fecha anterior de la (s) solicitud (es) sobre la cual se reivindica prioridad.

(d) X No se ha regisrado solicitud alguna

(e) ____ Dicha solicitud ha sido registrada como a continuación.

Eduardo Valdés Noguera
"TRADUCTOR OFICIAL"
INGLES-ESPAÑOL-INGLES
Rev. 11 - Febrero de 19 6

NOTA: Si el item (c) se encuentra anotado en la solictud Internacional que reclama la reivindicación de prioridad en los US, anote el item (e), describa los detalles a continuación y anote su reivindicación de prioridad.

Si existe alguna solicitud (es) inicial, registrada dentro de los 12 meses (6 meses para el diseño) procesada anteriormente de esta solicitud de US.

REIVINDICAR BENEFICIOS DE SOLICITUDES NORTE AMERICANAS PROVISIONALES ANTERIORES
(35 U.S.C. §119(E))

Yo, por medio del presente documento reclamo beneficios bajo el código 35, de los Estados Unidos § 119(e) de solicitud (es) provisional como a continuación:

NUMERO DE SOLICITUD PROVISIONAL

FECHA DE REGISTRO

REIVINDICACION DE BENEFICIOS PARA SOLICITUD(ES) ANTERIOR (ES)

Reivindicación de beneficios sobre solicitudes anteriores como a continuación: la siguiente solicitud anterior de Patente registrada en

Eduardo Calvo
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INGLES-INGLES
Res. 561 Febrero de 19 6

los Estados Unidos de America, como mencionados a continuación sobre el tópico de cada una de las reivindicaciones en las solicitudes no son reveladas en las solicitudes para patente en los Estados Unidos o las solicitudes Internacionales PCT en la manera requeridas tal como lo menciona el primer párrafo de la norma del Código 35 U.S.C. § 112, yo tengo conocimiento de mi obligación de revelar toda información que se considere parte del material patentable a la Oficina de Marcas y Patentes tal como lo define la norma del Código 37 C.F.R. §1.56 el cual se hizo efectiva entre las fechas de registro de la solicitud anterior y la fecha de registro Internacional PCT de esta solicitud.

PODER

Como Inventor, yo por la presente nombro al (los) siguiente (s) abogados y /o representante (s) para procesar esta solicitud y llevar a cabo toda transacción de negocios en la Oficina de Marcas y Patentes relacionadas con la presente.

WILLIAM H. CALNAN	No. de Registro:29520
CHARLES F. COSTELLO, JR.	No de Registro: 27324
GREGORY M. HILL	No de Registro:31369
JOHN W. HOGAN, JR	No. de Registro: 32703
JOSEPH M. MAZZARESE	No. de Registro:32803
BARBARA L. RENDA	No. de Registro: 27626

Eduardo Colado L.

_____ adjunto como parte de esta declaración y poder se encuentra la autorización de los anteriormente mencionados abogado (s) en la cual aceptan y se comprometen a seguir todas mis instrucciones que provengan de mi(s) representante (s) legales.

ENVIAR LA CORRESPONDENCIA A:

AMERICAN HOME PRODUCTS CORPORATION
Patent Law Department
One Campus Drive
Parsippany, NJ 07054
Tels No. (973) 683 2153

Yo, por la presente afirmo que toda declaración presentada es de mi entero conocimiento, fiel y verdadera y tengo presente que toda falsa declaración es castigada mediante una multa o el encarcelamiento, o ambos, bajo la Sección 1001 del Título 18 del Código de los Estados Unidos y que cualquier declaración puede comprometer la validez de esta solicitud o de cualquier patente expedida inmediatamente después.

FIRMA (S)

Nombre completo del UNICO Y PRIMER INVENTOR:Norikazu Takayanagi

No hay Firma del Inventor

Eduardo Calabrese

Res 511 Febrero de 19 6

Fecha: No hay fecha

Pais de Ciudadanía: Japón

Residencia: 66-1, Nakahashira-cho, Toyohashi, Aichi, Japón

Oficina Postal: 66-1, Nakahashira-cho, Toyohashi, Aichi, Japón.

Nombre completo del SEGUNDO CO- INVENTOR:Masomi Kimpara

No hay Firma del Inventor

Fecha: No hay fecha

Pais de Ciudadanía: Japón

Residencia:5-5-5, Nakojima, Hamamatsu, Jizuoka, Japón

Oficina Postal: 5-5-5, Nakojima, Hamamatsu, Jizuoka, Japón.

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No hay Firma del Inventor

Fecha: No hay fecha

Pais de Ciudadanía: Japón

Residencia:1-15-6, Higashiwaki, Toyohashi, Aichi, Japón

Oficina Postal: 1-15-6, Higashiwaki, Toyohashi, Aichi, Japón.

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R.D. 541 - Febrero

JOSE LLOREDA C. MACHO & CO.

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PA 200026

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

January 27, 2000

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A FILING DATE UNDER 35 USC 111.

APPLICATION NUMBER: ***09/248,859***
FILING DATE: ***February 11, 1999***

By Authority of the
COMMISSIONER OF PATENTS AND TRADEMARKS

N. Williams

N. WILLIAMS
Certifying Officer

68 A 69

Docket No: 33556
Patent

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

New Application for Transmittal

Transmitted herewith for filing is the patent application of the following Inventor(s): Norikazu Takayanagi, Osamu Yamada, Munehiro Suzuki; For: LIGHT, EXTRUDED COMPOSITIONS CONTAINING A LIGHT, EXTRUDABLE, CERAMIC CARRIER, METHODS FOR THEIR USE, AND PROCESSES FOR THEIR PREPARATION .

