69067/87

FORM 1
REGULATION 9

596147

COMMONWEALTH OF AUSTRALIA

PATENTS ACT 1952-1973

APPLICATION FOR A PATENT

APPLICATION ACCEPTED AND AMENDMENTS ALLOWED 21-2-90

I/We WERNER & MERTZ GmbH

of Ingelheimstrasse 1-3, D-6500 MAINZ,
FEDERAL REPUBLIC OF GERMANY

hereby apply for the grant of a Patent for an invention entitled:

AGENT FOR CONTROLLING HOUSE DUST MITES TOGETHER WITH OTHER SMALL PESTS, AND/OR FUNGI, AND ITS USE

which is described in the accompanying complete specification. This Application is a Convention Application and is based on the Application(s) numbered: P 36 05 287.6 for a Patent or similar protection made in Federal Republic of Germany on 19 February 1986.

My/Our address for service is:

GRIFFITH HASSEL & FRAZER
71 YORK STREET
SYDNEY N.S.W. 2000
AUSTRALIA

DATED this 19th day of February, 1987.

WERNER & MERTZ GmbH

By his/their Patent Attorneys

GRIFFITH HASSEL & FRAZER

TO: THE COMMISSIONER OF PATENTS
COMMONWEALTH OF AUSTRALIA

3549A:rk

COMMONWEALTH OF AUSTRALIA
PATENTS ACT 1952

DECLARATION IN SUPPORT OF AN APPLICATION FOR A PATENT

In support of an Application made by: WERNER & MERTZ GmbH

for a patent for an invention entitled:
AGENT FOR CONTROLLING HOUSE DUST MITES TOGETHER WITH OTHER SMALL PESTS, AND/OR FUNGI, AND ITS USE

I, 1. Dr. Heimold Batka 2. Karl Heinz Paul

of, WERNER & MERTZ GMBH
Ingelheimstrasse 1-3, D-6500 Mainz (Federal Republic of Germany)

do solemnly and sincerely declare as follows:

1. I am authorised by the above mentioned applicant for the patent to make this Declaration on its behalf.

2. The name and address of each actual inventor of the invention is as follows:

Edelbert BISCHOFF and Gert WETTER

of Leibnizstrasse 52, D-6719 Kirchheim-Bolanden, West Germany and Im Alten Rathaus, Worrstadt-Rommersheim, West Germany, respectively

and the fact(s) upon which the applicant is entitled to make this application are as follows:

The applicant is the assignee of the said invention from the said inventors

7/4/87

3. The basic application(s) as defined by Section 141 of the Act was (were) made as follows:

Country Federal Republic of Germany on 19 February 1986
in the name(s) Werner & Mertz GmbH

4. The basic application(s) referred to in the preceding paragraph of this Declaration was (were) the first application(s) made in a Convention country in respect of the invention the subject of this application.

Declared at Mainz this 12th day of March 1987.

Signed: Dr. Batka ppa. Paul

Position: (Manager) Procurator

GRIFFITH HASSEL & FRAZER, SYDNEY, AUSTRALIA

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(19) AUSTRALIAN PATENT OFFICE (10) Acceptance No. 596147

(54) Title
COMPOSITION FOR CONTROL OF HOUSEMITES AND FUNGI, COMPRISING AN ACARICIDE, AND INSECTICIDE AND/OR FUNGICIDE

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(56) Prior Art Documents
AU 28063/84 A01N 53/00; 37/10; 33/04

(57) Claim

1. An agent for controlling house dust mites which also deals with other small pests and/or fungi occuring in the house, comprising

I. an active substance combination of

(a) 1 to 20% by weight of an acaricidal active substance selected from the group comprising benzyl benzoate, benzyl salicylate, phenyl benzoate, phenyl salicylate, piperonyl isobutyrate and mixed simple phthalates, such as, for example, dimethyl phthalate, diethyl phthalate, dibutyl phthalate, dioctyl phthalate, diisodecyl phthalate, diallyl phthalate or benzyl butyl phthalate,

with 1 to 20% by weight of an insecticidal

active substance selected from among insecticides based on pyrethrins or pyrethrum derivatives, where appropriate together with conventional synergists, or

