

Claims

1. A tie-coat composition comprising one or more binder polymers obtainable by copolymerizing a mixture of ethylenically unsaturated monomers, the one or more binder polymers comprising pendant curable alkoxyethyl functional groups of general formula (I)



10 wherein:

L is a hydrocarbon linker group having 1 to 20 carbon atoms;

X is a heteroatom other than a sulphur atom, preferably an oxygen or nitrogen atom;

n is 0, 1, or 2, preferably n is 0 or 1;

15 R¹ is an alkyl radical with 1 to 20 carbon atoms; and

R² is an alkyl radical with 1 to 20 carbon atoms or an alkylalkoxy radical with 2 to 20 carbon atoms, preferably an alkyl radical with 1 to 20 carbon atoms,

20 wherein in at least 5 mole% of the curable alkoxyethyl functional groups comprised in the one or more binder polymers the hydrocarbon linker group L is a methylidyl group (L1) and in at least 5 mole% of the curable alkoxyethyl functional groups comprised in the one or more binder polymers the hydrocarbon linker group L is a hydrocarbon group having 2 to 20 carbon atoms (L2),

25 wherein the tie-coat composition does not comprise a crosslinking agent.

2. A tie-coat composition according to claim 1, wherein the molar ratio between curable alkoxyethyl functional groups with linker group L1 and curable alkoxyethyl functional groups with linker group L2 is in the range of from 15:85 to 75:25, preferably of from 20:80 to 70:30.

3. A tie-coat composition according to claim 1 or 2, wherein linker group L2 is an alkylidyl group having 2 to 6 carbon atoms, preferably a propyldyl group.
- 5 4. A tie-coat composition according to any one of the preceding claims, wherein R¹ and R² are, independently an alkyl radical with 1 to 6 carbon atoms, more preferably a methyl or ethyl radical.
- 10 5. A tie-coat composition according to any one of the preceding claims comprising a first and a second binder polymer as specified in any one of the preceding claims, wherein the curable alkoxyisilyl functional groups comprised in the first binder polymer have the linker group L1 and the curable alkoxyisilyl functional groups comprised in the second binder polymer have the linker group L2.
- 15 6. A tie-coat composition according to any one of the preceding claims, wherein the ethylenically unsaturated monomers are esters of acrylic acid and/or methacrylic acid, preferably C1-C16 esters of acrylic acid and/or methacrylic acid.
- 20 7. A tie-coat composition according to any one of the preceding claims, wherein the one or more binder polymers are, independently, obtainable by copolymerising a mixture of ethylenically unsaturated monomers with alkoxyisilyl functionality and ethylenically unsaturated monomers
- 25 monomers without alkoxyisilyl functionality.
- 30 8. A tie-coat composition according to claim 7, wherein the molar ratio of ethylenically unsaturated monomers with alkoxyisilyl functionality and ethylenically unsaturated monomers without alkoxyisilyl functionality is in the range of from 5:95 to 25:75.

9. A process for controlling aquatic fouling on a surface of a man-made object comprising:
- applying on the surface of the man-made object a first layer of a tie-coat composition according to any one of the preceding claims;
 - 5 - applying on the first layer of tie-coat composition a second layer of a topcoat composition comprising a resin with condensable silane groups; and
 - allowing the first and second coating layers to cure.
- 10 10. A process according to claim 9, wherein the resin with condensable silane groups is a curable polydiorganosiloxane resin.
11. A process according to claim 9 or 10, wherein the topcoat composition further comprises a non-volatile, non-curable fluid.
- 15 12. A process according to claim 11, wherein the non-volatile, non-curable fluid is a poly(oxyalkylene)-modified polysiloxane.
13. A process according to any one of claims 9 to 12, wherein an aged or damaged coating is present on the surface of the man-made object to which the first layer of tie-coat composition is applied.
- 20 14. A substrate coated with a tie-coat layer and a topcoat layer, wherein the tie-coat layer is deposited from a tie-coat composition according to anyone of claims 1 to 8 and the topcoat layer is deposited from a topcoat composition as define in anyone of claims 9 to 12.
- 25 15. A substrate according to claim 14, wherein the tie-coat layer is deposited on an aged or damaged coating.