1. Papers enclosed which are required for a filing date under 35 CFR 1.53(b):
   - 19 Pages of specification
   - ☐ Sequence Listing (__ pages)
   - 8 Pages of claims
   - 1 Page(s) of abstract
   - Sheets of drawing
     - ☐ Formal
     - ☐ Informal

2. Additional papers enclosed
   - ☒ Information Disclosure Statement
   - ☒ Form PTO-1449
   - ☒ Citations
   - ☐ Declaration of Biological Deposit
   - ☐ Computer Readable Form of Sequence Listing
   - ☐ Declaration Under 37 CFR 1.821(f)
   - ☐ Other:

3. Declaration
   - ☐ Enclosed and executed by all inventor(s)
   - ☒ Not enclosed or not executed by all inventor(s)

CERTIFICATION UNDER 37 CFR 1.10

I hereby certify that this paper and the documents referred to as enclosed therein are being deposited with the United States Postal Service on the date written below in an envelope as "Express Mail Post Office to Addressee" Mailing Label Number EL251676630US addressed to the Assistant Commissioner for Patents, Box Patent Application, Washington, D.C. 20231.

February 11, 1999
Date

Barbara L. Renda

4. Assignment
An assignment of the invention to:

AMERICAN CYANAMID COMPANY
Five Giralda Farms
Madison, New Jersey 07940-0874

☐ was made in the prior application and recorded in PTO on , Reel , Frame

☐ is attached under separate Recordation Form Cover Sheet.
☒ will follow.

5. Filing Fee Calculation

CLAIMS AS FILED				
(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA X RATE		(4) BASIC FEE
				$760.00
TOTAL CLAIMS	33	13	X $ 18.00	234.00
INDEPENDENT CLAIMS	3	0	X $ 78.00	
MULTIPLE DEPENDENCY FEE	0	0	X $ 260.00	
		Total Filing Fee:		$994.00

6. Method of Payment of Fees:
Charge Deposit Account No. 01-1300 in the amount of $994.00
A duplicate of this transmittal is attached.

7. Instructions as to Overpayment:
Credit any overpayment to Deposit Account No. 01-1300.

8. General Authorization:
During the pendency of this application treat any reply requiring a petition for extension of time for its timely submission as containing a request therefor for the appropriate length of time. The Commissioner is hereby authorized to charge all required extension of time fees during the entire pendency of this application to Deposit Account No. 01-1300.

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Docket No: 33556
Patent

9. Authorization to Charge Additional Fees

☒ The Commissioner is hereby authorized to charge the following additional fees by this paper and during the entire pendency of this application to Deposit Account No. 01-1300:

☒ 37 CFR 1.16(a), (f), or (g) filing fees

☒ 37 CFR 1.16(b), (c), and (d) presentation of extra claims

☒ 37 CFR 1.16(e) surcharge for filing the basic filing fee and/or declaration on a date later than the filing date of the application.

☒ 37 CFR 1.17 application processing fees

10. Relate back (35 USC 119(e))

☐ Amend the Specification by inserting before the first line the sentence:

--This application claims priority from copending provisional application(s) serial number 60/ filed on .--

Barbara L. Renda

Reg. No. **27,626**

American Home Products Corporation
Patent Law Department
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Parsippany, NJ 07054
Tel. No. (973) 683-**2153**

LIGHT, EXTRUDED COMPOSITIONS CONTAINING A LIGHT, EXTRUDABLE, CERAMIC CARRIER, METHODS FOR THEIR USE, AND PROCESSES FOR THEIR PREPARATION

BACKGROUND OF THE INVENTION

Solid agricultural compositions which may be applied to the surface water of paddy fields are known in the art (see, for example, U.S. 5,833,733 and JP 6-321704).

U.S. 5,833,733 describes agrochemical formulations for water surface application. These formulations require: (1) a solid core material having an apparent specific density of less than 1 and a particle diameter within the range from about 300 μm to about 1,400 μm; and (2) at least one oily substance. However, this patent does not disclose any extruded formulations. It is difficult to prepare extruded formulations containing large particle sizes of low-density carriers because large, low-density particles are not entirely stable to the conditions encountered during extrusion processes. In addition, the use of oily substances is not entirely satisfactory because oily substances may reduce the uniformity of the extruded composition and/or may decrease the flash point of the finished product.

JP 6-321704 describes pesticidal formulations for water surface application. The formulations described in JP 6-321704 require hollow, glass bodies having an average particle diameter of 100 μm or less. However, that application does not disclose any extruded formulations. It is difficult to prepare extruded

formulations containing hollow, glass bodies because hollow, glass bodies are not entirely stable to the conditions encountered during extrusion processes.

It is, therefore, an object of the present invention to provide a light, extruded composition which avoids the use of low-density carriers having a particle range of about 300 μm to 1,400 μm; oily substances; and/or hollow, glass bodies.

It is also an object of the present invention to provide a method for applying at least one agricultural compound to the water of paddy fields by applying to the water surface of the paddy fields a light, extruded composition.

It is a further object of this invention to provide a process for the preparation of a light, extruded composition.

Other objects and advantages of the present invention will be apparent to those skilled in the art from the description below and the appended claims.

SUMMARY OF THE INVENTION

The present invention relates to a light, extruded composition which comprises at least one agricultural compound; a light, extrudable, ceramic carrier; and at least one surface active agent.

The present invention also relates to a method for applying at least one agricultural compound to the water of paddy fields which method comprises applying to the water surface of the paddy fields a light, extruded composition comprising at least one agricultural compound; a light, extrudable, ceramic carrier; and at least one surface active agent.

The present invention further provides a process for the preparation of the light, extruded compositions of this invention.

DETAILED DESCRIPTION OF THE INVENTION

The light, extruded compositions of this invention comprise at least one agricultural compound; a light, extrudable, ceramic carrier; and at least one surface active agent.

Preferred light, extruded compositions of the present invention are those comprising at least one agricultural compound; a light, extrudable, ceramic carrier; at least one surface active agent; a mineral carrier; and a binder.