(b) 1 to 20% by weight of an acaricidal active substance as above with

0.1 to 10% by weight of a fungicidal active substance selected from fungicides based on organic acids, thiabendazole or antibiotics, or

(c) 1 to 20% by weight of an acaricidal active substance as above with 1 to 20% by weight of an insecticidal active substance as above and 0.1 to 10% by weight of a fungicidal active substance as above;

II. a liquid, foam-type or pulverulent cleanser for textile interior furnishing surfaces, with water as the predominant carrier fluid,

and

III. a solid component or a component which after drying or application of the agent results in a pulverulent residue having a mean particle size which is suitable for oral ingestion by the house dust mites.

COMMONWEALTH OF AUSTRALIA

PATENTS ACT 1952 Form 10

COMPLETE SPECIFICATION

FOR OFFICE USE

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This document contains the amendments made under Section 49 and is correct for printing.

TO BE COMPLETED BY APPLICANT

Name of Applicant: WERNER & MERTZ GmbH

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Actual Inventor: Edelbert BISCHOFF and Gert WETTER

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Complete Specification for the invention entitled:

AGENT FOR CONTROLLING HOUSE DUST MITES TOGETHER WITH OTHER SMALL PESTS, AND/OR FUNGI, AND ITS USE

The following statement is a full description of this invention, including the best method of performing it known to me/us:-

3549A:rk

WERNER & MERTZ GMBH, D-6500 Mainz

Agent for controlling house dust mites together with other small pests, and/or fungi, and its use

The earlier application P 34 30 611.0 describes an agent for controlling (destroying) house dust mites with which it is possible for the first time to control these pests and the problems associated with them in the household. For an explanation of the difficulties to be overcome, reference is made fully to the statements in the earlier application mentioned in the chapters "background" and "prior art". These statements form also part of the present description. The present application starts from the description and the examples of the earlier application mentioned and now extends the active substance component.

Summary of the invention

It has in fact been found that it may be desirable when controlling house dust mites simultaneously also to deal with (with one and the same agent) other small pests occurring in the house and/or fungi. The present development of the subject of the earlier application mentioned serves this purpose.

All the problems discussed in the earlier application, both with respect to the formulation technology and with respect to getting the acaricidal active substance to the mites, and furthermore the additional aim of dealing with other small pests and/or fungi occurring in the house, too, are now solved by the subject of the present application, namely by an agent as characterised in the attached patent claim 1 and which contains an active substance combination of an acaricidal active substance with an insecticidal active substance and/or with a fungicidal active substance.

An agent as defined in this way according to the invention and its further developments according to the

attached subclaims ensure inter alia that enhanced dirt redeposition (due to "sticking" of the acaricidal active substances) is avoided and that the pulverulent residue resulting after drying or application is not only suitable for oral ingestion by the mites, due to its particle size, but it is also accepted by them as fodder.

The action on the mites is not only supplemented or extended by the insecticidal active substances mentioned and/or by the fungicidal active substances mentioned, but is moreover more times intensified.

The agent according to the invention, its further developments and its application are discussed in detail below.

The preferred carrier fluid in the agent according to the invention (in the case of a liquid or foam-type cleanser) is water or (in the case of a pulverulent cleanser) is predominantly aqueous, ie. contains at least 50% by weight of water.

As the acaricidal active substance (component A.1. below), high-boiling esters can be used, in particular benzyl benzoate, benzyl salicylate, phenyl benzoate, phenyl salicylate, piperonyl isobutyrate as well as mixed and simple phthalates such as, for example, dimethyl phthalate, diethyl phthalate, dibutyl phthalate, dioctyl phthalate, diisodecyl phthalate, diallyl phthalate or benzyl butyl phthalate. It is self-evident that the acaricidal active substance in each case has to be a substance which is acceptable to humans. The quantity of the acaricidal active substance present in the agent according to the invention can vary. In general it amounts to 1 to 20 per cent by weight, relative to the composition according to the invention. A quantity range from 1 to 6 per cent by weight is preferred. A quantity range from 2 to 6 per cent by weight has proved particularly suitable.

