Señor

SUPERINTENDENTE DELEGADO PARA LA PROPIEDAD INDUSTRIAL

DIVISION DE NUEVAS CREACIONES

E. S. D.

Ref: P1.-**S.C. JOHNSON & SON, INC.**-Expediente No. **00-041.505.-**

1. Me refiero al asunto de la referencia.

2. Por medio del presente, atentamente me permito manifestar que hubo un **cambio** de apoderado para todos los asuntos de la Propiedad Industrial en Bogotá de la sociedad **S.C. JOHNSON & SON, INC.**

3. En consecuencia, atentamente solicito a ese Despacho reconocerme personería en este asunto, de conformidad con la sustitución de poder adjunta, otorgada a favor de la SUSCRITA.

4. Por lo tanto, ruego a usted notificarme de las providencias expedidas dentro de este expediente y notificadas al anterior apoderado, que actualmente se encuentran pendientes de cumplimiento o de respuesta.

5. Solicito a ese Despacho proceder de conformidad.

Atentamente,

ALICIA LLOREDA RICAURTE

T.P. 53215

Código 231

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Señor
SUPERINTENDENTE DE INDUSTRIA Y COMERCIO
DIVISION DE NUEVAS CREACIONES
E. S. D.

Ref: P1.- **S.C. JOHNSON & SON, INC.**- Expediente No. **00-041.505.**

Yo, **JOSE ANTONIO LLOREDA**, mayor de edad y vecino de esta ciudad, abogado titulado e inscrito, identificado como aparece al pie de mi firma, actuando en mi carácter de Representante Legal en Bogotá para asuntos relacionados con la propiedad industrial, de **S.C. JOHNSON & SON, INC.**, sociedad organizada y existente de conformidad con las leyes del Estado de Wisconsin, Estados Unidos de América, domiciliada en Racine, Wisconsin, Estados Unidos de América, tal y como consta en este expediente, atentamente manifiesto a usted que **SUSTITUYO** el poder a mi conferido a la doctora **ALICIA LLOREDA RICAURTE**, abogada titulada e inscrita, identificada con la cédula de ciudadanía No. 39.690.713 de Usaquén y tarjeta profesional Nº 53.215, para que continúe representandola en el expediente de la referencia.

El mencionado apoderado tendrá las mismas facultades a mi conferidas, en especial, renunciar, recibir, sustituir, desistir, presentar recursos, conciliar, transigir, y en fin, para todo lo que se encamine a la correcta defensa de los intereses de la sociedad en cuyo nombre hablo.

Atentamente,

JOSE ANTONIO LLOREDA
T.P. 10784
Código 231

NOTARIA SEXTA DE BOGOTA
RECONOCIMIENTO Y PRESENTACION PERSONAL
Bogotá, D.C. 25 AGO 2004
Ante mi PABLO MENDEZ BARRIOS
NOTARIO SEXTO(E) DEL CIRCULO DE BOGOTA
Comparecieron:
quien (es) exhibió(eron) la(s) C.C.
y declaró(aron) que la(s) firma(s) que aparece(n) en el presente documento es(son) la(s) suya (s) y que el contenido del mismo es cierto.
En constancia se firma esta diligencia y se imprime.

NOTARIA SEXTA
PABLO MENDEZ BARRIOS
Bogotá D.C.

JOSE ANTONIO LLOREDA
C.C. No. 17.159.681 de Bogotá

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(71) Applicant:
Sumitomo Chemical Company, Limited
Chuo-ku Osaka 541-8550 (JP)

(72) Inventor: Ishiwatari, Takao
Toyonaka-shi, Osaka (JP)

(74) Representative:
VOSSIUS & PARTNER
Siebertstrasse 4
81675 München (DE)

(54) Cockroach repellent

(57) A cockroach repellent comprising 2,3,5,6-tetrafluorobenzyl (1R)-trans-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate (transfluthrin) as its active ingredient and a method for repelling cockroaches by using transfluthrin.

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Description

[0001] The present invention relates to cockroach repellents.

[0002] Hitherto, an aerosol formulation containing N,N-diethyl-m-toluamide was utilized in order to repel mosquitoes and gnats. Furthermore, it is described in JP-A-58-92803 that cockroaches can be repelled by utilizing ether compounds such as empenthrin.

[0003] Noxious pest repellents containing N,N-diethyl-m-toluamide were developed to target mosquitoes and gnats, but were not sufficient to repel cockroaches effectively. Furthermore, the ether compounds described in JP-A-58-92803 are very effective for some moments after disposal, but with the effectiveness of the repellent to greatly decrease together with the passing of time, are not sufficient to repel cockroaches.

[0004] The present invention provides a high activity cockroach repellent containing transfluthrin [2,3,5,6-tetrafluorobenzyl (1R)-trans-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropanecarboxylate as an active ingredient. Additionally, the present invention provides a method of repelling cockroaches using transfluthrin, especially, a method of repelling cockroaches wherein a sheet containing transfluthrin is placed indoors.

[0005] Transfluthrin used in the present invention, a compound described in US-A 4,889,872, can be produced following the method disclosed therein.

[0006] The cockroach repellent of the present invention may be transfluthrin as the active ingredient itself, but preferred are the forms wherein transfluthrin is supported on a carrier having, for example, the form of a sheet. Formulations wherein the active agent is incorporated into a resin, emulsifiable concentrates, oil formulations, wettable powders, flowable preparations, granules, dusts, aerosol formulations and formulations for heat vaporization are indicated as possible forms, and using transfluthrin supported on a sheet is especially preferred.

[0007] When the cockroach repellent of the present invention takes the form of a sheet formulation, the material for said sheet is not especially limited, and for example, paper, synthetic resins (e.g. polyethylene, cross-linked polyethylene, polypropylene, cellophane, polyvinylidene chloride, polyvinyl chloride, polyester, polyvinyl acetal, polyamide, fluorocarbon resin, polycarbonate and copolymers thereof) and cloth (e.g. cotton, silk, wool, hemp or synthetic fibers) are feasible. The amount of transfluthrin to be supported on the sheet is about 0.01g to 50g for 1m^2, preferably 0.05g to 20g.

[0008] When the cockroach repellent of the present invention takes the form of an emulsifiable concentrate or oil formulation the amount of transfluthrin within said formulation is generally from 0.01 to 10% by weight.

[0009] Furthermore, the cockroach repellent of the present invention may additionally contain pest repellent ingredients other than transfluthrin, for example, N,N diethyl-m-toluamide, carane-3,4-diol, 1-methylpropyl 2-(2-hydoxyethyl)-1-piperidinecarboxylate, p-menthane-3,8-diol or botanical essential oils having pest repellency.

[0010] The cockroach repellent of the present invention may be used in the location desired for cockroach control, for example, sites intruded by cockroaches such as households warehouses or food service areas.

