

Description**FIELD OF THE INVENTION**

5 The present invention is directed to platinum catalyzed addition cured polydiorganosiloxane coating compositions utilizing polydimethylsiloxane adhesion promoters which exhibit improved adhesion to sub-

strates.

BACKGROUND OF THE INVENTION

10 Silicone compositions are well known products offering premium properties in a wide variety of applications. For example, certain flexible silicone resin systems have been found useful as electronic conformal and junction coatings which are used for passivating and protecting semiconductor surfaces, and serve to assure optimal electrical performance. Such silicone materials are chosen since they offer rapid

15 cure rates which improve production efficiency. The softness of these materials helps to minimize the vibration and shock experienced by such semiconductor devices and the low viscosity of such silicone coating compositions provides for ease of handling.

Such silicone electronic coatings are useful in a number of applications. A flexible conformal coating of such material can provide mechanical and electrical insulation prior to molding of plastic power transistors, for example. These materials can also be used as a light pipe or lens which insulates and isolates LED's and

20 photocouplers and may be utilized with or without further encapsulation. These silicone junction coating materials are also a resilient coating which can be used directly over transistors, diodes and monolithic integrated circuit chips in order to prevent damage during and after final potting or sealing. Additionally, these coatings can be used as a thin section potting material for extra protection in cavity type packages in

25 order to provide primary mechanical and chemical protection.

Brown in U.S. Patent No. 4,340,710, discloses platinum-catalyzed one-package silicone electronic coating materials with good shelf life. Brown's products comprise a major amount of a vinyl functional linear siloxane fluid, an organohydrogenpolysiloxane, a platinum catalyst, and a combination of cure inhibitors comprised of an unsaturated isocyanurate and a dialkylacetylenedicarboxylate. These products are coated

30 on a substrate and cured at temperatures from about 70° C to 150° C.

Although Brown reports improved adhesion of his materials when compared to materials of the prior art, additional improvement has been found to be desirable, particularly in adhesion to thermoplastic resins such as polyolefins, polycarbonate, polyether, polyamide, polyimide resins, their mixtures, and the like.

GB-A-2076841 discloses a process for regulating the cure of silicone rubber products wherein the cure rate of a platinum catalyzed addition cured silicone rubber composition is regulated by the addition of small amounts of silanol containing materials, i.e. silanols, silanol-containing low viscosity polysiloxanes, and untreated pyrogenic or fumed silica.

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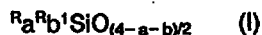
It is an object of the invention to provide electronic coating compositions having improved adhesion to substrates.

40 This and other objects will become apparent to one skilled in the art upon consideration of the present specification and claims.

SUMMARY OF THE INVENTION

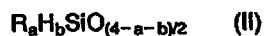
45 The objects of the invention are accomplished by providing an organopolysiloxane electronic coating composition comprising:

(a) an olefinorganopolysiloxane having structural units of the formula:



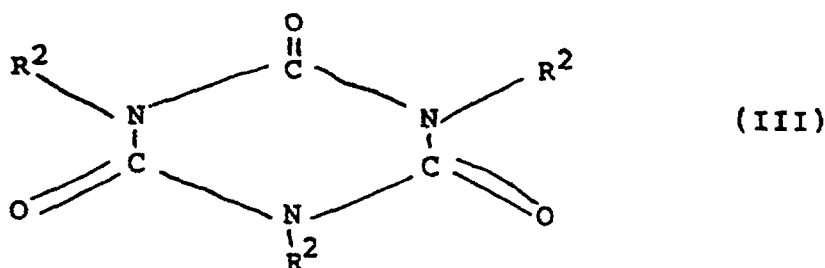
50 and

(b) an organohydrogenpolysiloxane having structural units of the formula:



55 wherein R is an organic radical attached to silicon by a C-Si linkage and is selected from the group consisting of monovalent hydrocarbon radicals, halogenated monovalent, hydrocarbon radicals, and cyanoalkyl radicals; generally, R contains from 1-30 atoms, straight or branched chained, preferably from

