compositions comprising tralopyril provide a solution that gives broader protection against marine fouling than other solutions without inorganic copper biocides in the market.

In order to offer long-term antifouling solutions that are economically viable to the customer it is vital that the antifouling coating polishes at a constant rate through the whole life time of the coating system to provide good fouling protection. Insuffcient fouling protection will increase the operational cost, such as fuel consumption and/or cost of underwater hull cleaning. It is also vital that the coating system can be applied in acceptable film thicknesses. High film thickness is costly for the customer with respect to the cost of the paint applied and extended time in dock resulting in increased docking fees and extended time out of business. Other disadvantages of applying high film thickness is risk of sagging during application and poor release of solvents during drying resulting in increased drying times, soft coatings and/or risk of coating failures such as blistering and flaking when immersed in sea water.

An antifouling coating composition comprising a silyl methacrylate copolymer and tralopyril having a controlled polishing and degradation rate of the coating system is therefore needed.

The present inventors have found that controlled polishing and good mechanical properties can be achieved by employing a triisopropylsilyl methacrylate copolymer and a monocarboxylic acid together with acrylic copolymers as the third component of the binder matrix, followed by optimization of the final binder mixture. They have established that using this binder in combination with tralopyril provides a self-polishing antifouling system with improved antifouling performance. Moreover, the antifouling composition of the invention has very good resistance to cracking and very good self-polishing properties.

Summary

In one aspect, the disclosure relates to an antifouling coating composition comprising:

(A) a binder comprising:

(i) 30 to 80 wt% of a silyl ester copolymer comprising triisopropylsilyl methacrylate monomers;

(ii) 20 to 55 wt% of a monocarboxylic acid or derivative thereof; and

(iii) 5 to 20 wt% of an acrylic copolymer having a glass transition temperature (Tg) of less than 25 °C;

wherein components (i) and (iii) are different; and

(B) tralopyril.

In another aspect, the disclosure provides a process for protecting an object from fouling, said process comprising coating at least a part of said object which is subject to fouling with an antifouling coating composition as defined herein.

In another aspect, the disclosure also relates to objects coated with the antifouling coating composition as defined herein.

Viewed from another example the disclosure relates to the use of the binder (A) as defined herein in an antifouling coating composition comprising tralopyril, i.e. as a binder for such a composition.

Definitions

The terms “marine antifouling coating composition”, “antifouling coating composition” or simply “coating composition” refer to a composition that, when applied to a surface, prevents or minimises growth of marine organisms on the surface.

The term “hydrocarbyl group” refers to any group containing C atoms and H atoms only and therefore covers alkyl, alkenyl, aryl, cycloalkyl, arylalkyl groups and so on.

The term “acrylic copolymer” refers to a copolymer comprising repeating units derived from (meth)acrylate monomers. Generally an acrylic copolymer will comprise at least 80 wt% of the repeating units derived from (meth)acrylate monomers, i.e. acrylate and/or methacrylate monomers.

The term “(meth)acrylate” means a methacrylate or acrylate.