[0011] The method of repelling cockroaches of the present invention not only includes applying the cockroach repellent formulation of the present invention to the sites where cockroaches should be repelled as by dispersing, spraying, spreading, placing or pasting, but also that transfluthrin is incorporated into the material of household instruments beforehand by e.g. spreading, soaking, kneading or dripping, so that when using household instruments that were made from using said material, a method of repelling cockroaches is practiced. The amount of transfluthrin used in the cockroach repellent of the present invention, is generally from about 0.01g to 50g, preferably from 0.05 to 20g per m^2.

[0012] The cockroach repellent of the present invention is effective in repelling various cockroaches such as German cockroach (*Blattella germanica*), smokybrown cockroach (*Periplaneta fuliginosa*), American cockroach (*Periplaneta americana*), brown cockroach (*Periplaneta brunnea*) and oriental cockroach (*Blatta orientalis*).

[Examples]

[0013] On 6cm x 9cm filter paper 1.0ml of an acetone solution (1% by weight) of transfluthrin was spread and dried. The obtained cockroach repellent (sheet formulation) was folded, as to be a tube-like triangular pillar where one side of the triangle-shaped base was 3cm.

[0014] The triangular pillar was placed in a 650ml volume plastic cup as a shelter (cockroach hiding residence) 10 adult German cockroaches (*Blattella germanica*) were placed in said plastic cup together with food and water, and the number of cockroaches in the shelter was observed 24 hours later. The test was repeated twice. Furthermore, the same test was performed after said triangularly pillared shelter has been stored under the conditions of 25°C and 60% humidity for 1 month.

[0015] Results are stated in Table 1. The results are evaluated by the number of cockroaches inside the shelter. Namely, the " - " means that it was 0, " + " is for 1 to 2 cockroaches, and " +/- " is 3 or more.

[0016] In addition, tests results using empenthrin and furthermore N,N-diethyl-m-toluamide (Deet) replacing transfluthrin as well as test results using an untreated shelter are also stated in Table 1.

[Table 1]

	Test results just after treatment	Test results after 1 month conserved
transfluthrin	-	-
empenthrin	-	++
Deet	++	
non-treatment	++	

[0017] As seen in the above table, the cockroach repellent of the present invention is effective for repelling cockroaches even after a storage of 1 month.

[0018] The cockroach repellent of the present invention is not only effective at an early time after its production but also after a long storage. It is thus an extraordinary effective repellent.

Claims

1. A cockroach repellent which comprises transfluthrin as an active ingredient and an inert carrier.
2. A cockroach repellent which comprises transfluthrin supported on a sheet.
3. A method for repelling cockroaches which comprises applying an effective amount of transfluthrin to sites intruded by cockroaches.
4. A method for repelling cockroaches which comprises placing a sheet containing transfluthrin indoors.
5. A use of transfluthrin for repelling cockroaches.

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(71) Applicant: S.C. JOHNSON & SON, INC. [US/US]; 1525 Howe Street, Racine, WI 53403-2236 (US).

(72) Inventors: EMMRICH, Robert, R.; 6340 Douglas Avenue, Racine, WI 53402 (US). MIKKONEN, John, W.; 4021 Prairie Village Drive, Kenosha, WI 53142 (US). LAJINESS, Thomas, A.; 1129 Indiana Street, Racine, WI 53405 (US).

(74) Agents: HOUSER, David, J. et al.; S.C. Johnson & Son, Inc., Patent Section, 1525 Howe Street, Racine, WI 53403-2236 (US).

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(57) Abstract

An insect control article to control flying insects. The insect control article has a substrate that is impregnated with an active insect control ingredient that is available for passive evaporation. The active insect control ingredient is selected from the group consisting of transfluthrin, prallethrin, tefluthrin, esbiothrin, and combinations thereof. The method of the invention for controlling flying insects includes providing an insect control article having a substrate that is impregnated with an active insect control ingredient available for passive evaporation, wherein the active insect control ingredient is selected from the group consisting of transfluthrin, prallethrin, vaporthrin, tefluthrin, esbiothrin, DDVP, and combinations thereof. The insect control article is then placed in an environment with air movement in such a manner that the substrate of the insect control article is exposed to the air movement, and the active insect control ingredient impregnated within the substrate is allowed to evaporate passively into the air.

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INSECTICIDE IMPREGNATED ARTICLE FOR THE CONTROL OF FLYING INSECTS

Technical Field

The present invention relates generally to insect control and more particularly to insect control articles that are effective in killing or repelling mosquitoes within the air of a room or the volume of air in the vicinity of a person sitting on a patio, at a picnic table, or the like.

Background Art

For certain applications, it is important to be able to control flying insects for six to ten hour or even longer periods within defined spaces such as the enclosed space of a bedroom. That duration of insect control is desirable, for example, to protect a sleeper occupying an unscreened room from mosquitoes for a single night. It is also useful to be able to deliver an insect controlling amount of active ingredient nightly for multiple nights in succession. Successful flying insect control is also useful in other living spaces, including even screened areas that for any reason are still subject to invasion by flying insects, as well as outdoor areas such as a patio, a picnic table, or the like.

Traditionally, articles or devices that dispense insecticide vapors to control such insects in such settings require heating or burning a liquid or solid substrate to evaporate the active ingredients. For example, conventional citronella candles have long been used for such purposes. Burning insect coils are also commonly used to achieve a night's insect control or to control mosquitoes or other insects for an outdoor party or picnic. The product sold by S. C. Johnson & Son, Inc. of Racine, Wisconsin under the mark "45 Nights®" is an example of a type of product known in the art for delivering insect control over repeated periods of use, such as a nightly use in an unscreened bedroom. The 45 Nights® product is an example of conventional heated, liquid evaporation insect control products.

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The products referred to above all can be effective, within certain limits. However, products that require a heat source also require a safe burning site, in the case of insect coils, for example, and a safe location and source of house electrical current for typical heated evaporation products. Products exist that are designed to avoid some of these difficulties by employing passive evaporation of insect control active ingredients without the application of heat. However, they have problems and limitations of usefulness when compared to products and insect control strategies employing the application of heat.

For example, Regan, U.S. Pat. No. 339,810 uses a tobacco preparation as a repellent that is first soaked into cloth or paper and then dried. The repellent active ingredient is reported to evaporate from the substrate to repel insects. More recent technology has included the use of pyrethrum or pyrethroid materials as passively evaporated insect control active ingredients. For example, see Landsman, U.S. Pat. No. 3,295,246. Ensing, U.S. Pat. No. 4,178,384 employs pyrethroids as repellents applied to the locus to be protected.

Whitcomb, U.S. Pat. No. 4,130,450 describes an insecticide-impregnated, open, low-density web that provides an expanded surface that may be loaded with contact insecticides, including pyrethrum and synthetically prepared insecticides. Whitcomb prefers the use of micro-encapsulated pyrethrum to avoid pyrethrum instability when exposed to ultraviolet light and oxygen. Whitcomb mentions that the web may be hung to permit vaporization of the active ingredient to combat flies. Similarly, Chadwick et al., U.S. Pat. No. 5,229,122 utilizes a mixture of micro-encapsulated and non-micro-encapsulated active ingredients, noting that any known pesticide may be used for the purpose. Pyrethrum or a pyrethroid equivalent are referred to as possible pesticides. The preparation is used to coat surfaces, although it is also noted that the vapor phase of the pesticides may be valuable.