The additionally present insecticidal active substances (component A.2. below) are in particular based on the known and conventional pyrethrins or pyrethrum

derivatives. These active substances can be of a natural and/or synthetic origin. The first group comprises for example, pyrethrum concentrates of natural origin (pyrethrum-board of Kenya, etc.); the second group comprises, for example, resmethrin, bioresmethrin, permethrin. These substances can furthermore optionally be present together with synergists which are known and conventional for this purpose (e.g. piperonyl butoxide). In view of the envisaged use (within the house; by laymen; also on beds), it follows that the additionally present insecticidal active substance - in the same way as the acaricidal active substance - is a substance which is physiologically acceptable to humans.

The quantity of the insecticidal active substance present in the agent according to the invention can vary. In general it amounts to 1 to 20 per cent by weight, relative to the composition according to the invention. A quantity range from 1 to 6 per cent by weight is preferred.

A preferred quantity ratio between the acaricidal active substance and the pyrethroids (insecticidal active substance) is 1 : 4 to 4 : 1, when the active substance combination is formed from A.1. and A.2.

Fungicidal active substances (component A.3. below) for the agent according to the invention which may be mentioned are, for example, the following known compounds customary for this purpose: organic acids (e.g. sorbic acid, benzoic acid, formic acid, propionic acid) and salts thereof; esters of these acids (e.g. p-hydroxybenzoate, such as the methyl, ethyl and propyl esters, and the associated salts); thiabendazole or antibiotics (such as , e.g., pimaricin, rimocidin, nystatin, natamycin, amphotericin A and B, actidione).

Here, too, the fungicidal active substances of course have to be substances which are physiologically acceptable to humans in view of their envisaged use within the house.

The quantity of the fungicidal active substance

present in the agent according to the invention can vary. In general it amounts to 0.1 to 10 per cent by weight, relative to the composition according to the invention. A quantity range from 0.3 to 5 per cent by weight is preferred.

When the active substance combination is formed from A.1. and A.3. a preferred quantity ratio between the acaricidal active substance and the fungicidal active substance amounts to 1 : 4 to 4 : 1.

The liquid, foam-type or pulverulent cleanser, present according to the invention, for textile interior furnishing surfaces, with water as the predominant carrier fluid, is in each case a particularly matched recipe formulation for meeting the requirements mentioned in the abovementioned, earlier application and at the same time providing the desired pulverulent residue having the suitable mean particle size after drying or application.

This mean particle size of the pulverulent residue after drying or application is in general 2 to 100 µm. A size range from 10 to 50 µm is here particularly preferred.

In order to obtain the desired pulverulent residue, the particular recipe formulation according to the invention is essentially based on the following components:

A.1. acaricidal active substance: 1 to 20 per cent by weight, in particular 1 to 6 per cent by weight.

A.2. insecticidal active substance: 1 to 20 per cent by weight, in particular 1 to 6 per cent by weight.

A.3. fungicidal active substance: 0.1 to 10 per cent by weight, in particular 0.3 to 5 per cent by weight.

When A.1. and A.2. and A.3. are present at the same time the quantity ratio of acaricidal active substance/insecticidal active substance/fungicidal active substance is preferably 1 : 4 : 4 to 4 : 1 : 1.