1-12 carbon atoms, and most preferably 1-8 carbon atoms: R¹ is an olefinic hydrocarbon radical attached to silicon by a C-Si linkage and generally contains from 1-20 aliphatic carbon atoms, linked by multiple bonds (e.g., vinyl, allyl, methallyl, butenyl, pentenyl and ethynyl); a has a value of 0 to less than 3, inclusive and preferably from 0.5 to about 2, inclusive, b has a value from 0.0005 to 2.0, inclusive and preferably from 0.005 to 2.0, inclusive and the sum of a and b is equal to from 0.8 to 3, inclusive, (c) a platinum catalyst in an amount of from 1 to 50 parts of platinum metal per million parts of olefin organopolysiloxane, (d) a combination of inhibiting agents comprised of (i) from 0.01 to 5% by weight, based on the total weight of the coating composition, of an ethylenically unsaturated isocyanurate corresponding to the structural formula :



wherein R² is the same or different and is selected from the group consisting of hydrogen, alkyl, aryl, aralkyl, polynuclear aryl, heteroaryl, monofunctional C₂₋₆ alkenyl and substituted derivatives thereof with the proviso that at least one R² is monofunctional C₂₋₆ alkenyl; and (ii) from 0.05 to 2.0% by weight, based on the total weight of the composition, of a dialkylacetylenedicarboxylate having the structural formula ROCC≡CCOOR wherein R is as described above, and (e) a mixture of 40-60% cyclic dimethylsiloxanes having from 3 to 6 siloxy groups and 60-40% hydroxyl terminated linear dimethylsiloxane telomers, wherein said mixture has a viscosity from 0.04 to 0.4 d Pa·s (4 centipoise to 40 centipoise) at 25 °C and a silanol content from 0.5 to 1.5%.

DETAILED DESCRIPTION OF THE INVENTION

In particular, the olefinorganopolysiloxanes having structural units represented by Formula I hereinabove are intended to broadly cover fluid organopolysiloxanes which preferably, but not necessarily, are free of silanic hydrogen, and contain olefinic unsaturation by means of double or triple bonds between two adjacent aliphatic carbon atoms. Among the radicals which R¹ represents in Formula I hereinabove are included alkyl, such as methyl, ethyl, propyl, isopropyl, butyl, octyl and dodecyl; cycloalkyl, such as cyclopentyl, cyclohexyl and cycloheptyl; aryl, such as phenyl, naphthyl, tolyl and xylyl; aralkyl, such as benzyl, phenylethyl and phenylpropyl; halogenated derivatives of the aforesaid radicals including chloromethyl, trifluoromethyl, chloropropyl, chlorophenyl, dibromophenyl, tetrachlorophenyl and difluorophenyl; cyanalkyl, such as betacyano ethyl, gamma-cyanopropyl and beta-cyanopropyl. Preferably R is methyl. Moreover, Formula I is intended to include those materials wherein R is a mixture of the aforesaid radicals.

Among the radicals represented by R¹ in Formula I hereinabove are included alkenyl, such as vinyl, allyl, methallyl, butenyl and pentenyl; and alkynyl, such as ethynyl, propynyl, butynyl and pentynyl.

Preferably R¹ is vinyl or allyl and most preferably R¹ is vinyl.

The olefinorganopolysiloxanes within the scope of Formula I are well known in the art, particularly U.S. Pat. No. 3,344,111 to Chalk and U.S. Pat. No. 3,346,366 to Modic. Similarly, their preparation and/or commercial availability is also well known.

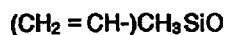
Specific materials included within the scope of the olefinorganopolysiloxanes of Formula I hereinabove are low molecular weight materials, such as

vinylpentamethyldisiloxane,

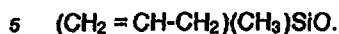
1,3-divinyldimethyldisiloxane,

1,1,3-trivinyldimethyldisiloxane,

1,1,1,3-tetravinyldimethyldisiloxane, as well as higher polymers containing up to 100,000 or more silicon atoms per molecule. Also included within the scope of the olefinorganopolysiloxanes of Formula I are cyclic materials containing silicon-bonded vinyl or allyl radicals, such as the cyclic trimer, tetramer or pentamer of methylvinylsiloxane

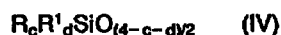


or methyl allylsiloxane



Among these cyclic materials, tetramethyltetraallylcyclotetrasiloxane and tetramethyltetravinylcyclotetrasiloxane are preferred.