Kauth et al., U.S. Pat. No. 4,796,381, is an example of the use of paper or textile strips impregnated with insecticide that is allowed to evaporate to control insect pests. The Kauth et al. materials utilize pyrethroids and, in particular, vaporthrin, permethrin, and bioallethrin. However, the devices of Kauth et al. are designed to be hung in closets or placed in drawers, suggesting that they are

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understood to be inadequate to protect larger, more open spaces. Nothing in Kauth et al. suggests any ability of their paper or textile strips to control insects in relatively large air volumes when held within a moving air stream.

Samson et al., U.S. Pat. Nos. 5,198,287 and 5,252,387 disclose a fabric for use in a tent, the fabric including a coating that contains evaporatable insecticides, and in particular, permethrin. Again, a confined space is being protected.

Aki et al., U.S. Pat. No. 4,966,796, utilizes a pyrethroid insecticide on kraft paper, with additional layers of untreated kraft paper added to create a material useful for making an insect-resistive packaging material or bag.

Landsman teaches the use of an insecticide-soaked and then dried paper that is coated with resin to slow evaporation of the active ingredient. The resin coating is deemed important to make an insecticide product that will be effective over a usefully long period of time. Example formulations cited in Landsman include pyrethrins as active ingredients. The Landsman product is not intended to protect large volumes of air and is also an example of the difficulty known in the art of achieving protection over an extended period of time because of the evaporative rate of active ingredients.

Ronning et al., U.S. Pat. No. 4,765,982 is an example of the use of micro-encapsulated active ingredients to achieve a sustained release insect control effect. Pyrethroids, either synthetic or "natural," are cited as useful. The Ronning et al. insecticidal device may be hung in the open to achieve a repellent effect in a restricted locale to drive insects from a nest or the like.

Yano et al., U.S. Pat. No. 5,091,183 and Matthewson, U.S. Pat. Nos. 4,940,729 and 5,290,774 cite specific insecticidal compounds for volatilization. Yano et al. specifically discusses the use of impregnated papers for heatless evaporation of an insecticidal compound.

Clarke, U.S. Pat. No. 2,720,013, describes the use of a fabric material into which active ingredients are pressed or fused. Pyrethrum is cited as useful not by itself but as at least one element in a mixture of insecticides. The Clarke fabric material is designed to be adhered to the blades of an electric fan so that the insecticide will be directed into the area ventilated by the fan.

In overview, although passive evaporation of insecticides, including pyrethroids, is known in the art, the nature of those materials has been such that the attention of the art generally has been directed to their application to closely restricted spaces or to the area in the immediate vicinity of the materials. Within that context, the art has focused on the need to provide for artificially extending the longevity of insect control by use of a slow release structure or regimen of some sort, or the like. Heat and not passive evaporation has been the predominant means to achieve practical distribution of insecticide throughout a large volume of air, and heated evaporation from a liquid reservoir has been the practical means of achieving protection over a multiplicity of days.

Summary of the Invention

The insect control article of the invention to control flying insects is summarized in that a substrate is impregnated with an active insect control ingredient that is available for passive evaporation. The active insect control ingredient is selected from the group consisting of transfluthrin, prallethrin, tefluthrin, esbiothrin, and combinations thereof. Preferably, the active insect control ingredient includes at least one of transfluthrin and tefluthrin, and most preferably the active control ingredient includes at least transfluthrin.

The method of the invention for controlling flying insects is summarized in that it includes the initial step of providing an insect control article having a substrate that is impregnated with an active insect control ingredient available for passive evaporation, wherein the active insect control ingredient is selected from the group consisting of transfluthrin, prallethrin, vaporthrin, tefluthrin, esbiothrin, DDVP, and combinations thereof. Preferably, the active insect control ingredient includes at least one of transfluthrin and tefluthrin, and most preferably the active control ingredient includes at least transfluthrin. The insect control article is then placed in an environment with air movement in such a manner that the substrate of the insect control article is exposed to the air movement. The active insect control ingredient impregnated within the substrate then is allowed to evaporate passively into the air.

Detailed Description of the Invention

As used in this specification, "insect control" of flying insects is defined as at least repelling and preferably rendering the flying insects moribund. "Passive evaporation" is the process by which an active insect control ingredient evaporates from a substrate into the atmosphere through molecular separation, without the application of thermal energy to the substrate, whether by burning the substrate, use of a heating element, or other means. "Molecular separation" shall be deemed achieved if particles of an active insect control ingredient cannot be detected by conventional light scattering counter techniques using an instrument such as the Climet Model CI-7300 Light Scattering Counter, made by Climet Instruments Company of Redlands, California. This instrument is capable of detecting airborne particles as small as 0.3 microns. "Effective amount" shall mean an amount sufficient to attain the desired purpose. A substrate shall be deemed to be "impregnated" with an active insect control ingredient if that ingredient is generally distributed within or on the material of the substrate in such a manner that the ingredient is directly held within or on the substrate and is supported thereby. An ingredient held within or borne by intervening carriers or delayed-release means such as microcapsules, particles primarily composed of materials other than the ingredient, plastic materials, or the like that are then distributed within a substrate shall not be considered to be "directly" held within or on the substrate. "Porous" and related terms shall be understood to describe not only materials literally having pores but also, without restriction, loose or open materials and other materials that are fibrous, reticulate, matted, or woven and through or into which fluids may pass.

The insect control article to control flying insects of the present invention falls within the class of insect control articles that include a substrate impregnated with an effective amount of an active insect control ingredient available for passive evaporation from the substrate. The substrate of the invention may be made of any material capable first of receiving and holding an active insect control ingredient and then of releasing it by passive evaporation. Suitable materials include, without

limitation, paper-board, open pore cellulosic materials, coiled corrugated paper, woven cloth and non-woven pads or felts of any suitable fiber, gels, absorbent solid-porous foams such as a reticulated, open cell polyurethane foam, and finely divided, channeled, or honeycombed structures molded of non-porous plastics. Depending on the context within which the insect control article of the invention is to be used, either coiled corrugated paper or a piece of flat, open-surfaced paper presently is preferred, although the use of the molded plastic structures referred to has advantages of manufacturing convenience.

As is noted in the discussion of Background Art, above, the art teaches the use of various insecticides for passive evaporation for the control of insects, for the most part although not exclusively in drawers, closets, tents, and other very limited spaces or as insecticidal barriers intended to affect insects in close proximity to a treated carrier strip or the like. This teaching of the art would lead one to expect equally successful flying insect control from the passive evaporation of pyrethrum, sometimes microencapsulated (e.g. Landsman, Clarke, Whitcomb, Chadwick et al.), pyrethroids in general (e.g. generic references in Ensing, Ronning, et al., and elsewhere), and particular pyrethroids, such as permethrin (Samson et al., U.S. Pat. No. 5,189,287), vaporthrin, permethrin, bioresmethrin, bioallethrin, kadethrin, decis, cyfluthrin, and fenfluthrin (Kauth et al.) and permethrin, deltamethrin, cyhalothrin, and cypermethrin (Chadwick et al.). These examples are intended to be illustrative and not exhaustive.

