

MARINE COATINGS

Applied technology for maximum performance



SIGMA*Glide*TM

Biocide-free Fouling Release Coating

No biocides - No environmental damage



Sigma Coatings is a brand of the SigmaKalon Group  SigmaKalon



*The front cover shows *Lagenorhynchus obliquidens* (the pacific white-sided dolphin) set in its natural environment. The reflection of its underbody in the glass-like sea beneath it mirrors the surface achieved with SigmaGlide™.*

A revolutionary approach to fouling control

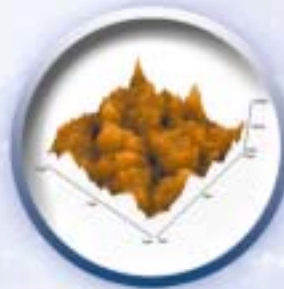
Unlike other conventional fouling protection technology, SigmaGlide™ uses absolutely no biocides.

Instead, this two-component silicone elastomeric system delivers a new and effective performance by exploiting the intrinsic properties of low surface energy.

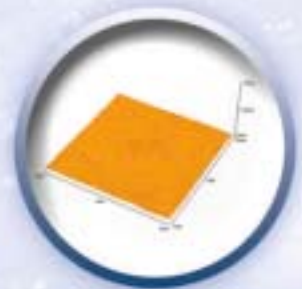
SigmaGlide™ is a coating with radically different characteristics; once applied it produces a slick, slippery hull surface to which macro and algal fouling have difficulty adhering. This fouling may settle, but once the vessel moves, water motion will cause the fouling to detach.

SigmaGlide™ is an effective solution to the problem of fouling, and is the most environmentally-friendly solution to even severe fouling challenge.

When operational speed is an essential element of the service you offer, you will find SigmaGlide™ a match for even the most demanding performance requirements.



Laser topographical scan of surface of a tin-free antifouling after 2 years' service reveals an irregular surface profile.



The same magnification of a SigmaGlide surface after similar time in service shows no discernible features and a much more "open" profile.

SigmaKalon Marine and Protective Coatings is dedicated to the development, manufacture and supply of coatings to meet the challenging needs of the marine industry. With a heritage of outstanding expertise in marine coatings technology and decades of international investment in research and development for these markets, SigmaKalon is ideally placed to meet the global challenges of this demanding sector.



Rewriting the rules of fouling control technology

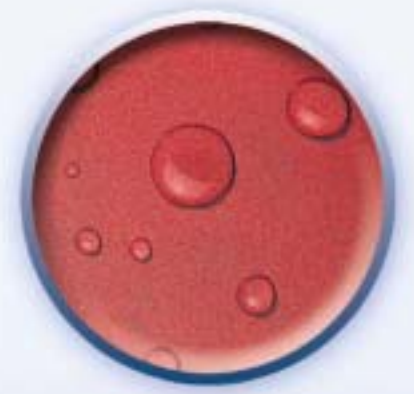
Fouling control has long relied on the controlled release of biocides from antifouling coatings; this in turn has depended on the availability of polymers which “polish” and in so doing release biocides into the seawater. SigmaGlide™ works on a physical principle – the low surface free energy and the intrinsic smoothness of the coating make it a surface that is very difficult to adhere to.

The photographs to the right, show a normal coated surface (high surface energy) – the water droplets spread out over the surface and “wet” it. Such a surface is easily fouled, adhesion of the fouling is tenacious and can be expensive to remove.

On the SigmaGlide™-coated surface by contrast, the droplets remain globular and do not spread; the surface is difficult to wet and fouling will find difficulty adhering; any macro fouling (e.g. barnacles, tubeworms, “grass”, etc) that settles when the vessel is stationary are loosely adhered and ‘released’ by water movement.



Droplets on a normal painted surface show standard surface tension and adherence



Droplets on a surface painted with SigmaGlide™ show dramatically reduced adherence



SIGMAGlide™



The smoothest SigmaGlide™


Here's why...

The environment

Biocides are under scrutiny as never before and in antifouling use they are now being closely monitored.

SigmaGlide™ is completely biocide-free; not only is this more environmentally acceptable than the use of biocide-releasing technologies but this makes it eminently suitable for use in environmental compliance programmes of major shipowners and managers.

In addition, the high solids content or low Volatile Organic Compound (VOC) and long service lifetime contribute to low solvent emissions; the numbers of empty waste drums are reduced and wash water from hull cleaning operations will not necessitate treatment as chemical waste.



Weight savings – payload gains

Current TBT-free antifouling have a high specific gravity, due to their biocide loadings (especially copper oxide). SigmaGlide™ has a considerably lower specific gravity and this translates into less coating weight applied on the external hull and therefore the opportunity to accommodate extra payload, which is important for fast passenger catamarans and RoRo passenger ferries.

operators use



Surface smoothness and hull roughness

The extremely smooth surfaces that can be generated by the application of SigmaGlide™ also translate into exceptionally smooth hulls. This can also be seen in the almost mirror-like quality of SigmaGlide™ coated hulls when application is carried out responsibly. Indeed average hull roughness values of around 70 µm have been obtained for well-controlled applications on large ships.

SigmaGlide™ 790 (*SigmaGlide Tiecoat*)

- Two components silicone based tiecoat for fouling release system
- Essential for adhesion of SigmaGlide system on epoxy anticorrosive
- Tough
- Quick drying and overcoatable
- Wide application window

SigmaGlide™ 890

- Biocide-free silicone finish
- Very smooth and easy to clean
- Excellent, long term fouling release properties
- Available in a range of colours; good colour retention
- Extended drydocking periods possible





SigmaGlide™

*best in class for all-round
fouling control*

SigmaGlide™ shows excellent colour retention with no film degradation after long immersion periods; it can thus be used to provide extended inter-docking service periods.

The fouling release properties of SigmaGlide™ have proven to be so successful that the system is now being used on a whole range of ship types from Navy vessels to tugs and from container ships to tankers. All show the advantages of using the premium fouling release coating on the market.

SigmaGlide™ – key characteristics

- Biocide free coating for fouling control
- Not subject to local environmental legislation
- 'Releases' macro fouling in service
- Easily cleaned after service
- Excellent colour and gloss retention
- Very smooth surface aids fuel performance
- Cost benefits accrue according to ship type and operation
- High solids coatings with low VOC impact
- Low weight systems for fast craft
- Copper-free for application on aluminium hulls
- Extended in-service periods
- Suitable for all waters

The SigmaGlide™ range *of biocide free fouling control*

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SigmaKalon Marine and Protective Coatings

SigmaKalon Marine and Protective Coatings brings unrivalled levels of experience and expertise in coatings technology through our expanding global supply and distributor network. We understand our customer needs and the challenges they face and respond quickly with effective economic solutions, working closely to develop the products they need.

Formulations that can be applied more easily, resist the elements better and reduce overall environmental impact in compliance with both local and international standards.

With in-depth knowledge of the working realities facing the industries we supply, our Technical Service Representatives offer an unsurpassed perspective on the coatings options that can help your industry to function optimally, maximising technical performance and minimising expensive down time.



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