More preferred light, extruded compositions of the present invention are those comprising, on a weight to weight basis, about 0.5% to 75% of one or more agricultural compound(s); about 15% to 90% of a light, extrudable, ceramic carrier; about 2% to 20% of one or more surface active agent(s); about 1% to 30% of a mineral carrier; and about 0.1% to 10% of a binder.

Most preferred light, extruded compositions of this invention are those comprising, on a weight to weight basis, about 1% to 60% of one or more agricultural compound(s); about 20% to 60% of a light, extrudable, ceramic carrier; about 2% to 15% of one or more surface active agent(s); about 1% to 15% of a mineral carrier; and about 0.5% to 5% of a binder.

The light, extrudable, ceramic carrier is an especially important element of the present compositions because: (1) the light, extrudable, ceramic carrier lowers the density of the compositions, and (2) the light, extrudable, ceramic carrier does not lose its

desirable low density property when subjected to the process steps used to prepare the compositions of this invention. In contrast, hollow, glass bodies, which are used in conventional light, solid compositions, are not entirely stable to conditions encountered during the preparation of light, extruded compositions. In particular, hollow, glass bodies are not entirely stable to the pressure and shearing forces encountered in processes which include an extrusion step.

Light, extrudable, ceramic carriers suitable for use in this invention include ceramic carriers having a density less than the medium to which the light, extruded compositions are to be applied. The light, extrudable, ceramic carrier typically has a density of less than 1 g/cm^3, and preferably has a density of from about 0.5 g/cm^3 to 0.8 g/cm^3. In a preferred embodiment of the present invention, the light, extrudable, ceramic carrier is prepared by: (1) heating a naturally occuring mineral composition which comprises silicon(IV) oxide, aluminum oxide, calcium oxide, iron(III) oxide and titanium(IV) oxide; (2) selecting particles having a density of from about 0.5 g/cm^3 to 0.8 g/cm^3; and (3) sieving the particles to obtain a light, extrudable, ceramic carrier having the desired particle size range. In another preferred embodiment of this invention, the light, extrudable, ceramic carrier is prepared from a composition which comprises, on a weight to weight basis, about 50% to 60% silicon(IV) oxide, about 25% to 45% aluminum oxide, about 0.1% to 6% calcium oxide, about 0.1% to 3% iron(III) oxide and about 0.1% to 2% titanium(IV) oxide. To ensure that the light, extrudable, ceramic carrier retains its desirable low density property, the light, extrudable, ceramic carrier preferably has a pressure strength (>40% survival)

greater than about 150 kg/cm^2, and more preferably greater than about 500 kg/cm^2. The light, extrudable, ceramic carrier of the present invention preferably has an average particle size of about 20 μm to 300 μm, and more preferably, about 100 μm to 250 μm. Examples of light, extrudable, ceramic carriers suitable for use in the compositions of this invention include the E-SPHERES line of hollow, ceramic spheres commercially available from Taiheiyo Cement, Tokyo, Japan.

Agricultural compounds suitable for use in the light, extruded compositions of this invention include, but are not limited to, herbicides, insecticides, acaricides, nematicides, fungicides, molluscicides, plant growth regulators, safeners, algicides, and mildewicides, and mixtures thereof.

Herbicides suitable for use in the compositions of this invention include, but are not limited to, 2,4-D, 2,4-D-2-ethylhexyl, 2,4-D-isobutyl, 2,4-D-butyl, 2,4-D-calcium, 2,4-D-dimethylammonium, 2,4-D-diolamine, 2,4-D-isooctyl, 2,4-D-isopropyl, 2,4-D-potassium, 2,4-D-sodium, 2,4-D-trolamine, azimsulfuron, bensulfuron-methyl, bentazone, benzofenap, bifenox, bromobutide, butachlor, cafenstrole, chlormethoxynil, chlornitrofen, chlorthiamid, cinmethylin, cinosulfuron, clomeprop, cyclosulfamuron, cyclosulfamuron sodium salt, cyhalofop-butyl, dimepiperate, dimethametryn, dithiopyr, dymron, esprocarb, ethoxysulfuron, etobenzanid, fentrazamid, imazosulfuron, MCPA, MCPA-butyl, MCPA-calcium, MCPA-dimethylammonium, MCPA-isooctyl, MCPA-potassium, MCPA-sodium, MCPB, MCPB-ethyl, MCPB-sodium, MCPCA, mefenacet, molinate, naproanilide, oxadiazon, oxaziclomefone, pendimethalin, pentoxazone, piperophos, pretilachlor, prometryn, propanil, pyrazolate, pyrazosulfuron-ethyl, pyrazoxyfen, pyributicarb, simetryn, swep, thenylchlor,

and thiobencarb, and mixtures thereof. Cyclosulfamuron, cafenstrole, and dymron, and mixtures thereof are preferred herbicides for use in the compositions of this invention.

Insecticides suitable for use in the compositions of this invention include, but are not limited to, acephate, alpha-cypermethrin, benfuracarb, bensultap, BPMC, buprofezin, carbaryl, carbofuran, carbosulfan, cartap, chlorfenapyr, chlorfenvinphos, chlorpyrifos-methyl, chlorpyrifos, cyanofenphos, cycloprothrin, diazinon, dimethoate, dioxabenzofos, disulfoton, EPN, ethofenprox, fenitrothion, fenthion, furathiocarb, isoprocarb, methyl isothiocyanate, isoxathion, malathion, methomyl, metolcarb, monocrotophos, nitenpyram, phenthoate, pirimiphos-ethyl, pirimiphos-methyl, propaphos, propoxur, pyraclofos, pyridaphenthion, quinalphos, tetrachlorvinphos, thiocyclam, thiodicarb, trichlorphon, vamidothion, XMC, xylylcarb, and 1-[1-(*p*-chlorophenyl)-2-fluoro-4-(4-fluoro-3-phenoxyphenyl)-2-butenyl]-cyclopropane (R,S)-(Z), and mixtures thereof.