To the limited extent that the art is suggestive or predictive of success, all of these insecticides would appear equally attractive, along with apparently equally attractive non-pyrethroid insecticides (Whitcomb, Clarke, etc.). However, in research discussed below, the present inventors have found that in fact, with the possible exception of vaporthrin and dichlovos (DDVP), the examples of these materials that were tested were not sufficiently effective to be employed successfully for the practical control of mosquitoes, for example, in a space as large as a typical sleeping room or in the open area surrounding a picnic table or patio.

"Practical control" shall be understood to require, at the minimum, the ability of a substantially planar substrate, such as a flat paper or cloth, not larger than about 645 cm^2 (100 in^2) to achieve at least 50% repellency of mosquitoes within a volume

of air not less than 27 m^3 within 20 minutes when that substrate is impregnated with not more than a gram of insect control active ingredient and when the substrate is suspended directly in the airflow of a common 51 cm (20 inch) house fan, in accordance with the fan chamber test protocol, described below. This shall be referred to herein as the "minimum practical control standard."

Preferred is the level of practical control demonstrated by the ability of a standard high air-transmitting substrate, described below, impregnated with not more than 1 gram of insect control active ingredient to achieve that same repellency effect within 30 minutes when subjected to an airflow through the substrate of not more than 0.06 m^3 per minute. The standard high air-transmitting substrate by which this level of practical control may be determined is a 0.5 cm thick, 4.5 cm diameter coil of common corrugated cardboard, with the channels of the corrugation presented endwardly to the direction of air flow. This shall be referred to herein as the "preferred practical control standard."

It has now been discovered that unexpected and favorable results are achieved in the practical control of flying insects when the active insect control ingredient used in the insect control article of the invention is selected from the group consisting of the pyrethroids transfluthrin, prallethrin, vaporthrin, tefluthrin, and esbiothrin, or the non-pyrethroid DDVP and combinations thereof. To most easily achieve the minimum practical control standard and especially when the preferred practical control standard is to be achieved, it is preferred that the active insect control ingredient include at least one of transfluthrin and tefluthrin. Of those two, transfluthrin is preferred as less irritating and otherwise objectionable for use in the presence of humans.

The particular active insect control ingredients disclosed now have been found to be sufficiently effective as insect control active ingredients that their airborne concentration is sufficient to achieve control of flying insects and, in particular, of mosquitoes and flies, when these ingredients are delivered by passive evaporation into the air when the substrate of the invention is placed in an environment with air movement at air temperatures between 10°C and 45°C. At the same time, these selected materials' vapor pressures at those temperatures are low enough that it is

practical and economical to use them as active ingredients on substrates of a convenient size in amounts sufficient to achieve such insect controlling concentrations over time periods long enough to be sufficient to protect a room overnight or even for a series of nights. A useful commercial goal is to achieve protection for at least thirty consecutive nights of use. By use of the active ingredients of the invention, this goal is within practical reach.

Any effective conventional method may be used to impregnate the substrate with the active insect control ingredient. Typically, the substrate is impregnated with the active insect control ingredient by dissolving an appropriate amount of the active insect control ingredient in a solvent, thoroughly wetting the substrate with the solvent, and then drying the substrate to evaporate the solvent contained in the substrate and leave the substrate impregnated with the active insect control ingredient. If air transmission through the substrate is desired, the substrate preferably is not coated or printed with a layer of the active insect control ingredient. This is because the coated or printed surface is likely to inhibit air movement through the substrate, thereby decreasing the rate of passive evaporation of the active insect control ingredient. However, coating or printing a substrate may be effective when air is to merely pass over and not through the substrate.

The amount of active insect control ingredient per square centimeter of substrate necessary to be effective to control flying insects in an insect control article of the invention will depend upon the overall size of the substrate used, the rate of air movement over or through the substrate, and the longevity of effectiveness desired. Preferably, the active insect control ingredient is present approximately in an amount of from 0.1 to 10 milligrams per square centimeter of macro surface area, when conventional, essentially planar substrates such as papers, corrugated cardboard coils, or felts are used. For the purpose of this discussion, "macro surface area" means the surface area as measured with a ruler or similar device, as opposed to the micro surface area as measured taking into account porosity, surface convolutions, finely divided materials, and the like. A very porous or finely divided substrate may hold additional amounts of active insect control ingredient in a given macro surface area, allowing for use of a smaller macro surface area of substrate. However, the preferred

CLAIMS:

1. An insect control article to control flying insects, comprising a substrate that is impregnated with an active insect control ingredient freely available for passive evaporation, wherein the active insect control ingredient is selected from the group consisting of transfluthrin, prallethrin, tefluthrin, esbiothrin, and combinations thereof.

2. The insect control article of Claim 1, wherein the substrate is selected from the group consisting of paper-board, open pore cellulosic materials, coiled corrugated paper, woven cloth and non-woven pads or felts of any suitable fiber, gels, absorbent solid-porous foams, and finely divided, channeled, or honeycombed structures molded of non-porous plastics.

3. The insect control article of Claim 1, wherein the active insect control ingredient is impregnated within the substrate in an amount of from 0.1 to 10 milligrams per square centimeter of the substrate macro surface area.

4. The insect control article of Claim 1, wherein the insect control article includes hanger means for hanging the impregnated substrate in a suitable environment for use.

5. The insect control article of Claim 1, wherein the article includes attaching means for attaching the impregnated substrate to means for circulating air at a selected location not in contact with any fan blades thereof.

6. The insect control article of Claim 1, wherein the active insect control ingredient includes at least one of transfluthrin and tefluthrin.

7. The insect control article of Claim 1, wherein the active insect control ingredient includes transfluthrin.

8. A method for controlling flying insects comprising the steps of :

a. providing an insect control article having a substrate that is impregnated with an active insect control ingredient freely available for passive evaporation, wherein the active insect control ingredient is selected from the group consisting of transfluthrin, prallethrin, vaporthrin, tefluthrin, DDVP, and combinations thereof;

b. placing the insect control article in an environment with air movement and exposing the substrate of the insect control article thereto; and

c. allowing the active insect control ingredient impregnated within the substrate to passively evaporate into the air.

9. The method for controlling flying insects of Claim 8, wherein the substrate of the insect control article is selected from the group consisting of paper-board, open pore cellulosic materials, coiled corrugated paper, woven cloth and non-woven pads or felts of any suitable fiber, gels, absorbent solid-porous foams, and finely divided, channeled, or honeycombed structures molded of non-porous plastics.