The olefinorganopolysiloxanes encompassed within the scope of the present invention can be characterized as copolymers of (1) siloxane units having the formula:

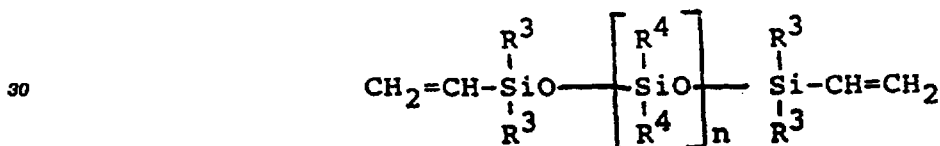


where R and R' are defined above and c has a value of from 0 to 2, inclusive, and the sum of c and d is equal to from 1.0 to 3.0 inclusive, and (2) an organopolysiloxane having the structural formula:



where R is as defined above and n has a value of from 0.8 to 2.5, inclusive. Thus, where the olefinorganopolysiloxane employed herein is a copolymer of units within the scope of formula IV with an organopolysiloxane having an average formula within the scope of Formula V, the copolymer generally contains from 0.5 to 99.5 mole percent of units within the scope of Formula V. The preparation of these copolymers is also well known in the art.

A preferred class of organopolysiloxane compositions within the scope of the present invention are those disclosed by Modic in U.S. Pat. No. 3,436,366. These compositions comprise (1) 100 parts by weight of a liquid vinyl chainstopped polysiloxane having the formula:



wherein R³ and R⁴ are monovalent hydrocarbon radicals free of aliphatic unsaturation, with at least 50 mole percent of the R⁴ groups being methyl, and where n has a value such that the electronic coating compositions of the present invention have a viscosity of, 5 to 50 d Pa·s (500 to 5,000) centipoise at 25° C and (2) from 20 to 50 parts by weight an organopolysiloxane copolymer comprising (R⁵)₃SiO_{0.5} units, where each R⁵ individually is a member selected from the class consisting of vinyl radicals and monovalent hydrocarbon radicals free of aliphatic unsaturation, where the ratio of (R⁵)₃SiO_{0.5} units to SiO₂ units is from 0.5:1 to 1:1, and where from 2.5 to 10 mole percent of the silicon atoms contain silicon-bonded vinyl groups. The vinyl chain-stopped organopolysiloxane component (1) is typified by various compositions where the monovalent hydrocarbon radicals represented by R³ and R⁴ include alkyl radicals, e.g., methyl, ethyl, propyl, butyl and octyl; aryl radicals, e.g., phenyl, tolyl and xylyl; cycloalkyl radicals, e.g., cyclohexyl and cycloheptyl; aralkyl radicals e.g., benzyl and phenylethyl. Preferably, all of the radicals represented by R³ and R⁴ are selected from the group consisting of methyl and phenyl radicals and most preferably R³ and R⁴ are methyl. In the organopolysiloxane copolymer component (2) R⁵ can be vinyl and/or monovalent hydrocarbon radicals free of aliphatic unsaturation, with at least the stated proportion of R⁵ groups being vinyl. The R⁵ groups which are not vinyl are of the same scope as the R³ and R⁴ groups and like these, are preferably methyl.

The organohydrogenpolysiloxanes having structural units represented by Formula II above are intended to broadly cover fluid organopolysiloxanes which are preferably, but not necessarily, free of olefinic unsaturation, but which contain silanic hydrogen. These organohydrogenpolysiloxanes represented by Formula II hereinabove are also known in the art as particularly manifested by U.S. Pat. No. 3,334,111 by Chalk, and U.S. Pat. No. 3,436,366.

Among the radicals represented by R in Formula II, above, similarly to R in Formula I above, are included alkyl, such as methyl, ethyl, propyl, isopropyl, butyl and octyl; cycloalkyl, such as cyclopentyl, cyclohexyl and cycloheptyl; aryl, such as phenyl, naphthyl, tolyl and xylyl; aralkyl, such as benzyl, phenylethyl and phenylpropyl; halogenated derivatives of the above radicals, including chloromethyl,

d Pa·s (3300 centipoise).

The product was coated on aluminum and on the polymer side of a kraft paper-polyethylene laminate and cured at 110° C using a long (12 hr.) and a short (1 hr.) heating cycle. A well-cured adherent coating was obtained on each substrate. Better adhesion was observed for the samples cured for 12 hours.