B. water:

for a liquid cleanser, 10 to 90% by weight, in particular 40 to 70% by weight,
for a foam-type cleanser, 10 to 90% by weight, preferably 60 to 90% by weight, in particular 70 to 90% by weight;
for a pulverulent cleanser, 5 to 60% by weight, in particular 10 to 30% by weight;

C. dissolved or dispersed plastic:
for a liquid cleanser, 5 to 90% by weight, in particular 20 to 60% by weight;
for a foam-type cleanser, 1 to 80% by weight, in particular 5 to 10% by weight.

inorganic or organic solid:
for a liquid cleanser, only in some cases, 0.5 to 20% by weight;
for a foam-type cleanser, 0.5 to 20% by weight, in particular 1 to 5% by weight;
for a pulverulent cleanser, 20 to 80% by weight, in particular 30 to 70% by weight.

D. surfactants:
for liquid and foam-type cleanser, 0.05 to 10% by weight, in particular 2 to 5% by weight;
for a pulverulent cleanser, 0.05 to 10% by weight, in particular 0.05 to 1% by weight.

E. anti-foam:
for a liquid cleanser, 0.2 to 5% by weight, in particular 0.3 to 1% by weight,
and if appropriate

F. optional additives, such as a perfume (in particular 0.2% by weight); a preservative (in particular 0.2% by weight) and thickener (in particular 0.1 to 2% by weight).

As a constituent for dissolving fatty dirt, a pulverulent cleanser preferably also contains, for example, white spirit in a quantity of 1 to 30% by weight, in particular 5 to 20% by weight. The preferred propellant in a foam-type cleanser is, for example, propane/butane in a quantity of 5 to 20% by weight,

in particular 7 to 13% by weight.

The following may be mentioned as examples of the abovementioned component C: dissolved organic or inorganic polymers, such as xanthan gum or water-glass; acrylates from aqueous acrylate dispersions; inert materials, such as silicates, for example montmorillonite, amorphous silica, SiO_2 in the form of quartz sand or siliceous earth or carbonates, for example, precipitated or ground mineral chalk; high surface-area substances, such as cellulose powder, ground plastic foams (for example of urea/formaldehyde resin), plastic powders (for example of polyamide, polyurethane or polyethylene), flours of wood or corn cobs, and non-swellable starch. The following should also be mentioned: sodium aluminum silicates (types of molecular sieve), polishing alumina, aluminum oxide, borax; and organic macromolecular products, for example polystyrene, polypropylene and polyvinyl resins. According to the invention, it is possible that one or more of these components C are present in the recipe formulation.

In detail, these additions C have the purpose to ensure that, after drying or application of the agent according to the invention, a pulverulent residue results in which the active substance component is present in a solid form (occluded, absorbed or adsorbed) and specifically in the mean particle size, according to the claim, which can be ingested by the small pest, in particular the house dust mite. This prevents and/or controls, if desired, also the fungal growth on contact with the agent according to the invention (in the form of a liquid, a foam or a powder).

By their capacity to form a pulverulent residue (together with the active substance component) the component C present according to the invention markedly differs from the film formers of hitherto known cleansers for textile substrates; with such known cleansers, for example liquid cleansers, it is in fact desired that the dry residue forms a film, that is to say that it

provides the textile fiber with a dirt-repelling coating. By contrast, such film formation is not desired in the case of the subject of the application, because the acaricidal active substance, then adhering to the textile fiber, would no longer be available for oral ingestion by the mites. In addition, the agent according to the invention differs from the category of those known textile cleansers in which the dry residue forms solids which can be sucked off as easily as possible (in the case of these known cleansers, larger flock-like particles, more widely exposed to the air stream are in fact desired); by contrast, the mean particle size of the pulverulent residue should not exceed a certain limit in the case of the subject of the application, because otherwise the mites are unable to ingest it. On the other hand, an unduly large proportion of very fine particles should also be avoided, because otherwise there is a tendency towards a too strong adhesion of the particles to the textile fibers and hence to a brightening of, for example, dark-colored fabrics.