Fungicides suitable for use in the compositions of this invention include, but are not limited to, benomyl, captan, diclomezine, edifenphos, fenoxanil, ferimzone, flutolanil, fthalide, iprobenfos, iprodione, isoprothiolane, kasugamycin, kasugamycin hydrochloride hydrate, mepronil, metalaxyl, methominostrobin, oxolinic acid, pencycuron, probenazole, pyroquilon, tecloftalam, thiophanate-methyl, TPN, tricyclazole, triflumizole, and validamycin, and mixtures thereof.

Surface active agents suitable for use in the compositions of the present invention include, but are not limited to, alkyl benzene sulfonates, alkyl naphthalene sulfonates, lignosulfonates, naphthalene sulfonate-formaldehyde condensates, alkyl naphthalene

sulfonate-formaldehyde condensates, polyoxyethylene alkyl ethers, polyoxyethylene alkyl ether sulfates, polyoxyethylene alkyl ether phosphates, polyoxyethylene alkyl aryl ethers, polyoxyethylene alkyl aryl ether sulfates, polyoxyethylene alkyl aryl ether phosphates, polycarboxylates, sodium tripolyphosphates, hexameta phosphates, phenol sulfonates, alkyl sulfates, dialkyl sulfosuccinates, alkyl ether sulfates and acetylene glycols and mixtures thereof. Preferred surface active agents include alkyl naphthalene sulfonates such as a sodium alkyl naphthalene sulfonate and the like; polycarboxylates; naphthalene sulfonate-formaldehyde condensates such as a sodium naphthalene sulfonate-formaldehyde condensate and the like; and dialkyl sulfosuccinates such as a sodium alkyl sulfonated alkylate and the like; and mixtures thereof.

Mineral carriers suitable for use in the compositions of this invention include, but are not limited to, bentonites such as calcium bentonite and sodium bentonite; montmorillonite clays; kaolin clays; diatomaceous earth; and talc; and mixtures thereof. Sodium bentonite is a preferred mineral carrier.

Binders suitable for use in the compositions of the present invention include, but are not limited to, cellulose based binders such as sodium carboyxymethyl cellulose, hydroxy methyl cellulose, methyl cellulose, ethyl cellulose, and the like; dextrin; starch; poly(vinyl alcohol); sodium alginate; sodium polyacrylate; and gums such as xanthan gum, welan gum, gum arabic and the like; and mixtures thereof. Sodium carboxymethyl cellulose is a preferred binder.

The present invention further provides herbicidal compositions for the control of undesirable plant species in the presence of rice plants. Preferred herbicides for

the control of undesirable plant species in the presence of rice plants include cyclosulfamuron, cafenstrole, dymron, pentoxazone, fentrazamid, dithiopyr, oxaziclomefone, clomeprop, and cinmethylin, and mixtures thereof. Preferred rice herbicide mixtures for use in the compositions of this invention include: cyclosulfamuron/cafenstrole/dymron mixtures; cyclosulfamuron/pentoxazone mixtures; cyclosulfamuron/fentrazamid/dymron mixtures; cyclosulfamuron/dithiopyr mixtures; cyclosulfamuron/oxaziclomefone mixtures; cyclosulfamuron/oxaziclomefone/clomeprop mixtures; and cyclosulfamuron/cinmethylin mixtures.

A preferred herbicidal composition of this invention comprises, on a weight to weight basis, about 0.2% to 7% cyclosulfamuron; about 10% to 20% cafenstrole; about 25% to 35% dymron; about 25% to 45% of a light, extrudable, ceramic carrier which: (1) is prepared from a composition which comprises silicon(IV) oxide, aluminum oxide, calcium oxide, iron(III) oxide and titanium(IV) oxide, (2) has an average particle size of about 100 µm to 250 µm, and (3) has a pressure strength greater than about 150 kg/cm^2; about 4% to 8% of a sodium alkyl naphthalene sulfonate; about 0.5% to 2% of a mixture of a polycarboxylate and a sodium naphthalene sulfonate-formaldehyde condensate; about 1% to 3% of a sodium alkyl sulfonated alkylate; about 3% to 8% sodium bentonite; and about 1% to 3% sodium carboxymethyl cellulose.

The light, extruded compositions of this invention may be prepared by:

(a) mixing at least one agricultural compound; a light, extrudable, ceramic carrier; at least one surface active agent; optionally a mineral carrier; and optionally a binder with water to obtain an extrudable mixture;

(b) extruding the extrudable mixture from step (a) to obtain an extrudate; and

(c) drying the extrudate to obtain the light, extruded compositions of this invention.

Advantageously, the light, extrudable, ceramic carrier of the present invention is stable during the extrusion process and retains its desirable low-density property. In contrast, light, carriers made from materials such as glass and/or having a large average particle size are not entirely stable during the extrusion process and lose a significant amount of their desirable low density properties.

The light, extruded compositions of this invention may be applied directly to water, soil or other media for application of the agricultural compound(s). In particular, the light, extruded compositions of the present invention are useful for applying agricultural compounds to the water of paddy fields. Paddy-wide application of one or more agricultural compounds may be achieved by localized application(s) of the light, extruded compositions of this invention to the water surface of paddy fields. Accordingly, the present invention provides a method for applying at least one agricultural compound to the water of paddy fields by applying to the water surface of the paddy fields a light, extruded composition comprising at least one agricultural compound; a light, extrudable, ceramic carrier; and at least one surface active agent.