5 Additional evaluations of cured coatings of the material of this Example are shown in Example 5.

EXAMPLE 3 AND COMPOSITION A

10 A composition of the invention similar to that of Example 2 was prepared in which the Meteor Black pigment was omitted and the amount of dimethylsiloxane hydrolyzate was increased to 1.63% of the total weight of the composition.

Another composition similar to that of Example 2 was prepared in which the dimethylsiloxane hydrolyzate of the invention was also omitted (Composition A) Glass-reinforced plastic printed circuit board coupons were rinsed and scrubbed with Freon TMS and air dried. Coupons were dip coated in duplicate
15 with the composition of the invention and Composition A, allowed to drain and then cured in a oven at 120-125° C. After curing, the coated coupons were allowed to cool to room temperature. The coatings were tested for adhesion by rubbing with the thumb. The composition of the invention was significantly more difficult to remove from the substrate than Composition A, the latter showing little or no adhesion to the circuit board.

20 EXAMPLE 4

The preparation of Example 2 was repeated but the amount of the dimethylsiloxane hydrolyzate - Meteor 7890 mixture was increased to 3.4 parts. The product as prepared had a viscosity of about 21 d
25 Pa·s (2100 centipoise). Comparative results of cured coatings of the material of this Example are shown in Example 5.

COMPOSITION B

30 A pigmented one package coating composition was prepared by first mixing 70.21 parts of Base Fluid A with 28.37 parts of 5µalpha-quartz (Minusil) and 1.42 parts of a mixture of 2/3 black pigment (Kenrich K8124 T) and 1/3 vinyl fluid used in Example 1. The 100 parts by weight the resulting mixture was combined with 0.27 parts by weight of triallylisocyanurate, 0.11 parts by weight of dimethylacetylenedicarboxylate, and 14.3 parts by weight of a trimethylsilyl end-blocked polydimethylsiloxane fluid having a viscosity of about
35 0.05 d Pa·s (5 centipoise) at 25° C. This mixture was stirred for one hour. The 10 parts of a mixture of 64.3 parts of the vinyl fluid used in Example 1 and 35.7 parts of the liquid copolymer of Example 2 was added, and the mixture was stirred for 30 minutes to yield a product having a viscosity of about 20.7 d Pa·s (2070 centipoise) at 25° C. Evaluations of cured coatings of this material are described in Example 5.

40 EXAMPLE 5

Aluminum, steel, Noryl®100 and Delco glass filled thermoplastic (90% Noryl®, 10.% Lexan®) coupons were wiped three times with a paper wipe saturated with isopropanol. The coupons were air-dried for 10-15 minutes and then the compositions listed in Table I below were each poured on individual coupons to obtain
45 a thickness of 0.127-0.254mm (5-10 mils) over 70% of the coupon, leaving the remaining 30% uncoated. The coated specimens were immediately placed in an oven set at 150° C and cured for 3.5 hours.

The cured specimens were allowed to cool for one hour. Lifting the coating from the substrate by lifting/pushing at the parting line with the thumbnail was attempted. Results were defined as follows:

50	Poor -	No adhesion whatsoever, coating can be lifted/pulled off the substrate intact. (adhesive failure)
	Fair -	Some adhesion occurs but coating can be picked up and removed from substrate nearly intact. (adhesive/cohesive failures)
	Good -	Well adhered - can't be removed from substrate without breaking coating. (cohesive failure).
55	Excellent -	coating can't be lifted without thumbnail underneath it at all times. (all failures are cohesive).

TABLE I

Composition	Substrate			
	Aluminum	Delco®	Steel	Noryl®
Example 2	good	good-excellent	excellent	good-excellent
Example 4	fair	fair-good	good	poor-good
Composition B	poor-fair	poor	poor	poor

The data of Table I clearly show that the use of the silanol -and cyclic- containing dimethylsiloxane hydrolyzate adhesion promoter of the invention affords superior results when compared to the use of a low molecular weight trimethylsiloxy end-blocked linear dimethyl-siloxane fluid.