10. The method for controlling flying insects of Claim 8, wherein the active insect control ingredient of the insect control article is impregnated within the substrate in an amount of from 0.1 to 10 milligrams per square centimeter of the substrate macro surface area.

11. The method for controlling flying insects of Claim 8, wherein the insect control article includes hanger means for hanging the impregnated substrate in a suitable environment for use.

12. The method for controlling flying insects of Claim 8, wherein the insect control article includes attaching means for attaching the impregnated substrate to means for circulating air, and the step of placing the insect control article in an environment with air movement and exposing the substrate of the insect control article

thereto includes the step of attaching the insect control article to means for circulating air at a selected location not in contact with any fan blades thereof.

13. The method for controlling flying insects of Claim 8, wherein the insect active control ingredient includes at least one of transfluthrin and tefluthrin.

14. The method for controlling flying insects of Claim 8, wherein the insect active control ingredient includes transfluthrin.

amounts of the active insect control ingredients identified above per square centimeter of macro surface area result in a substrate of a size convenient to handle and otherwise deal with when the material of the substrate is common paper, felted and woven materials, and the like, and when substantial insect control within a typical sleeping room, for example, is to be achieved for at least eight hours by placing the substrate in the air flow generated by conventional electric cooling fans. Disks of paper approximately 15 to 25 cm in diameter or approximately 25 cm square pieces of felted or woven cloth have proved convenient sizes for use with common, free-standing house fans, such as the square, 51 cm (20 inch) box fans conventionally available for household use. However, the invention is not limited to these precise sizes.

The insect control article of the present invention can be placed in any environment where there is air movement that will pass through or over the impregnated substrate, thereby allowing the active insect control ingredient to continuously passively evaporate into the atmosphere for an extended period of time. Suitable environments include enclosed rooms as well as volumes of open air space, such as patios, the area around a picnic table, and the like, with air movement provided by fans, air circulating systems, open windows, or the like.

In one embodiment of the present invention, the insect control article includes hanger means for suspending the impregnated substrate in a suitable environment provided with air movement to allow the active insect control ingredient to passively evaporate into the atmosphere. In another embodiment, the article includes attachment means for attaching the impregnated substrate to means for circulating air. Examples of such means for circulating air include but are not limited to conventional room fans. Examples of suitable hanger or attachment means for both embodiments include hooks, strings, mechanical clips and fasteners, adhesives, and the like. Any such means provided on the substrate should not substantially block the passage of air through or over the substrate.

When the impregnated substrate is attached to a fan, the impregnated substrate preferably is attached at a point separated from the fan blades sufficiently to allow the air stream to pass from the blades and then through or over the substrate, thereby facilitating the passive evaporation of the active insect control ingredient from the

substrate. Attachment directly to the surface of the fan blades is not deemed satisfactory, because the air stream may not pass sufficiently through or over the substrate to achieve adequate insect control, an effect demonstrated in the Examples, below.

The method of the invention for controlling flying insects includes, as a first step, providing an insect control article to control flying insects that includes a substrate that is impregnated with an active insect control ingredient selected from the group consisting of transfluthrin, prallethrin, vaporthrin, tefluthrin, esbiothrin, DDVP, and combinations thereof. The insect control article is then placed in an environment with air movement, and the substrate of the insect control article is exposed to the moving air. Preferably, the substrate is located at a selected distance from any fan or equivalent means for moving air that is being used to create air movement. The active insect control ingredient with which the substrate is impregnated is then allowed to passively evaporate into the air.

The following non-limiting examples demonstrate the insect control article and method of the invention. The invention should not be understood as being limited to these particular examples, which are only illustrative.

EXAMPLE 1: Olfactometer Tests

The olfactometer test provides a means for measuring the effect of a volatile active ingredient on flying insects under precisely controlled conditions. Mosquitoes are used as the test insect. In this and the other Examples, below, the mosquitoes were *A. aegypti*. The olfactometer used for the olfactory tests described below generates two uniform, laminar flow air streams. These air streams consist of a target air stream superimposed upon and centered within a carrier air stream.

The olfactometer provides a square testing surface with an area of 929 cm^2. The testing area consists of a circular target area of 42 cm^2 centered on a square background surface area of 887 cm^2. In the tests described, a 200 ml/min flow of carbon dioxide was introduced into the carrier air stream to activate the mosquitoes. The carrier air stream contained 65% to 70% relative humidity and had a temperature

of about 25°C. The flow rate of the carrier air stream was 300 to 350 liters/min. The target air stream contained 72% to 78% relative humidity and had a temperature of 33° to 35°C. Elevated temperature and humidity at the level described for the target air stream are known to be attractive to mosquitoes. The flow rate of the target air stream was 12 liters/min.

The olfactometer has an air flow duct through which the carrier air flow stream passes. A glass cylinder having one closed and one open end, an internal diameter of 6 cm and a depth of 14 cm is located within the air flow duct, with the longitudinal axis of the glass cylinder oriented parallel to the direction of flow of the carrier air flow stream, with the open end of the cylinder pointing down stream. The target air stream is generated by releasing a flow of temperature and humidity conditioned air into the glass cylinder near its closed end, from which point the air flows the length of the glass cylinder to exit at its open end.

Active insect control ingredients to be tested are impregnated in a filter paper test substrate (Grade 615 from VWR Scientific Inc.) having a length of 28 cm and a width of 10 cm. The filter paper test substrate is folded into a fluted cylinder and inserted coaxially within the glass cylinder to rest at a location between the point where the air is released into the glass cylinder and the open end of the glass cylinder. By this arrangement, the target air stream is caused to pass over the surface of the filter paper test substrate so that any active insect control ingredient present in the filter paper test substrate may evaporate into the target air stream before the target air stream exits the glass cylinder to continue, embedded within the flow of the carrier air stream.

Cubic test cages having 30.5 cm edges were constructed of four glass panels, with two opposing sides of the cubic test cages being open. One open side was designated the test panel and was covered with an airflow-transmitting, mosquito-retaining mesh. The opposite open side was covered with a closeable sleeve made of a tubular, open-weave, mosquito-retaining fabric well known in the art as "stockinet." For any given test, the test cage normally contained from 250 to 350 female mosquitoes.

The test cage was placed in the air stream with the test panel facing and perpendicular to the direction of flow of the air streams of the olfactometer. In order to allow the mosquitoes to become activated by the carbon dioxide of the air streams, the test cage first was placed in the olfactometer for an initial 5 minute conditioning exposure. The test cage then was removed from the olfactometer for 3 minutes and then placed back in the olfactometer for a second 5 minute conditioning exposure. The test cage was again removed from the olfactometer for 3 minutes, during which time a control filter paper test substrate was inserted within the glass cylinder of the olfactometer. The test cage was then placed on the olfactometer for a 10 minute control exposure. The same procedure was repeated, using each time a filter paper test substrate impregnated with increasing amounts of active insect control ingredient.