The light, extruded compositions of this invention may be packaged in a contained, water-soluble delivery system and applied to the water surface of paddy fields in water-soluble, packaged form. Water-soluble delivery systems include, but are not limited to, water-soluble

poly(vinyl alcohol) bags (PVA bags), water-soluble paper bags, and water-soluble bottles, and the like.

Alternatively, the light, extruded compositions of this invention may be packaged in uncontained systems and applied by hand, spoon, aerial or mechanical application from the uncontained system. Uncontained systems include, but are not limited to, bags, including foil lined bags, tubes including paper tubes, and hoppers, either hand held or attached to a mechanical applicator, such as a cultivator.

In order to facilitate a further understanding of the invention, the following examples are presented primarily for the purpose of illustrating more specific details thereof. The scope of the invention should not be deemed limited by the examples, but encompasses the entire subject matter defined in the claims.

EXAMPLE 1

Preparation of light, extruded compositions

A mixture of cyclosulfamuron (3.3 g; average particle size less than 20 μm); cafenstrole (15.75 g, average particle size less than 5 μm); dymron (31.50 g); sodium bentonite (4.8 g, particle size range 5-10 μm, commercially available as bentonite-Na type from Kunimine Co., Tokyo, Japan); NEWKALGEN WG-1 a sodium alkyl naphthalene sulfonate (6.0 g, commercially available from Takemoto Oil and Fat Co., Aichi, Japan); and CELLOGEN WS-C a sodium carboxymethyl cellulose (1.5 g, commercially available from Dai-Ichi Kogyo Seiyaku Co., Kyoto, Japan) is blended to obtain a first mixture. E-SPHERES SL-180 hollow ceramic spheres (34.15 g, average particle size 115 μm, commercially available from Taiheiyo Cement, Tokyo, Japan) are added to the first mixture and blended to obtain a second mixture. NEWKALGEN TG-285 a mixture of a polycarboxylate and a sodium naphthalene sulfonate-formaldehyde condensate (1.0 g, commercially available from Takemoto Oil and Fat Co.); NEWKALGEN EP-70G a sodium alkyl sulfonated alkylate (2.0 g, commercially available from Takemoto Oil and Fat Co.); and water are added to the second mixture and blended to obtain an extrudable mixture. The extrudable mixture is passed through a basket extruder to obtain extruded material. The extruded material is dried and sieved to give the light, extruded composition identified as composition 1 in Table I.

Using essentially the same process, the light, extruded compositions identified as compositions 2-16 in Tables I-V are obtained.

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TABLE I

Light, Extruded Compositions

Comp.	Ingredient/%wt/wt								
	Cyclo-sulfamuron	Cafen-strole	Dymron	Sodium Bentonite	NEWKALGEN WG-1	CELLOGEN WS-C	E-SPHERES/ (Avg. particle size µm)	NEWKALGEN TG-285	NEWKALGEN EP-70G
1	3.30	15.75	31.50	4.80	6.00	1.50	34.15/ (115)[1]	1.00	2.00
2	3.30	15.75	31.50	4.80	6.00	1.50	34.15/ (103)[2]	1.00	2.00
3	3.30	13.13	26.25	5.00	6.00	1.50	41.82/ (115)[1]	1.00	2.00
4	2.64	12.60	25.20	6.06	6.00	1.50	43.00/ (103)[2]	1.00	2.00
5	2.20	10.50	21.00	7.30	6.00	2.00	48.00/ (103)[2]	1.00	2.00

[1] E-SPHERES SL-180

[2] E-SPHERES SL-150

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TABLE II

Light, Extruded Compositions

	Ingredient/%wt/wt								
Comp.	Bensulfuron-methyl	Cafen-strole	Dymron	Sodium Bentonite	NEWKALGEN WG-1	CELLOGEN WS-C	E-SPHERES SL-180/ (Avg. particle size µm)	NEWKALGEN TG-285	NEWKALGEN EP-70G
6	3.57	14.70	31.50	4.73	6.00	1.50	35.00/ (115)	1.00	2.00
7	2.68	11.03	23.63	5.66	6.00	2.00	46.00/ (115)	1.00	2.00
8	2.15	8.82	18.90	6.63	6.00	2.50	52.00/ (115)	1.00	2.00
9	1.79	7.35	16.75	8.11	6.00	3.00	54.00/ (115)	1.00	2.00

66T20 6SB8N260

TABLE III

Light, Extruded Compositions

Comp.	Ingredient/%wt/wt							
	Pyrazosul-furon-ethyl	Cafen-strole	Sodium Bentonite	NEWKALGEN WG-1	CELLOGEN WS-C	E-SPHERES SL-180/ (Avg. particle size µm)	NEWKALGE N TG-285	NEWKALGE N EP-70G
10	2.21	22.10	8.69	8.00	3.00	53.00/ (115)	1.00	2.00
11	1.47	14.70	13.83	8.00	3.00	56.00/ (115)	1.00	2.00
12	1.10	11.00	13.90	8.00	3.00	60.00/ (115)	1.00	2.00

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TABLE IV

Light, Extruded Compositions

	Ingredient/%wt/wt								
Comp.	Fenoxanil	Pyro-quilon	Methomin-ostrobin	Sodium Bentonite	NEWKALGEN WG-1	CELLOGEN WS-C	E-SPHERES SL-180/ (Avg. particle size µm)	NEWKALGEN TG-285	NEWKALGEN EP-70G
13	50.00	-	-	2.00	6.00	1.00	38.00/ (115)	1.00	2.00
14	-	50.00	-	2.00	6.00	1.00	38.00/ (115)	1.00	2.00
15	-	-	50.00	2.00	6.00	1.00	38.00/ (115)	1.00	2.00

