CLAIMS

1. A one pack low temperature (<80°C) moisture crosslinkable copolymer composition, comprising:

an organosilane copolymer derived from at least A_1 and A_2 monomers, wherein the A_1 monomer comprises a vinyl ester monomer and wherein the A_2 monomer comprises a vinyl silane monomer; and

a water scavenger selected from the group consisting of a vinyl silane, an orthoester, a titanate, a zirconate, an oxazolidine, a sulfate, and combinations thereof.

2. The composition of claim 1, wherein the vinyl silane of monomer A_2 comprises vinyl trimethoxy silane or vinyl triethoxy silane.

3. The composition of claim 1, wherein the water scavenger is silane based and the composition comprises a catalyst which is a tin based or amine based derivative.

4. The composition of claim 1, wherein the water scavenger is selected from the group consisting of an orthoester and the composition comprises an acid derivative as catalyst.

5. The composition of claim 1, wherein the water scavenger comprises from 0.1 wt.% to 10 wt.% of the solid polymer composition and the polymer composition comprises 0.1 to 15% of a C1 to C6 alcohol, preferably between 0.5 and 10%.

6. The composition of claim 1, wherein the A_1 and A_2 monomers comprises

from about 15 wt.% to about 95% wt.% of A_1 monomer; and

from about 5 wt.% to about 35% wt.% of A_2 monomer, wherein the wt.% is based on the total weight of the at least A_1 and A_2 monomers and the total weight percent of the polymer is 100 wt.%.

7. The composition of claim 1, wherein organosilane resin is further derived from one or more monomers selected from the group consisting of a A_3 monomer comprising vinyl acetate, a A_4 monomer comprising an acrylate ester, a metacrylate ester, or a combination thereof, an A_5 monomer comprising an acrylosilane monomer, a methacrylo silane monomer or a combination thereof, a A_6 monomer comprising any other vinyl monomer, and combinations thereof.

8. The composition of claim 7, wherein the at least A_1 and A_2 monomers comprises:

from 10 wt.% to 95% wt.% of A_1 monomer;

from 5 wt.% to 35% wt.% of A_2 monomer;

from 0 wt.% to 75% wt.% of A_3 monomer;

from 0 wt.% to 80% wt.% of A_4 monomer;

from 0 wt.% to 30% wt.% of A_5 monomer; and

from 0 wt.% to 30% wt.% of A_6 monomer, wherein the wt.% is based on the total weight of the monomers, and the total weight percent is 100 wt.%.

9. The composition of claim 1, further comprising one or more materials selected from the group consisting of a solvent, a catalyst, a pigment, a filler, a paint additive, a C1 to C6 alcohol, a polysiloxane polymer, an adhesion promotor, and combinations thereof.

10. The composition of claim 9, wherein the composition comprises:

from 5 wt.% to 80 wt.% of the organosilane copolymer;

from 0.1 wt.% to 10% wt.% of the water scavenger;

from 5 wt.% to 60 wt.% of the solvent;

from 0.05 wt.% to 3.0 wt.% of the catalyst;

from 0 wt.% to 15 wt.% of the C1 to C6 alcohol;

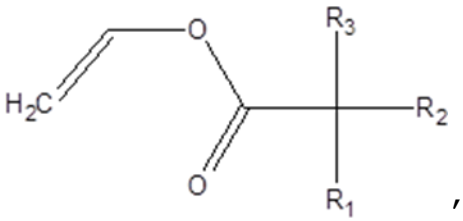
from 0 wt.% to 60% wt.% of the polysiloxane polymer;

from 0 wt.% to 4 wt.% of the adhesion promoter; and

from 0 wt.% to 60 wt.% of paint additives / pigments / fillers, wherein the wt.% is based on the total weight of the composition and the total weight percent is 100 wt.%.

11. The composition of claim 1, wherein vinyl ester monomers (A) are those derived from branched acids with a total number of Carbon atoms of R1, R2, and R3 ranging from 6 to 12.

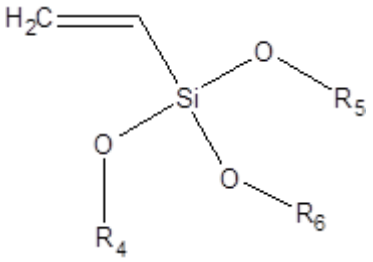
12. The composition of claim 1, wherein the vinyl ester monomer comprises the formula:



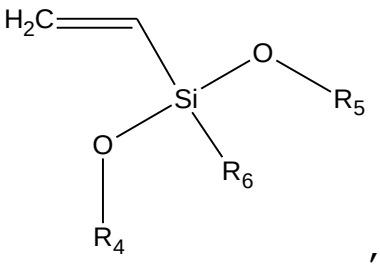
,

wherein R1, R2, R3 are hydrogen or alkyl groups with 1 to 15 carbon atoms, the total number of carbon atoms of R1, R2, and R3 ranging from 1 to 20; and

wherein the vinyl silane monomer comprises the formula:



OR



,

wherein R4, R5 and R6 are alkyl or alkyloxy groups having 1 to 4 carbon atoms.

13. An ambient temperature curing paint composition comprising the composition of claim 1.

14. An object coated with the composition of claim 1

15. An ambient temperature curing paint composition based on the composition of claim 7.

16. Any object coated with the composition of claim 7.