All mosquito activity was recorded on video tape, and mosquitoes were observed to be either attracted to or repelled from the target area to varying degrees. Following the first three minutes of each exposure, populations of mosquitoes present on the target area were counted at 15 second intervals. Population means were then calculated, and these means were used to calculate response levels. Dose levels corresponding to response levels at which 90% of the control population was driven from the target by the active insect control ingredient (RD_{90}) were calculated using the dose-response data. To facilitate comparison, a weight index was calculated for each substance tested. The weight index is defined as the ratio of the weight of the active insect control ingredient versus the weight of DEET (N,N-diethyl-meta-toluamide) that is necessary for each material to achieve a repellent dose of 90% when applied to a selected amount of substrate in a moving air stream at a standard air temperature of 25 ° C.

The RD_{90} data in milligrams/filter paper test substrate and the resultant weight indices for the active insect control ingredients are as follows, listed in order of increasing weight index:

ACTIVE INSECT CONTROL INGREDIENT	mg to reach RD_{50}	WEIGHT INDEX
Transfluthrin	0.57	0.0059
Tefluthrin	1.3	0.014
Esbiothrin	4.5	0.047
Vaporthrin	5.3	0.058
Bioallethrin	5.5	0.058
Prallethrin	5.5	0.058
Pentecychlothrin (Zhong X1)	8.1	0.085
Allethrin (90% active)	8.0	0.085
Pyrethrum Extract (51% active)	30	0.32
DDVP	40	0.42
DEET	95	1.00
Propoxur (Baygon)	>120	>1.26
Citronella	475	5.0
Cyphenothrin	~1000	~10.5
Permethrin	>1000	>10.5
Cyfluthrin	>1000	>10.5

Differences in effective repellency per gram of active ingredient can be observed in the data provided, above, that vary by many orders of magnitude. Olfactometer tests of active insect control ingredients can be conducted at less expense and more quickly than other tests and therefore provide a useful first screening technique. Nevertheless, the conditions of olfactometer tests are not the same as use conditions for practical flying insect control. Thus, while from the results, above, transfluthrin, tefluthrin, vaporthrin, bioallethrin, prallethrin, and pentecychlothrin all would appear to be comparable candidates for use in practical flying insect control, tests that better mimic actual use show that not to be the case, emphasizing the fact that the usefulness of any given active ingredient cannot be predicted from past uses under similar but nevertheless distinct conditions.

US005252387A

United States Patent [19]

Samson et al.

[11] Patent Number: 5,252,387

[45] Date of Patent: Oct. 12, 1993

[54] **FABRICS WITH INSECT REPELLENT AND A BARRIER**

[75] Inventors: Richard D. Samson; James M. McKinney, both of North Augusta; John Russell, Aiken, all of S.C.

[73] Assignee: Graniteville Company, Graniteville, S.C.

[21] Appl. No.: 11,887

[22] Filed: Feb. 1, 1993

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 678,061, Apr. 1, 1991, Pat. No. 5,198,287.

[51] Int. Cl.[5] A01N 25/34; B32B 33/00; E04H 15/54

[52] U.S. Cl. 428/248; 8/115.7; 8/182; 8/115.59; 135/115; 424/403; 428/252; 428/264; 428/265; 428/907

[58] Field of Search 8/115.7, 182, 115.59; 135/115; 424/403; 428/248, 252, 264, 265, 907

[56] References Cited

U.S. PATENT DOCUMENTS

3,769,060	10/1973	Ida et al.	428/907
3,859,121	1/1975	Yeadon	428/907
3,935,034	11/1976	Strobel	514/159
4,574,286	6/1986	McKinney	428/252
4,755,982	8/1988	Running et al.	424/402
4,833,006	5/1989	McKinney et al.	428/257
5,019,298	2/1992	McNally et al.	427/322

Primary Examiner—James C. Cannon
Attorney, Agent, or Firm—Clifton Ted Hunt

[57] **ABSTRACT**

An insect repellent fabric has a coating containing permethrin and a plasticizer, and a barrier covers the coating to protect the permethrin from degradation by ultraviolet light and oxygen. The barrier may be an acrylic coating or film, aluminum foil, a urethane coating or film, or an outer fabric barrier such as an awning or a tent fly.

9 Claims, 2 Drawing Sheets

Sample 5 is a control which had no barrier coating or film and no weathering.

All of the samples that were weathered were exposed in the weatherometer with the active permethrin treated side away from the weather.

Test Series II

Five tent fabric samples, numbered 10 through 14, were tested.

Samples 10 through 12 contained permethrin and were weathered for 100 hours;

Sample 10 was backed with flourex/polyethylene;

Sample 11 was backed with aluminum foil;

Sample 13 contained permethrin, but was not weathered;

Sample 14 did not contain permethrin and was not weathered.

The test results are set forth in the following table:

TABLE I

Mean knockdown of female *Aedes aegypti* exposed to test fabric treated with permethrin or permethrin with acrylic or foil backing.

Permethrin Fabric Code	Exposure Time	Hours Weathered	% KD 15 Min.	% KD 60 Min.	% KD 120 Min.
		Series I A (average of 5 tests)			
4	15 min.	500	0	0	NA
3	15 min.	500	0	0	NA
2	15 min.	500	0	16	NA
1	15 min.	500	0	0	NA
5	15 min.	0	0	90	NA
		Series I B (average of 1 test)			
4	30 min.	500	0	0	NA
3	30 min.	500	0	0	NA
2	30 min.	500	0	80	NA
1	30 min.	500	0	0	NA
5	30 min.	0	60	100	NA
		Series II A (average of 2 tests)			
10	15 min.	100	0	30	NA
11	15 min.	100	5.5	25	NA
12	15 min.	100	0	20	NA
13	15 min.	0	10	100	NA
14 (CK)	15 min.	0	0	0	NA
		Series II B (average of 2 tests)			
10	120 min.	100	0	80	100
11	120 min.	100	0	70	100
12	120 min.	100	0	30	100
13	120 min.	0	0	90	100
14 (CK)	120 min.	0	0	0	0

For Series I, the data suggests that the availability of permethrin on the treated surface was insufficient to cause quick knockdown (within one hour) of mosquitoes in tests with exposure times of 15 and 30 minutes.

In Series II, a longer exposure time (120 minutes) increased the overall percentage of knockdown after 60 minutes. In Series IIB a 120 minute knockdown count was added to determine if an effect would be observed with additional lapsed time.

Based on these results, it can be assumed that some additional knockdown may have occurred in Series I and II after 120 minutes.

It is apparent that weathered samples with barrier against mobilized permethrin migration to outside of fabric give significant gains in efficacy.

In accordance with the patent statutes, preferred modes of practicing the invention have been set forth. However, it will be apparent to those skilled in the art that many other modifications can be achieved without departing from the invention herein described and claimed.