Claims

1. A latent curable electronic coating composition stabilized against premature gelation comprising :
 - a. an olefinorganopolysiloxane having units of the structural formula :

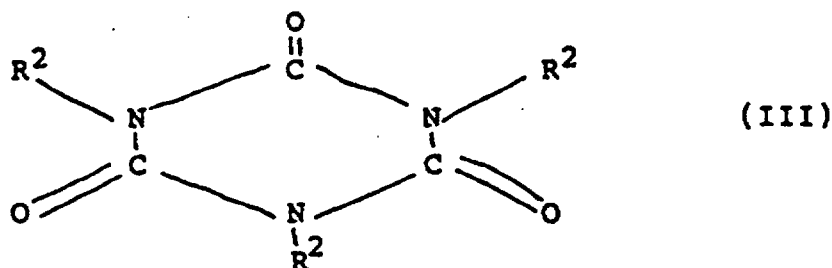


- b. an organohydrogenpolysiloxane having units of the structural formula :



wherein R is selected from the group consisting of a monovalent hydrocarbon radical, a halogenated monovalent hydrocarbon radical, a cyanoalkyl radical and mixtures thereof, R' is an olefinic hydrocarbon radical, wherein a has a value of from 0 to less than 3, inclusive, b has a value of from 0.0005 to 2.0 inclusive, and the sum of a and b is equal to from 0.8 to 3, inclusive;

- c. a platinum catalyst in an amount of from 1 to 50 parts of platinum metal per million parts of olefinorganopolysiloxane;
- d. a combination of inhibiting agents comprised of (i) from 0.01 to 5% by weight, based on the total weight of the coating composition of an ethylenically unsaturated isocyanurate corresponding to the structural formula :



wherein R² is the same or different and is selected from the group consisting of hydrogen, alkyl, aryl, aralkyl, polynuclear aryl, heteroaryl, monofunctional C₂₋₆alkenyl and substituted derivatives thereof with the proviso that at least one R² is C₂₋₆alkenyl and (ii) from 0.05 to 2.0% by weight, based on the total weight of the coating composition, of a dialkylacetylenedicarboxylate having the structural formula :



wherein R is as described above; and

- e. a mixture of 40-60% cyclic dimethylsiloxanes having from 3 to 6 siloxy groups and 60-40% hydroxyl terminated linear dimethylsiloxane telomers, wherein said mixture has a viscosity from 0.04 to 0.4 d Pa·s (4 centipoise to 40 centipoise) at 25 °C and a silanol content from 0.5-1.5%

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The data of Table I clearly show that the use of the silanol -and cyclic- containing dimethylsiloxane hydrolyzate adhesion promoter of the invention affords superior results when compared to the use of a low molecular weight trimethylsiloxy end-blocked linear dimethyl-siloxane fluid.

Claims

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 - a. an olefinorganopolysiloxane having units of the structural formula :



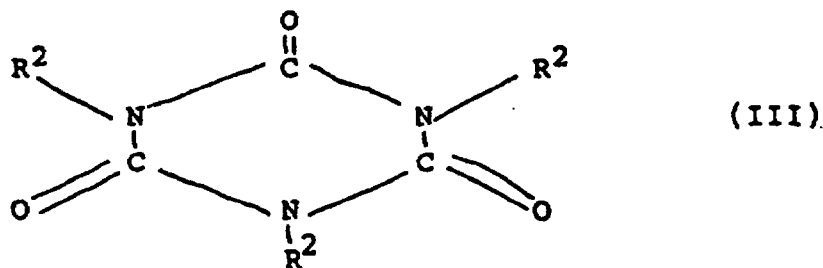
- b. an organohydrogenpolysiloxane having units of the structural formula :



wherein R is selected from the group consisting of a monovalent hydrocarbon radical, a halogenated monovalent hydrocarbon radical, a cyanoalkyl radical and mixtures thereof, R' is an olefinic hydrocarbon radical, wherein a has a value of from 0 to less than 3, inclusive, b has a value of from 0.0005 to 2.0 inclusive, and the sum of a and b is equal to from 0.8 to 3, inclusive;

c. a platinum catalyst in an amount of from 1 to 50 parts of platinum metal per million parts of olefinorganopolysiloxane;

d. a combination of inhibiting agents comprised of (i) from 0.01 to 5% by weight, based on the total weight of the coating composition of an ethylenically unsaturated isocyanurate corresponding to the structural formula :



wherein R² is the same or different and is selected from the group consisting of hydrogen, alkyl, aryl, aralkyl, polynuclear aryl, heteroaryl, monofunctional C₂₋₆ alkenyl and substituted derivatives thereof with the proviso that at least one R² is C₂₋₆ alkenyl and (ii) from 0.05 to 2.0% by weight, based on the total weight of the coating composition, of a dialkylacetylenedicarboxylate having the structural formula :



wherein R is as described above; and

- e. a mixture of 40-60% cyclic dimethylsiloxanes having from 3 to 6 siloxy groups and 60-40% hydroxyl terminated linear dimethylsiloxane telomers, wherein said mixture has a viscosity from 0.04 to 0.4 d Pa·s (4 centipoise to 40 centipoise) at 25 °C and a silanol content from 0.5-1.5%



