SUMMARY

It has been found by the present inventor(s) that it is feasible to provide a coating composition which forms a non-erodible antifouling coat, from simple, cheap, non-reactive ingredients. The coat formed by this coating composition is therefore believed to be easy-to-clean, due to the non-erodible coating.

So, in a first example, a coating composition according to the present disclosure is provided. A non-erodible antifouling coat according to the present disclosure is also provided. A substrate, being coated on at least one surface thereof with an antifouling coat according to the invention is also provided. Furthermore, a multilayer antifouling coat system, comprising at least two paint coats, at least one of said paint coats being the non-erodible antifouling coat according to the invention is provided. A method for coating a substrate, comprising applying the acrylate coating composition of the invention, is also provided.

In an aspect, there is provided an acrylate coating composition for forming an antifouling coat, said composition comprising

a. a binder comprising a (meth)acrylate polymer, wherein said (meth)acrylate polymer is formed by polymerisation of a monomer mixture comprising an alkyl (meth)acrylate monomer, or mixture of alkyl (meth)acrylate monomers, wherein said alkyl (meth)acrylate monomer, or mixture of alkyl (meth)acrylate monomers are present in said monomer mixture in an amount of at least 90% by weight of said monomer mixture;

b. one or more non-reactive polyoxyalkylene-modified silicone oils in a total amount of 3-25 % by dry weight, preferably 5-25 %, more preferably 6.7-25%, in particular 6.7-20 %, or even more preferably 6.7-15 % by dry weight of the coating composition; and,

c. optionally, one or more solvents.

In another aspect, there is provided a non-erodible antifouling coat, said antifouling coat comprising:

a. a binder comprising a (meth)acrylate polymer, as defined above;

b. one or more non-reactive polyoxyalkylene-modified silicone oils as defined above,

c. optionally, one or more biocides, as defined above, and

d. optionally, one or more sterically hindered amines, as defined above.

In another aspect, there is provided a substrate, being coated on at least one surface thereof with an antifouling coat as defined above.

In another aspect, there is provided a multilayer antifouling coat system, comprising at least two paint coats, at least one of said paint coats being the non-erodible antifouling coat as defined above.

In another aspect, there is provided a method for coating a substrate, said method comprising applying the acrylate coating composition as defined above to said substrate and allowing the composition to dry.

Further details of the technology are provided in the claims, as well as the following description and examples.

DETAILED DISCLOSURE

The inventors of the present invention have developed a novel coating composition, which surprisingly works without a biocide, suitable for use in marine locations where biocide-containing compositions are restricted or completely outlawed.

The coating is particularly suitably for the “yacht” segment, and not only as a traditional conventional marine coating, as it can be applied regularly (e.g. before every season) as is based on a more cost-effective and simple chemistry. The “yacht” segment is not meant as limited to a particular size or type of vessel, but is intended to mean non-commercial vessels synonymous with “pleasure boats”.

Conventional antifouling systems contain erodible binders in which the binder slowly dissolves/breaks down in water. Now the inventors found that a non-erodible binder type is very useful and that, therefore, cheaper materials can be used etc.

The present antifouling coat further has the advantage that it may be washed without erosion of the coat (e.g. during mechanical or high-pressure washing).