TABLE V

Light, Extruded Compositions

Composition Number 16

Ingredient	% wt/wt
1-[1-(*p*-Chlorophenyl)-2-fluoro-4-(4-fluoro-3-phenoxyphenyl)-2-butenyl]cyclopropane (R,S)-(Z)	5.00
Carplex #80[1]	12.00
Sodium Bentonite	10.00
NEWKALGEN WG-1	8.00
CELLOGEN WS-C	2.00
E-SPHERES SL-180 (average particle size 115 μm)	60.00
NEWKALGEN TG-285	1.00
NEWKALGEN EP-70G	2.00

[1] A precipitated silica

EXAMPLE 2

Herbicidal evaluations of light, extruded compositions

A field is cultivated, muddled, sown with weed seeds (identified below), and fertilized. Five to six days later, rice seedlings (variety Chiyonishiki) at the 2.5 leaf stage are transplanted into the prepared field. The field is then divided into 100 m^2 (10 m x 10 m) test plots using plastic plates and each plot is flooded with water to a depth of 5 cm. The flood levels are maintained at 5 cm throughout the evaluations. 20 g of composition number 1 from Example 1 and 20 g of composition number 1 from Example 1 packaged in water-soluble poly(vinyl alcohol) bags 20 g/bag are applied to the center of separate test plots to provide a rate equivalent to 60 g cyclosulfamuron, 300 g cafenstrole and 600 g dymron per hectare. After 42 days, the test plots are divided into quarters for herbicidal evaluations. These divisions are labeled as follows: point A - southwest quarter, point B - northwest quarter, point C - northeast quarter and point D southeast quarter. Each quarter is evaluated for percent weed control compared to a check. The results are summarized in Table VI below. As can be seen from the data in Table VI, the light, extruded composition of the present invention provides control of all weed species throughout the test plots from a single application of the invention composition in the middle of each plot.

WEED SPECIES

Code Name	Common Name	Scientific Name
ECHCR	Barnyardgrass	*Echinochloa crus-galli*
SCPJU	Bulrush, Japanese	*Scirpus juncoides*
MOOVA	Monochoria	*Monochoria vaginallis*
LIDPY	Falsepimpernel, common	*Lindernia pyxidaria*
SAGPY	Arrowhead	*Sagittaria pygmaea*
CYPSE	Flatsedge	*Cyperus serotinus*

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TABLE VI

Herbicidal Evaluations of Light, Extruded Compositions

Treatment[1]	Weed Species	% Weed Control			
		Point-A	Point-B	Point-C	Point-D
Composition 1	ECHCR	100	100	99	100
	SCPJU	100	100	98	100
	MOOVA	100	100	100	100
	LIDPY	99	100	97	97
	SAGPY	100	100	100	100
	CYPSE	100	100	100	100
Composition 1 packaged in PVA bag	ECHCR	100	100	100	100
	SCPJU	100	100	100	100
	MOOVA	100	100	100	100
	LIDPY	100	95	100	100
	SAGPY	100	100	100	100
	CYPSE	100	100	100	100

[1] All treatments are applied at a rate to provide the equivalent of 60 g cyclosulfamuron, 300 g cafenstrole and 600 g dymron per hectare.

WHAT IS CLAIMED IS:

1. A light, extruded composition which comprises at least one agricultural compound; a light, extrudable, ceramic carrier; and at least one surface active agent.

2. The composition according to claim 1 which further comprises a mineral carrier and a binder.

3. The composition according to claim 2 which comprises on a weight basis about 0.5% to 75% of one or more agricultural compound(s); about 15% to 90% of the light, extrudable, ceramic carrier; about 2% to 20% of one or more surface active agent(s); about 1% to 30% of the mineral carrier; and about 0.1% to 10% of the binder.

4. The composition according to claim 1 wherein the light, extrudable, ceramic carrier has a density of about 0.5 g/cm^3 to 0.8 g/cm^3.

5. The composition according to claim 1 wherein the light, extrudable, ceramic carrier is prepared from a composition which comprises on a weight basis about 50% to 60% silicon(IV) oxide, about 25% to 45% aluminum oxide, about 0.1% to 6% calcium oxide, about 0.1% to 3% iron(III) oxide and about 0.1% to 2% titanium(IV) oxide.

6. The composition according to claim 1 wherein the light, extrudable, ceramic carrier has an average particle size of about 100 μm to 250 μm.

7. The composition according to claim 1 wherein the light, extrudable, ceramic carrier has a pressure strength greater than about 150 kg/cm^2.

8. The composition according to claim 1 wherein the agricultural compound is selected from the group consisting of a herbicide, an insecticide, an acaricide, a nematicide, a fungicide, a molluscicide, a plant growth regulator, a safener, an algicide and a mildewicide and mixtures thereof.

9. The composition according to claim 8 wherein the herbicide is selected from the group consisting of 2,4-D, 2,4-D-2-ethylhexyl, 2,4-D-isobutyl, 2,4-D-butyl, 2,4-D-calcium, 2,4-D-dimethylammonium, 2,4-D-diolamine, 2,4-D-isooctyl, 2,4-D-isopropyl, 2,4-D-potassium, 2,4-D-sodium, 2,4-D-trolamine, azimsulfuron, bensulfuron-methyl, bentazone, benzofenap, bifenox, bromobutide, butachlor, cafenstrole, chlormethoxynil, chlornitrofen, chlorthiamid, cinmethylin, cinosulfuron, clomeprop, cyclosulfamuron, cyclosulfamuron sodium salt, cyhalofop-butyl, dimepiperate, dimethametryn, dithiopyr, dymron, esprocarb, ethoxysulfuron, etobenzanid, fentrazamid, imazosulfuron, MCPA, MCPA-butyl, MCPA-calcium, MCPA-dimethylammonium, MCPA-isooctyl, MCPA-potassium, MCPA-sodium, MCPB, MCPB-ethyl, MCPB-sodium, MCPCA, mefenacet, molinate, naproanilide, oxadiazon, oxaziclomefone, pendimethalin, pentoxazone, piperophos, pretilachlor, prometryn, propanil, pyrazolate, pyrazosulfuron-ethyl, pyrazoxyfen, pyributicarb, simetryn, swep, thenylchlor and thiobencarb and mixtures thereof;
the insecticide is selected from the group consisting of acephate, alpha-cypermethrin, benfuracarb, bensultap, BPMC, buprofezin, carbaryl, carbofuran, carbosulfan, cartap, chlorfenapyr, chlorfenvinphos, chlorpyrifos-methyl, chlorpyrifos, cyanofenphos, cycloprothrin, diazinon, dimethoate, dioxabenzofos, disulfoton, EPN, ethofenprox, fenitrothion, fenthion, furathiocarb,

