

TABLE I-continued

C	0.008	11
D	0.009	11

*The concentration is above the limit for the particular amine.

For purposes of comparison a curable composition outside the scope of this invention was prepared by blending the following ingredients to homogeneity.

36.3 parts of a dimethylvinylsiloxy endblocked polydimethylsiloxane having a viscosity of about 0.4 Pa.s at degrees 25 C.

0.45 parts of a trimethylsiloxy endblocked polydiorganosiloxane having an average of five methylhydrogensiloxane units and three dimethylsiloxane units per molecule and containing from 0.7 to 0.8 weight percent of silicon-bonded hydrogen atoms,

0.16 part of a reaction product of hexachloroplatinic acid and sym-tetramethyldivinylsiloxane that has been diluted with a liquid dimethylsiloxy terminated polydimethylsiloxane in an amount sufficient to achieve a platinum content of 0.7 weight percent, and a trace amount of a blue dye.

The resultant composition was blended together with 0.006 weight percent of n-butylamine, a heat stabilizer and color suppressant of this invention, and evaluated for color development as described in the preceding section of this example. After being heated for 1000 hours at a temperature of 150° C. the color value of the sample was 11 on the Gardner scale. A sample that did not contain the amine exhibited a lighter color of 10 on the Gardner scale when heated under the same conditions, demonstrating the selectivity of the present heat stabilizers with respect to the types of organosiloxane compositions that can be stabilized.

That which is claimed is:

1. A method for imparting resistance to heat-induced discoloration to a cured unfilled organosiloxane material prepared from a curable composition comprising the product obtained by blending to homogeneity

(A) at least one organosiloxane copolymer consisting essentially of from 80 to 96.5 mol percent of $(\text{CH}_3)_2\text{SiO}$ units, from 2.0 to 10.0 mol percent of $\text{CH}_3\text{SiO}_{1.5}$ units, from 1.25 to 6.0 mol percent of $(\text{CH}_3)_3\text{SiO}_{0.5}$ units and from 0.25 to 4.0 mol percent of $(\text{CH}_3)_2(\text{CH}_2=\text{CH})\text{SiO}_{0.5}$ units;

(B) an organohydrogensiloxane containing at least two silicon-bonded hydrogen atoms per molecule, no more than one silicon-bonded hydrogen per silicon atom and organic radicals selected from the group consisting of alkyl containing from 1 to 6 carbon atoms per radical, phenyl and 3,3,3-trifluoropropyl, said organohydrogensiloxane providing from 0.7 to 1.2 silicon-bonded hydrogen atoms per silicon-bonded vinyl radical present in said composition, and

(C) a platinum catalyst in an amount sufficient to promote the reaction of (A) and (B), where said catalyst is metallic platinum or a reaction product of a platinum compound with an organosilicon compound,

said method comprising adding to said curable composition at least one amine of the formula $\text{R}_m\text{NH}_{(3-m)}$, $\text{H}_2\text{NR}''\text{NH}_2$, or $\text{H}_2\text{NR}''\text{N}(\text{H})\text{R}''\text{NH}_2$ in an amount sufficient to inhibit discoloration of said cured composition at temperatures of up to about 200° C., where each R is individually selected from alkyl or cycloalkyl radicals, R'' represents alkylene and the value of m is 2 or 3.

2. A method according to claim 1 where the alkyl radicals represented by R and R' contain from 1 to 4

carbon atoms the cycloalkyl radical represented by R is cyclohexyl, R'' is ethylene or propylene and the concentration of said amine is from 0.001 to 0.05 weight percent, based on the total weight of said curable composition.

3. A method according to claim 2 where said organosiloxane copolymer contains from 87 to 94 mol percent of $(\text{CH}_3)_2\text{SiO}$ units, from 3 to 6 mol percent of $\text{CH}_3\text{SiO}_{1.5}$ units, from 2.5 to 5 mol percent of $(\text{CH}_3)_3\text{SiO}_{0.5}$ units and from 0.5 to 1 mol percent of $(\text{CH}_3)_2(\text{CH}_2=\text{CH})\text{SiO}_{0.5}$ units, said organohydrogensiloxane is a dimethylhydrogensiloxane endblocked polydimethylsiloxane containing from 1 to 30 dimethylsiloxane units per molecule, and said platinum catalyst is a reaction product of chloroplatinic acid with an organosilicon compound.

4. In an improved, unfilled, curable organosiloxane composition which when cured exhibits a resistance to heat-induced discoloration at temperatures up to about 200° C., said composition comprising the product obtained by blending to homogeneity

(A) at least one organosiloxane copolymer consisting essentially of from 80 to 96.5 mol percent of $(\text{CH}_3)_2\text{SiO}$ units, from 2.0 to 10.0 mol percent of $\text{CH}_3\text{SiO}_{1.5}$ units, from 1.25 to 6.0 mol percent of $(\text{CH}_3)_3\text{SiO}_{0.5}$ units and from 0.25 to 4.0 mol percent of $(\text{CH}_3)_2(\text{CH}_2=\text{CH})\text{SiO}_{0.5}$ units;

(B) an organohydrogensiloxane containing at least two silicon-bonded hydrogen atoms per molecule, no more than one silicon-bonded hydrogen per silicon atom and organic radicals selected from the group consisting of alkyl containing from 1 to 6 carbon atoms per radical, phenyl and 3,3,3-trifluoropropyl, said organohydrogensiloxane providing from 0.7 to 1.2 silicon-bonded hydrogen atoms per silicon-bonded vinyl radical present in said composition; and

(C) a platinum catalyst in an amount sufficient to promote the reaction of (A) and (B), where said catalyst is metallic platinum or the reaction product of a platinum compound with an organosilicon compound; the improvement comprising the presence in said composition of at least one amine of the formula $\text{R}_m\text{NH}_{(3-m)}$, $\text{H}_2\text{NR}''\text{NH}_2$, or $\text{H}_2\text{NR}''\text{N}(\text{H})\text{R}''\text{NH}_2$ in an amount sufficient to inhibit discoloration of said cured composition at temperatures of up to about 200° C., where each R is individually selected from alkyl or cycloalkyl radicals, R'' represents alkylene and the value of m is 2 or 3.

5. A composition according to claim 4 where the alkyl radicals represented by R and R' contain from 1 to 4 carbon atoms, the cycloalkyl radical represented by R is cyclohexyl, R'' is ethylene or propylene and the concentration of said amine is from 0.001 to 0.05 weight percent, based on the weight of said curable composition.

6. A composition according to claim 5 where said organosiloxane copolymer contains from 87 to 94 mol percent of $(\text{CH}_3)_2\text{SiO}$ units, from 3 to 6 mol percent of $\text{CH}_3\text{SiO}_{1.5}$ units, from 2.5 to 5 mol percent of $(\text{CH}_3)_3\text{SiO}_{0.5}$ units and from 0.5 to 1 mol percent of $(\text{CH}_3)_2(\text{CH}_2=\text{CH})\text{SiO}_{0.5}$ units, said organohydrogensiloxane is a dimethylhydrogensiloxane endblocked polydimethylsiloxane containing from 1 to 30 dimethylsiloxane units per molecule, and said platinum catalyst is a reaction product of chloroplatinic acid with an organosilicon compound.

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