2. A composition as in Claim 1 wherein said olefinorganopolysiloxane is a linear dimethylvinyl chainstop-
ped polydimethylsiloxane fluid having a viscosity of, 5 to 50 d Pa·s (500 to 5000 centipoise) at 25 °C.
3. A composition as in Claim 1 wherein said organohydrogenpolysiloxane comprises units selected from
(HSiO_{1,5}) units, (H SiCH₃O) units, (CH₃)₂H SiO_{0,5} units and (H₂SiO) units.
4. A composition as in Claim 1 wherein said ethylenically unsaturated isocyanurate is triallylisocyanurate.
5. A composition as in Claim 1 wherein said dialkylacetylenedicarboxylate is dimethylacetylenedicarbox-
ylate.
6. A process for preparing a cured electronic coating composition comprising curing the composition
according to Claim 1 at elevated temperature upon a substrate.

Patentansprüche

1. Latent härtbare elektronische Überzugszusammensetzung, die gegen vorzeitige Gelierung stabilisiert
ist, umfassend:

- a. ein Olefinorganopolysiloxan mit Einheiten der Strukturformel:



- b. ein Organohydrogenpolysiloxan mit Einheiten der Strukturformel:

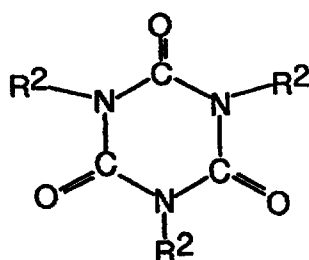


worin R ausgewählt ist aus der Gruppe bestehend aus einem einwertigen Kohlenwasserstoffrest, einem halogenierten einwertigen Kohlenwasserstoffrest, einem Cyanalkylrest und deren Mischungen, R' ein olefinischer Kohlenwasserstoffrest ist, worin a einen Wert von 1 bis weniger als 3 hat, b einen Wert von 0,0005 bis einschließlich 2,0 hat, und die Summe von a und b gleich 0,8 bis einschließlich 3 ist;

- c. einen Platinkatalysator in einer Menge von 1 bis 50 Teilen Platinmetall auf 1.000.000 Teile des Olefinorganopolysiloxans;

- d. eine Kombination von Hemmitteln, zusammengesetzt aus

- (i) von 0,01 bis 5 Gew.-%, bezogen auf das Gesamtgewicht der Überzugszusammensetzung, eines ethylenisch ungesättigten Isocyanurats, das der Strukturformel entspricht:



(III)

worin R² gleich oder verschieden und ausgewählt ist aus der Gruppe bestehend aus Wasserstoff, Alkyl, Aryl, Aralkyl, mehrkernigem Aryl, Heteroaryl, monofunktionellem C₂₋₆-Alkenyl und deren substituierten Derivaten, unter der Bedingung, daß mindestens ein R² C₂₋₆-Alkenyl ist und
(ii) von 0,05 bis 2,0 Gew.-%, bezogen auf das Gesamtgewicht der Überzugszusammensetzung, eines Dialkylacetylenedicarboxylates der Strukturformel:



worin R die oben genannte Bedeutung hat und



e. eine Mischung von 40 bis 60% cyclischer Dimethylsiloxane mit 3 bis 6 Siloxygruppen und 60 bis 40% Hydroxylendgruppen aufweisender linearer Dimethylsiloxantelomerer, worin diese Mischung eine Viskosität von 0,04 bis 0,4 dPa·s (4 bis 40 centipoise) bei 25 °C und einen Silanolgehalt von 0,5 bis 1,5% hat.

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2. Zusammensetzung nach Anspruch 1, worin das Olefinorganopolysiloxan eine lineare Dimethylvinylendgruppen aufweisende Polydimethylsiloxan-Flüssigkeit mit einer Viskosität von 5 bis 50 dPa·s (500 bis 5.000 centipoise) bei 25 °C ist.