isoprocarb, methyl isothiocyanate, isoxathion, malathion, methomyl, metolcarb, monocrotophos, nitenpyram, phenthoate, pirimiphos-ethyl, pirimiphos-methyl, propaphos, propoxur, pyraclofos, pyridaphenthion, quinalphos, tetrachlorvinphos, thiocyclam, thiodicarb, trichlorphon, vamidothion, XMC, xylylcarb, and 1-[1-(*p*-chlorophenyl)-2-fluoro-4-(4-fluoro-3-phenoxyphenyl)-2-butenyl]cyclopropane (R,S)-(Z), and mixtures thereof; and the fungicide is selected from the group consisting of benomyl, captan, diclomezine, edifenphos, fenoxanil, ferimzone, flutolanil, thalide, iprobenfos, iprodione, isoprothiolane, kasugamycin, kasugamycin hydrochloride hydrate, mepronil, metalaxyl, methominostrobin, oxolinic acid, pencycuron, probenazole, pyroquilon, tecloftalam, thiophanate-methyl, TPN, tricyclazole, triflumizole and validamycin and mixtures thereof.

10. The composition according to claim 1 wherein the agricultural compound is selected from the group consisting of cyclosulfamuron, cafenstrole and dymron and mixtures thereof.

11. The composition according to claim 1 wherein the surface active agent is selected from the group consisting of an alkyl benzene sulfonate, an alkyl naphthalene sulfonate, a lignosulfonate, a naphthalene sulfonate-formaldehyde condensate, an alkyl naphthalene sulfonate-formaldehyde condensate, a polyoxyethylene alkyl ether, a polyoxyethylene alkyl ether sulfate, a polyoxyethylene alkyl ether phosphate, a polyoxyethylene alkyl aryl ether, a polyoxyethylene alkyl aryl ether sulfate, a polyoxyethylene alkyl aryl ether phosphate, a polycarboxylate, a sodium tripolyphosphate, a hexameta phosphate, a phenol sulfonate, an alkyl sulfate, a

dialkyl sulfosuccinate, an alkyl ether sulfate and an acetylene glycol and mixtures thereof.

12. The composition according to claim 11 wherein the surface active agent is selected from the group consisting of an alkyl naphthalene sulfonate, a polycarboxylate, a naphthalene sulfonate-formaldehyde condensate and a dialkyl sulfosuccinate and mixtures thereof.

13. The composition according to claim 12 wherein the surface active agent comprises a mixture of a sodium alkyl naphthalene sulfonate, a polycarboxylate, a sodium naphthalene sulfonate-formaldehyde condensate and a sodium alkyl sulfonated alkylate.

14. The composition according to claim 2 wherein the mineral carrier is selected from the group consisting of calcium bentonite, sodium bentonite, montmorillonite, kaolin clay, pyrophyllite clay, sericite clay, diatomaceous earth and talc and mixtures thereof.

15. The composition according to claim 14 wherein the mineral carrier is sodium bentonite.

16. The composition according to claim 2 wherein the binder is selected from the group consisting of sodium carboxymethyl cellulose, hydroxy methyl cellulose, methyl cellulose, ethyl cellulose, dextrin, starch, poly(vinyl alcohol), sodium alginate, sodium polyacrylate, xanthan gum, welan gum and gum arabic and mixtures thereof.

17. The composition according to claim 16 wherein the binder is sodium carboxymethyl cellulose.

18. The composition according to claim 2 which comprises on a weight basis about 0.2% to 7% cyclosulfamuron; about 10% to 20% cafenstrole; about 25% to 35% dymron; about 25% to 45% of a light, extrudable, ceramic carrier which: (1) is prepared from a composition which comprises on a weight basis about 50% to 60% silicon(IV) oxide, about 25% to 45% aluminum oxide, about 0.1% to 6% calcium oxide, about 0.1% to 3% iron(III) oxide and about 0.1% to 2% titanium(IV) oxide, (2) has an average particle size of about 100 μm to 250 μm, and (3) has a pressure strength greater than about 150 kg/cm^2; about 4% to 8% of a sodium alkyl naphthalene sulfonate; about 0.5% to 2% of a mixture of a polycarboxylate and a sodium naphthalene sulfonate-formaldehyde condensate; about 1% to 3% of a sodium alkyl sulfonated alkylate; about 3% to 8% sodium bentonite; and about 1% to 3% sodium carboxymethyl cellulose.

19. A method for applying at least one agricultural compound to the water of paddy fields which comprises applying to the water surface of the paddy fields a light, extruded composition comprising at least one agricultural compound; a light, extrudable, ceramic carrier; and at least one surface active agent.

20. The method according to claim 19 wherein the light, extruded composition further comprises a mineral carrier and a binder.

21. The composition according to claim 19 wherein the light, extrudable, ceramic carrier has a density of about 0.5 g/cm^3 to 0.8 g/cm^3.