As the surfactants (component D) suitable for use for the special recipe formulation may be mentioned the anionic, non-ionic, cationic or amphoteric substances known and conventional in the field of textile cleansers. Examples of anionic surfactants to be mentioned are: sulfonated aromatic hydrocarbons, for example n-alkylbenzenesulfonate; sulfonated aliphatic hydrocarbons, for example secondary alkanesulfonate; sulfonated alpha-olefin, for example an olefinsulfonate; sulfated fatty alcohol, for example sodium laurylsulfate; sulfated fatty alcohol ether, for example sodium lauryl polyglycol ethersulfate; sulfonated fatty acid metnyl esters, for example the methyl ester of sulfonated palm kernel fatty acid; sulfonated maleic acid esters, for example lauryl sulfosuccinate; carboxymethylated fatty alcohol polyglycol ethers, for example lauryl polyglycol etheracetate. Examples of nonionic surfactants to be mentioned are: fatty alcohol ethoxylate, alkylphenol ethoxylate, fatty

acid ethoxylate, fatty acid alkylolamide, fatty acid alkylolamide ethoxylate, fatty amine ethoxylate, and polyalkylene oxide block polymers. Quaternary ammonium compounds may be mentioned as cationic surfactants. Betaines are examples of ampholytes.

The antifoam (component E) present in the recipe formulation can also be of the conventional type. Fatty acids, for example commercially available mixtures of C_{12}-C_{18}-fatty acids in the form of their sodium salts (soaps), are particularly preferred here. Regarding the antifoam effect of soaps, see Helmut Stache, Tensid-Taschenbuch [Surfactant handbook], Munich-Vienna (1979), page 201.

Depending on whether the cleanser present according to the invention is in the form of a fluid or foam or powder, the following explanations should also be given for the individual case:

1. Liquid cleanser

Mites and other small pests are already killed on immersion in the fluid, that is to say on dermal contact. At the same time, the pulverulent residue which results after drying of the fluid and has the appropriate mean particle size has the effect that it is also orally ingested by the pests and that it is active also in this way. Those mites are then also affected which were not wetted by the fluid itself or which migrate in from untreated areas after the fluid has dried.

2. Foam-type cleanser

Similar aspects as described above under 1 are applicable here, but it is not intended in this case to effect extensive wetting of the objects to be treated; immersion is thus possible only in the superficial region.

The agent acts here mainly after drying, via the pulverulent residue having the particle size which can be orally ingested. The pulverulent residue penetrates into deeper regions and is ingested there by the pests.

3. Pulverulent cleanser

In this embodiment, extensive moistening should

altogether be avoided. As a result, re-use as soon as possible and milder treatment of sensitive fabrics is ensured. The action in this case is based only on oral ingestion.

Agents according to the invention of the following composition have proven particularly suitable:

I) Carpet cleaner (pulverulent)

	% by weight		% by weight
Cellulose powder	20 to 80	preferably	30 to 70
Water	5 to 60	"	10 to 30
White spirit	0 to 30	"	5 to 20
Alcohol	0 to 10	"	1 to 6
Active substance combination (acaricidal active substance together with insecticidal and/or fungicidal active substance)	1 to 20	"	4 to 12
Surfactant	0.05 to 5	"	0.05 to 1
Perfume	0.2		
Preservative	0.2		

II) Carpet cleaner (liquid)

	% by weight		% by weight
Water	10 to 90	preferably	40 to 70
Soap (antifoam)	0.5 to 5	"	0.5 to 1
Surfactant	1 to 10	"	2 to 5
Active substance combination (acaricidal active substance together with insecticidal and/or fungicidal active substance Polymer, 40%)	1 to 20 5 to 90	" "	4 to 12 20 to 60
Perfume	0.2		
Preservative	0.2		

III) Upholstery and mattress cleanser (foam-type)

	% by weight		% by weight
Water	60 to 90	preferably	70 to 90
Surfactant	0.5 to 10	"	2 to 4
Active substance combination (acaricidal active substance together with insecticidal and/or fungicidal active substance)	0.5 to 20	"	2 to 12
Cellulose	0.5 to 20	"	1 to 5
Thickener	0.1 to 2	"	0.2 to 0.3
Propellant	5 to 20	"	7 to 13
Perfume	0.2		
Preservative	0.2		