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3. Zusammensetzung nach Anspruch 1, worin das Organohydrogenopolysiloxan Einheiten umfaßt, ausgewählt aus (HSiO_{1,5})-Einheiten, (HSiCH₃O)-Einheiten, (CH₃)₂HSiO_{0,5}-Einheiten und (H₂SiO)-Einheiten.

4. Zusammensetzung nach Anspruch 1, worin das ethylenisch ungesättigte Isocyanurat Triallylisocyanurat ist.

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5. Zusammensetzung nach Anspruch 1, worin das Dialkylacetylendicarboxylat Dimethylacetylencarboxylat ist.

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6. Verfahren zum Herstellen einer gehärteten elektronischen Überzugszusammensetzung, umfassend das Härten der Zusammensetzung nach Anspruch 1 bei einer erhöhten Temperatur auf einem Substrat.

Revendications

1. Composition de revêtement pour composants électroniques, à durcissement latent, stabilisée vis-à-vis d'une gélification prématurée contenant :

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a. un oléfinorganopolysiloxane ayant des unités de formule :



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b. un organohydrogénopolysiloxane ayant des unités de formule :



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dans lesquelles R est choisi dans le groupe formé par les radicaux hydrocarbonés monovalents, les radicaux hydrocarbonés halogénés monovalents, les radicaux cyanoalkyle et les mélanges de ceux-ci, R' représente un radical hydrocarboné oléfinique, et dans lesquelles a est compris entre 0 et moins de 3, b est compris entre 0,0005 et 2,0 inclus, et la somme de a et b est comprise entre 0,8 et 3 inclus,

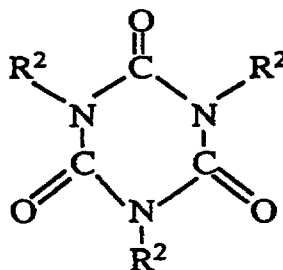
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c. un catalyseur de platine en une quantité comprise entre 1 et 50 parties de platine pour 1 million de parties d'oléfinorganopolysiloxane,

d. une combinaison d'agents d'inhibition contenant

(i) de 0,01 à 5 % en poids, par rapport au poids total de la composition de revêtement, d'un cyanurate à insaturation éthylénique correspondant à la formule structurale :

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dans laquelle les résidus R², identiques ou différents, sont choisis dans le groupe formé d'un atome d'hydrogène, de groupes alkyle, aryle, aralkyle, aryle polynucléaire, hétéroaryle, alcényle monofonctionnel en C₂₋₆ et des dérivés substitués de ceux-ci, à condition qu'au moins un des



résidus R² soit un groupe alcényle en C₂₋₆ et

(ii) de 0,05 à 2,0 % en poids, par rapport au poids total de la composition de revêtement, d'un acétylènedicarboxylate de dialkyle de formule structurale :



dans laquelle R est décrit ci-dessus, et

e. un mélange de 40 - 60 % de diméthylsiloxanes cycliques comportant de 3 à 6 groupes siloxy et de 60 - 40 % de télomères linéaires de diméthylsiloxane coiffés de groupes hydroxyle, lequel mélange a une viscosité comprise entre 0,04 et 0,4 dPa.s (4 centipoise à 40 centipoise) à 25 °C et une teneur en fonctions silanol comprise entre 0,5 et 1,5 %.

2. Composition conforme à la revendication 1 dans laquelle ledit oléfinorganopolysiloxane est un fluide de polydiméthylsiloxane linéaire coiffé de groupes diméthylvinyle, ayant une viscosité comprise entre 5 et 50 dPa.s (500 à 5000 centipoise) à 25 °C.
3. Composition conforme à la revendication 1 dans laquelle ledit organohydrogénopolysiloxane contient des unités choisies parmi les unités (HSiO_{1,5}), (HSiCH₃O), (CH₃)₂HSiO_{0,5} et (H₂SiO).
4. Composition conforme à la revendication 1 dans laquelle ledit cyanurate à insaturation éthylénique est le cyanurate de triallyle.
5. Composition conforme à la revendication 1 dans laquelle ledit acétylènedicarboxylate de dialkyle est l'acétylènedicarboxylate de diméthyle.
6. Procédé pour préparer une composition de revêtement durcie pour composants électroniques comprenant le durcissement de la composition conforme à la revendication 1 à température élevée sur un substrat.



* C L M S *