We claim:

1. A coated tent fabric having a fabric substrate with a coated outer surface normally exposed to degrading elements of the atmosphere and a coated inner surface normally shielded by the fabric substrate from the degrading elements of the atmosphere, the coating on the outer and inner surfaces of said fabric substrate each containing a polymeric binder, flame retardant chemicals and water repellent chemicals and the coating on the inner surface of the fabric substrate containing permethrin as an insect repellent, wherein the improvement comprises a barrier over the coated outer surface of the fabric substrate, whereby the barrier protects the fabric substrate from ultraviolet light and oxygen and supplements the fabric substrate in protecting the permethrin from degradation.

2. A coated tent fabric according to claim 1 wherein the barrier is an acrylic coating or film.

3. A coated tent fabric according to claim 1 wherein the barrier is aluminum foil.

4. A coated tent fabric according to claim 1 wherein the barrier is urethane coating or film.

5. A coated tent fabric according to claim 1 wherein the barrier is a tent fly.

6. A fabric for wearing apparel, said fabric having a coating containing permethrin and a polymeric binder, wherein the improvement comprises a barrier covering a surface of the fabric intended to be disposed adjacent to the wearer's skin to protect the skin of the wearer of the fabric from permethrin migration.

7. A fabric according to claim 6 wherein the barrier is aluminum foil.

8. A fabric according to claim 6 wherein the barrier is an acrylic coating or film.

9. A fabric according to claim 6 wherein the barrier is a urethane coating or film.

* * * * *

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIVISIÓN DE NUEVAS CREACIONES

2020
Bogotá, D.C.,

Doctor (señor):
Alicia Lioreda Ricaurte

Oficio Nº 3324

REFERENCIA:	Radicación No.	00-41505.
	Trámite	002.
	Evento	001.
	Actuación	430.
	Folios	004.

Realizado el examen de patentabilidad de la presente solicitud según el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, "**art. 45.-** *Si la oficina nacional competente encontrara que la invención no es patentable o que no cumple con alguno de los requisitos establecidos en esta Decisión para la concesión de la patente, lo notificará al solicitante. Este deberá responder a la notificación dentro del plazo de sesenta días contados a partir de la fecha de la notificación. Este plazo podrá ser prorrogado por una sola vez por un período de treinta días adicionales.*
Cuando la oficina nacional competente estimara que ello es necesario para los fines del examen de patentabilidad, podrá notificar al solicitante dos o más veces conforme al párrafo precedente.
Si el solicitante no respondiera a la notificación dentro del plazo señalado, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, la oficina nacional competente denegará la patente." se notifica el siguiente Concepto Técnico:

1.DOCUMENTOS ESTUDIADOS

- Para el presente estudio se tuvo en cuenta el capítulo descriptivo, folios 5 a 89 presentados originalmente, folios 235 a 256 y reivindicaciones 1 a 21, folios 257 a 262 anexadas como respuesta al requerimiento formal; lo cual fue aceptado dado que éste no implica una ampliación de la solicitud originalmente presentada conforme lo establece el artículo 34 de la decisión 486 de la Comisión de la Comunidad Andina "**art. 34.-** *El solicitante de una patente podrá pedir que se modifique la solicitud en cualquier momento del trámite. La modificación no podrá implicar una ampliación de la protección que correspondería a la divulgación contenida en la solicitud inicial.*

Del mismo modo, se podrá pedir la corrección de cualquier error material.".

- Se acepta reivindicación de prioridad US 09/326.446 del 4 de junio de 1999.

2.OBJETO DE LA INVENCIÓN

- Título: **Tira repelente de insectos que está recubierta con un ingrediente activo para evaporación pasiva.**

- La invención consiste de un artículo para control de insectos voladores que comprende un sustrato no absorbente que es recubierto con 2,3,5,6-tetra fluorobencil(1R,3S)-3-(2,2-diclorovinil)-2,2-dimetilciclopropanocarboxilato (transfluthrin) ó 2,3,5,6-tetrafluoro-4-metilbencil(Z)-(1RS,3RS)-3-(2-cloro-3,3,3-trifluoroprop-1-enil)-2,2-dimetilciclopropanocarboxilato (tefluthrin) ó combinaciones de ellos en una densidad de 2,4μg/cm^2 a 72μg/cm^2. En la que la solubilidad del ingrediente activo en el sustrato no absorbente es de

1μg/cm^2 a 40μg/cm^2 de macroárea superficial de sustrato. Donde el sustrato puede ser seleccionado de un película polimérica, aluminio y vidrio.

- El método para controlar insectos voladores que comprende las etapas de: a) proveer un artículo para el control de insectos; b) colocarlo en un medio ambiente con movimiento de aire natural, exponerlo al mismo y c) permitir la evaporación pasiva en el aire a una velocidad de 0,2 mg/h.

- El problema técnico expuesto en esta solicitud es la necesidad de suministrar un producto para controlar insectos en espacios abiertos por evaporación pasiva.

- La clasificación según la IPC correspondiente al objeto de la solicitud es A01N25/18.

3.CLARIDAD DE LA SOLICITUD

De acuerdo a la Decisión 486 de la Comisión de la Comunidad Andina en su Artículo 30.- "*Las reivindicaciones definirán la materia que se desea proteger mediante la patente. Deben ser claras y concisas y estar enteramente sustentadas por la descripción*", en este sentido se anota que no obstante el solicitante envió un nuevo capítulo reivindicatorio, la presente solicitud le falta claridad puesto que:

- La reivindicación 1 referente a un artículo para el control de insectos voladores que comprende un sustrato no absorbente no precisa la naturaleza química del mismo sino que se limita a indicar las propiedades de solubilidad del ingrediente activo en el mismo. Es de anotar que este tipo de características podrían ser reivindicadas en las cláusulas dependientes mientras que en la independiente es preciso decir que dicho sustrato no absorbente consiste de una película polimérica, de aluminio o vidrio.

6. DETERMINACIÓN DEL ESTADO DE LATÉCNICA

- La fecha a partir de la cual se realizó la búsqueda de anterioridades corresponde al 3 de junio de 1999.
- Con base a lo anterior y la definición dada en el art. 16.- "Una invención se considerará nueva cuando no está comprendida en el estado de la técnica.
  El estado de la técnica comprenderá todo lo que haya sido accesible al público por una descripción escrita u oral, utilización, comercialización o cualquier otro medio antes de la fecha de presentación de la solicitud de patente o, en su caso, de la prioridad reconocida.
  Sólo para el efecto de la determinación de la novedad, también se considerará dentro del estado de la técnica, el contenido de una solicitud de patente en trámite ante la oficina nacional competente, cuya fecha de presentación o de prioridad fuese anterior a la fecha de presentación o de prioridad de la solicitud de patente que se estuviese examinando, siempre que dicho contenido esté incluido en la solicitud de fecha anterior cuando ella se publique o hubiese transcurrido el plazo previsto en el artículo 40." , se realizó la búsqueda de anterioridades en los archivos con que cuenta esta Oficina y se encontró el siguiente documento relacionado con la materia de la presente solicitud:

N°	DOCUMENTO	TÍTULO	FECHA DE PUBLICACIÓN
D1	EP 0916262	Cockroach repellent	1999-05-19
D2	WO 96/32843	Insecticide impregnated article for the control of flying insects	1996-10-24
—	—	—	—

4.EVALUACIÓN DE LOS REQUISITOS DE PATENTABILIDAD

El artículo 14 de la Decisión 486 de la Comisión de la Comunidad Andina establece que: "Los Países Miembros otorgarán patentes para las invenciones, sean de producto o de procedimiento, en todos los campos de la tecnología , siempre que sean nuevas, tengan nivel inventivo y sean susceptibles de aplicación industrial."