IV) Upholstery and mattress cleanser (foam-type)

	% by weight		% by weight
Water	10 to 90	preferably	70 to 90
Surfactant	0.5 to 10	"	2 to 4
Active substance combination (acaricidal active substance together with insecticidal and/or fungicidal active substance)	0.5 to 20	"	2 to 12
Polymer, 40%	1 to 80	"	5 to 10
Propellant	5 to 20	"	7 to 13
Perfume	0.2		
Preservative	0.2		

The interior furnishing surfaces to be treated with the agent according to the invention are those areas on which the presence of house dust mites, other small pests and/or fungi was detected. These are in particular textile materials, but also other interior furnishing surfaces. The fibers of the textile substrate can here be of natural and/or synthetic origin.

Other small pests to be controlled (in addition to house dust mites) which may be mentioned are for example, fleas, dust lice, arachnids (ticks), cockroaches, silver fish and the like. For controlling them, the agent according to the invention contains an active substance combination of acaricidal and insecticidal components.

This allows control of other small pests occurring within the house in addition to house dust mites.

The present application therefore also relates to the envisaged use of the agent for the simultaneous control of house dust mites and other small pests, in particular the abovementioned small pests.

The fungi to be controlled with the agent according to the invention can be combined under the collective term "xerophilic fungi", i.e. fungi which - in comparison with other fungal species - manage with somewhat lower relative atmospheric humidity. These fungi too generate allergens which together with the allergens of the house dust mites occur in house dust. Xerophilic fungi are of importance particularly in regions of the country with high atmospheric humidity during lengthy periods of the year (for example The Netherlands, the North German lowlands but also humid valleys in the vicinity of rivers and lakes including in mountainous regions). It therefore often proves to be advantageous to combine control of house dust mites with that of xerophilic fungi. Specific xerophilic fungi which can be controlled are, for example, Aspergilloidae, Aspergillus penicillus candidus, Aspergillus halophilicus, Aspergillus versicolor, Wallemia sebi.

Because of the additional presence of the fungicidal active substance, the application also relates to the use of the agent for the simultaneous control of the house dust mites and fungi, in particular the abovementioned fungi.

As mentioned above, the insecticidal active substance and the fungicidal active substance (in addition to the acaricidal active substance) can be present additionally and simultaneously in the agent according to the present application. Its use then allows simultaneous control of house dust mites, small pests and fungi.

As already explained in the abovementioned earlier application, it is understood that the agent according to th application is used in the entire household, e.g. by laymen, this use being within the framework of normal cleaning operations. This means of course, e.g. in the case of the liquid formulation, that the latter is applied by means of applicators or spray devices, that it dries there and that the dry residues are subjected to a mechanical after-treatment by the vacuum cleaning and by subsequently walking on it.

This also means of course, e.g. in the case of the foam formulations, that the latter are mechanically rubbed in after application (as foam).

The agent according to the invention is expediently applied to mattresses or upholstered furniture in such a way that, after the foam-type cleanser has dried, the particles penetrate to a depth of about 1 to 2 cm.

Because of the desired prolonged period of action of the active component on the particular surfaces or objects, which period extends over a time of weeks to months, it is occasionally advantageous to repeat the treatment with the agent according to the invention once or twice. In this way, the particular pest populations are dealt with in an efficacious manner.

The examples which follow explain the invention without restricting its application.

