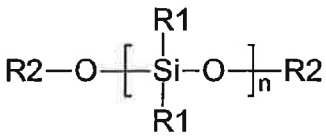
Claims

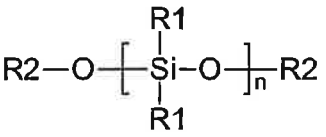
1. A coating composition comprising:
   - a linear or branched polysiloxane having the formula:



wherein each R1 is independently selected from the group of alkyl, aryl, alkoxy groups having up to eight carbon atoms, and $OSi(OR3)_3$ groups, wherein each R3 independently has the same meaning as R1, each R2 is selected from the group of hydrogen and alkyl and aryl groups having up to eight carbon atoms, and wherein n is selected such that the number average molecular weight Mn of the polysiloxane is in the range of from 200 to about 6,000, preferably 500 – 4,000,

   - one or more alkyl titanates,
   - fillers and/or pigments, e.g. talc,
   - aluminium flakes, and
   - optionally an alkyl orthosilicate or a condensation product thereof.

2. A coating composition comprising:
   - one or more branched polysiloxanes having the formula:



wherein each R1 is independently selected from the group of alkyl, aryl, alkoxy groups having up to eight carbon atoms, and $OSi(OR3)_3$ groups, wherein each R3 independently has the same meaning as R1, each R2

is selected from the group of hydrogen and alkyl and aryl groups having up to eight carbon atoms, and wherein n is selected such that the number average molecular weight Mn of the polysiloxane is in the range of from 200 to about 6,000, preferably 500 – 4,000, said polysiloxane comprising methyl and phenyl groups,

- one or more alkyl titanates,
- fillers and/or pigments, e.g. talc,
- leafing aluminium flakes, and
- optionally one or more hydrolysed ethyl orthosilicates.

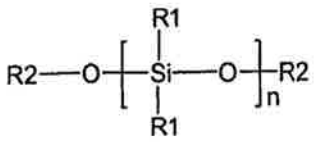
3. A substrate coated with a coating composition according to claim 1 or 2.

4. A substrate according to claim 3 characterized in that the substrate is selected from carbon steel, stainless steel, and metal coated steel, e.g. coated with thermally sprayed aluminium or zinc.

The claims defining the invention are as follows:

1. A heat and crack resistant anticorrosive coating composition capable of continuous and cyclic temperature operation, which composition comprises:

- a linear or branched polysiloxane having the formula:

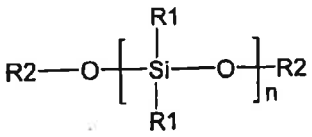


wherein each R1 is independently selected from the group of alkyl, aryl, alkoxy groups having up to eight carbon atoms, and $OSi(OR3)_3$ groups, wherein each R3 independently has the same meaning as R1, each R2 is selected from the group of hydrogen and alkyl and aryl groups having up to eight carbon atoms, and wherein n is selected such that the number average molecular weight Mn of the polysiloxanes is in the range of from 200 to about 6,000,

- one or more alkyl titanates,
- talc and/or mica or a combination thereof, and
- aluminium flakes, and
- optionally an alkyl orthosilicate or a condensation product thereof.

2. A heat and crack resistant anticorrosive coating composition capable of continuous and cyclic temperature operation, which composition comprises:

- one or more branched polysiloxanes having the formula:



wherein each R1 is independently selected from the group of alkyl, aryl, alkoxy groups having up to eight carbon atoms, and $OSi(OR3)_3$ groups, wherein each R3 independently has the same meaning as R1, each R2 is selected from the group of hydrogen and alkyl and aryl groups having up to eight carbon atoms, and wherein n is selected such that the number average molecular weight Mn of the polysiloxanes is in the range of from 200 to about 6,000, said polysiloxanes comprising methyl and phenyl groups,

- one or more alkyl titanates,
- talc and/or mica or a combination thereof, and
- leafing aluminium flakes, and

- optionally one or more hydrolysed ethyl orthosilicates.

3. The coating composition according to claim 1 or claim 2, wherein n is selected such that the number average molecular weight Mn of the polysiloxanes is in the range of about 500 to 5,000.

4. The coating composition according to claim 1 or claim 2, wherein n is selected such that the number average molecular weight Mn of the polysiloxanes is in the range of from 500 to 4,000.

5. The coating composition according to any one of the preceding claims, wherein the one or more alkyl titanates comprises a member of the group consisting of a monomeric titanate, a poly (alkyl) titanate, and a mixture thereof.

6. The coating composition according to any one of the preceding claims, wherein the polysiloxanes comprises 10 to 50 weight % of the total weight of the uncured coating composition.

7. The coating composition according to any one of the preceding claims, wherein the one or more alkyl titanates comprises 0.5 to 5 weight % of the total weight of the uncured coating composition.

8. The coating composition according to any one of the preceding claims comprising further fillers and/or pigments.

9. A substrate coated with a coating composition according to any one of the preceding claims.

10. The substrate according to claim 9 characterized in that the substrate is selected from carbon steel, stainless steel, and metal coated steel.

11. The substrate according to claim 10 wherein said metal coated steel is steel coated with thermally sprayed aluminium.

12. The substrate according to claim 10 wherein said metal coated steel is steel coated with thermally sprayed zinc.