En cumplimiento del artículo 14 de la Decisión 486, se procedió a evaluar los requisitos de novedad, nivel inventivo y aplicación industrial con el fin de establecer la patentabilidad de la invención reivindicada en la solicitud en estudio.

4.1Evaluación del NIVEL INVENTIVO

De acuerdo al art. 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.*", se conceptúa:

D1 enseña una formulación de un repelente de insecto que comprende un componente activo como el transflutrin soportado en una lámina de resina sintética (por ej. polietileno, polietileno de enlace cruzado, polipropileno, cloruro de polivinilideno, poliéster, entre otros). Donde la cantidad de transflutrin soportado sobre la lámina es de 0,1$\mu g/cm^2$ a 500$\mu g/cm^2$ (0,01g a 50g por 1m^2). El repelente es incorporado en el material de soporte por esparcimiento o impregnación.

D2 revela un artículo para el control de insectos voladores que contiene un sustrato que es impregnado con un ingrediente activo que está disponible por evaporación pasiva. El ingrediente activo puede ser seleccionado de transflutrin o teflutrin y combinaciones de éstos. También divulga el método para el control de insectos voladores que comprende suministrar el producto para el control de dichos insectos diseñado para evaporación pasiva, colocarlo y exponerlo en un ambiente con movimiento de aire y finalmente permitir la evaporación pasiva en el aire.

Como se puede observar en las anterioridades D1 y D2 se conocen los artículos o dispositivos que permitan la evaporación pasiva de componentes activos en repeler insectos, en los que ya se ha ensayado el hecho de soportar el transflutrin y el teflutrin en diversos materiales. A partir de las enseñanzas de D1 se puede deducir que en 1998, la formulación del transflutrin en resinas sintéticas como la revelada en la descripción de esta anterioridad suministraba una alta actividad como repelente de cucarachas.

La materia divulgada en D1 es interesante para la persona medianamente versada en el oficio correspondiente dado que allí se utilizan películas poliméricas que permitían la evaporación pasiva y que coinciden con algunas de las seleccionadas para el artículo que se reclama en la presente solicitud.

D2 pone en evidencia un artículo insecticida para el control de los insectos voladores en el aire de una habitación o el volumen de aire en la vecindad de una persona sentada en un patio, en una mesa campestre o algo parecido. Dice esta anterioridad en la parte de antecedentes que en el estado del arte tradicionalmente se han utilizado artículos y dispositivos que permitan la evaporación pasiva de los insecticidas y describen un gran número de autores con sus correspondientes trabajos; entre ellos se puede apreciar la publicación US5.252.387 en la que el insecticida piretroide se encuentra soportado sobre una lámina de aluminio. También describe el dispositivo de la publicación US 4.765.982 que se soporta en materiales poliméricos como el polietileno, poliéster, nylon, alcohol polivinílico, poliacrilato, metacrilatos y acrilonitrilo.

Con toda la información suministrada por estas dos anterioridades, se considera que la persona medianamente versada en la técnica correspondiente junto con su conocimiento de conjunto tiene las herramientas necesarias para llegar al artículo que se reivindica en las cláusulas 1 a 12 en las que se define un artículo que comprende un insecticida impregnado en un soporte que puede ser seleccionado de una película polimérica, aluminio o vidrio.

Vale decir que D1 publicó la cantidad soportada del ingrediente activo que se solapa con la solubilidad del transflutrin o teflutrin en el sustrato; hecho que permite deducir la condición reivindicada y que permite derivar de manera evidente la formulación que se reclama. Es bien claro, para cualquier persona con los mínimos conocimientos en este arte que a partir de ensayos sistemáticos llegar a las dosis efectivas en las que debe estar presente el principio activo. De esta forma se considera que el artículo de la presente solicitud no tendría nivel inventivo.

En cuanto al método de control de insectos de las cláusulas 13 a 21, es de anotar que tal como está reivindicado no se diferencia de los demás métodos de aplicación de un insecticida cual fuere aplicarlo en el lugar donde se necesita. Lo anterior, se confirma y se evidencia de la lectura de D2 por lo que la secuencia de etapas descritas no constituyen un salto en la formulación de la regla técnica y mucho menos una actividad creadora del hombre que amerite el privilegio solicitado. En consecuencia, estas reivindicaciones no tendrían nivel inventivo.

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta días contados a partir de la fecha de la notificación de la presente comunicación. **En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente**.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2,literal e), del capítulo quinto del título primero de la circular única No. 10 de 2001.

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

El anterior requerimiento fue notificado por fijación en lista, de fecha 29 MAR 2006

CONCEPTO TÉCNICO N° 325 (2006-03-03)	EXAMINADOR TÉCNICO CÓDIGO 202001	EXAMINADOR JURÍDIC CÓDIGO

286

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

RADICACIÓN: 0-41505 EDICTO No. 10634

LA SECRETARÍA GENERAL AD-HOC
HACE SABER:

Que esta Superintendencia profirió Resolución No. 17221 de 29-JUN-2006. Que el contenido de la parte resolutiva es como sigue: El Superintendente de Industria y Comercio.

RESUELVE

ARTICULO PRIMERO: Negar el privilegio de patente de invención para la solicitud correspondiente a "TIRA REPELENTE DE INSECTOS QUE ESTA RECUBIERTA CON UN INGREDIENTE ACTIVO PARA EVAPORACION PASIVA".

ARTICULO SEGUNDO: Notificar personalmente el contenido de la presente resolución a la doctora Alicia Lloreda Ricaurte, o a quien haga sus veces, en su calidad de apoderada de S.C. Johnson & Son, Inc., entregándole copia de la misma, advirtiéndole que contra ella procede el recurso de reposición interpuesto ante el Superintendente de Industria y Comercio, al momento de la notificación o dentro de los 5 días hábiles siguientes a ella.

NOTIFÍQUESE Y CUMPLASE
Dada en Bogotá, D.C., a los 29 JUN. 2006

EL SUPERINTENDENTE DE INDUSTRIA Y COMERCIO,

JAIME RUBIO ESCOBAR

Para notificar a los interesados, se fija el presente EDICTO en lugar visible al público en la SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO, por el término de (10) diez días hábiles contados a partir de las 8:30 a.m. de hoy.

Secretaria General Ad-Hoc 14-JUL-2006 Este edicto se desfija hoy 28-JUL-2006 a las cinco (5:00 p.m.)
Secretaria General Ad-Hoc
EDICTO No. 10634