Example 1

Cleaner (liquid)

Water, distilled	62.48%
Antifoam (C_{12}-C_{18} fatty acid and 45% sodium hydroxide solution)	0.7
Triethanolamine	2.00
Surfactant mixture (sodium lauryl ether-sulfate, alkylphenol ethoxylates)	4.62
Benzyl benzoate	4.00
Pyrethrum (conc. nat.)	4.00
Pimaricin	2.00
Polyacrylate, 40%	20.00
Preservative	0.20
	100.00%

Example 2

Upholstery and mattress cleanser (foam-type)

Water, distilled	84.3%
Surfactant mixture (sodium lauryl-sulfate, alkenesulfonate, hydroxyalkanesulfonate, soap)	3.4
Benzyl benzoate	2.00
Pyrethrum (conc. nat.)	1.00
Cellulose	2.00
Organic polymer (xanthan gum)	0.30
Propane/butane	7.0
	100.00%

Example 3

Upholstery and mattress cleanser (foam-type)

Water, distilled	73.2%
Surfactant mixture (as Example 2)	2.8
Benzyl benzoate	2.00
Pimaricin	1.00
Polyacrylate, 40%	8.0
Propane/butane	13.0
	100.00%

Example 4

Textile cleanser (pulverulent)

Cellulose powder	30.0%
Crystal quartz sand	30.0
Sodium chloride	2.0
White spirit	12.0
Water, distilled	15.8
Preservative	0.20
SiO_2 (diatomaceous earth)	5.00
Benzyl benzoate	3.00
Pyrethrum synth. (e.g. resmethrin)	1.0
Piperonyl butoxide	0.5
Natamycin	0.5
	100.00%

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. An agent for controlling house dust mites which also deals with other small pests and/or fungi occuring in the house, comprising

I. an active substance combination of

(a) 1 to 20% by weight of an acaricidal active substance selected from the group comprising benzyl benzoate, benzyl salicylate, phenyl benzoate, phenyl salicylate, piperonyl isobutyrate and mixed simple phthalates, such as, for example, dimethyl phthalate, diethyl phthalate, dibutyl phthalate, dioctyl phthalate, diisodecyl phthalate, diallyl phthalate or benzyl butyl phthalate,

with 1 to 20% by weight of an insecticidal active substance selected from among insecticides based on pyrethrins or pyrethrum derivatives, where appropriate together with conventional synergists, or

(b) 1 to 20% by weight of an acaricidal active substance as above with

0.1 to 10% by weight of a fungicidal active substance selected from fungicides based on organic acids, thiabendazole or antibiotics, or

(c) 1 to 20% by weight of an acaricidal active substance as above with 1 to 20% by weight of an insecticidal active substance as above and 0.1 to 10% by weight of a fungicidal active substance as above;

II. a liquid, foam-type or pulverulent cleanser for textile interior furnishing surfaces, with water as the predominant carrier fluid,

and

III. a solid component or a component which after drying or application of the agent results in a pulverulent residue having a mean particle size which is suitable for oral ingestion by the house dust mites.

2. An agent as claimed in claim 1, the pulverulent residue of which has a mean particle size of 2 to 100 µm.

3. An agent as claimed in claim 1, which is free of polyalkylene glycols, ethers and esters thereof, and free of fatty acid esters.

4. An agent as claimed in claim 1, which, for producing the pulverulent residue, contains aqueous plastic dispersions or solutions which, after drying, give a mean particle size of 2 to 100µm.

5. An agent as claimed in claim 1, which, for producing the pulverulent residue, contains inorganic or organic solid powders.

6. An agent as claimed in claim 4 or 5, whose dispersions, solutions or solid powders have the suitable mean particle size or produce the latter after drying or application.

7. An agent as claimed in claim 1, which, for producing the pulverulent residue of suitable mean particle size, contains one or more components as claimed in claims 4 or 5.

8. Use of the agent as claimed in claim 1 for controlling house dust mites together with other small pests occurring in the house and/or fungi on interior furnishing surfaces.

9. Use of the agent as claimed in claim 1 for controlling house dust mites together with other small pests occurring in the house and/or fungi on textile interior furnishing surfaces.

10. An agent for controlling house dust mites substantially as described herein with references to any one of the Examples 1 to 4 or Examples I to IV.

DATED this 30th day of January 1990

WERNER & MERTZ GmbH
By Their Patent Attorney
GRIFFITH HACK & CO

7618S/SLV