22. The method according to claim 19 wherein the light, extrudable, ceramic carrier is prepared from a composition which comprises on a weight basis about 50% to 60% silicon(IV) oxide, about 25% to 45% aluminum oxide, about 0.1% to 6% calcium oxide, about 0.1% to 3% iron(III) oxide and about 0.1% to 2% titanium(IV) oxide.

23. The method according to claim 19 wherein the light, extrudable, ceramic carrier has an average particle size of about 100 µm to 250 µm.

24. The method according to claim 19 wherein the light, extrudable, ceramic carrier has a pressure strength greater than about 150 kg/cm^2.

25. The method according to claim 19 wherein the agricultural compound is selected from the group consisting of a herbicide, an insecticide, an acaricide, a nematicide, a fungicide, a molluscicide, a plant growth regulator, a safener, an algicide and a mildewicide and mixtures thereof.

26. The method according to claim 19 wherein the agricultural compound is selected from the group consisting of cyclosulfamuron, cafenstrole and dymron and mixtures thereof. .

27. The method according to claim 20 wherein the surface active agent comprises a mixture of a sodium alkyl naphthalene sulfonate, a polycarboxylate, a sodium

naphthalene sulfonate-formaldehyde condensate and a sodium alkyl sulfonated alkylate; the mineral carrier is sodium bentonite; and the binder is sodium carboxymethyl cellulose. .

28. The method according to claim 19 wherein the light, extruded composition is packaged in a contained, water-soluble delivery system and the packaged, light, extruded composition is applied to the water surface. .

29. The method according to claim 28 wherein the contained, water-soluble delivery system is selected from the group consisting of a water-soluble poly(vinyl alcohol) bag, a water-soluble paper bag and a water-soluble bottle. .

30. The method according to claim 19 wherein the light, extruded composition is packaged in an uncontained system and the uncontained, light, extruded composition is applied to the water surface by hand, spoon, aerial or mechanical application. .

31. The method according to claim 30 wherein the uncontained system is selected from the group consisting of a bag, a tube and a hopper. .

32. A process for the preparation of a light, extruded composition comprising at least one agricultural compound; a light, extrudable, ceramic carrier; and at least one surface active agent, which process comprises the steps of:

(a) mixing the agricultural compound; the light, extrudable, ceramic carrier; and the surface active agent with water to obtain an extrudable mixture;

(b) extruding the extrudable mixture from step (a) to obtain an extrudate; and

(c) drying the extrudate to obtain the light, extruded composition. .

33. The process according to claim 32 wherein step (a) further comprises a mineral carrier and a binder.

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LIGHT, EXTRUDED COMPOSITIONS CONTAINING A LIGHT, EXTRUDABLE, CERAMIC CARRIER, METHODS FOR THEIR USE, AND PROCESSES FOR THEIR PREPARATION

ABSTRACT OF THE INVENTION

The present invention provides light, extruded compositions and methods for their preparation. The light, extruded compositions comprise at least one agricultural compound; a light, extrudable, ceramic carrier; and at least one surface active agent. The present invention also provides a method for applying agricultural compounds to the water of paddy fields by localized application(s) of the light, extruded compositions to the water surface of the paddy fields.

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Docket No. 33556
Patent

COMBINED DECLARATION AND POWER OF ATTORNEY
(Original, Design, Supplemental, Divisional, Continuation,CIP)

As the below named inventor, I hereby declare that:

INVENTORSHIP IDENTIFICATION

My residence, post office address and citizenship are as stated below next to my name. I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

TITLE OF INVENTION

LIGHT, EXTRUDED COMPOSITIONS CONTAINING A LIGHT, EXTRUDABLE, CERAMIC CARRIER, METHODS FOR THEIR USE, AND PROCESSES FOR THEIR PREPARATION

SPECIFICATION IDENTIFICATION

the specification of which: (complete (a), (b), or (c))

(a) ☐ is attached hereto.

(b) ☒ was filed on February 11, 1999 as
- ☐ Serial Number
- ☒ Express Mail No. EL251676630US, as Serial Number not yet known

(c) ☐ was described and claimed in PCT International Application No. filed on and as amended under PCT Article 19 on (if any).

ACKNOWLEDGEMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

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

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37 CFR 1.56(a).

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Docket No. 33556
Patent

PRIORITY CLAIM

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

(d) ☒ No such applications have been filed.
(e) ☐ Such applications have been filed as follows.

NOTE: Where item (c) is entered above and the International Application which designated the U.S. claimed priority, check item (e), enter the details below and make the priority claim.

Earliest Foreign Application(s), if any, filed within 12 months (6 months for Design) prior to this U.S. Application

Country	Application No.	Date of Filing (Day, Month, Year)	Priority Claimed 35 USC 119

All Foreign Application(s), if any, Filed More Than 12 Months (6 Months for Design) Prior to This U.S. Application)

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Docket No. 33556
Patent

CLAIM FOR BENEFIT OF PRIOR U.S. PROVISIONAL APPLICATION(S)
(35 U.S.C. § 119(E))

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

PROVISIONAL APPLICATION NUMBER **FILING DATE**

_____ _____

_____ _____

CLAIM FOR BENEFIT OF EARLIER U.S./PCT APPLICATION(S)
UNDER 35 U.S.C. 120

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

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

U.S. Applications			**Status (Check One)**		
U.S. Applications		U.S. Filing Date	Patented	Pending	Abandoned
1.			☐	☐	☐
2.			☐	☐	☐

Docket No. 33556
Patent

PCT Applications Designating U.S.		
PCT APPLICATION NO.	PCT FILING DATE	U.S. SERIAL NO. ASSIGNED (if any)
3.		
4.		

POWER OF ATTORNEY

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

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☐ Attached as part of this declaration and power of attorney is the authorization of the above-named attorney(s) to accept and follow instructions from my representative(s).

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Docket No. 33556
Patent

DECLARATION

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

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Country of Citizenship
Residence
Post Office Address