

## Fact sheet Hempaguard X7<sup>®</sup>

### Highlights:

- Documented performance and a proven track record with over 2,000 vessels applications since its launch in 2013.
- Total fuel reduction of 7.6 million tons, leading to a reduction of the collective fuel bill of these 2,000 vessel applications by at least USD 2.6 billion and 23.5 million tons of associated CO<sub>2</sub> emissions – this is equivalent to the emissions from 1.2 million passenger cars per year since 2013.
- Delivers up to 90 months efficient fouling defence with no limitation on service speeds, for any type of vessel with any trading pattern.
- Average of six per cent out-of-dock fuel savings compared with best-in-class antifoulings over the entire docking interval.
- Maximum speed loss\* of 1.4 per cent over the service interval.
- Antifouling guarantee for idle periods of up to 120 days.
- 95 per cent less biocide than traditional antifoulings.

### **In a nutshell:**

The Hempaguard coating is a silicone which exhibits superior non-stick properties – to help repel organisms – and deliver a lower frictional resistance to aid the movement of the ship's hull through the water. A biocide-activated hydrogel is formed on the surface of the silicone coating and as the biocide diffuses out of the film it is trapped in the hydrogel layer. This increases its surface concentration and prolongs the time the biocide is retained at the surface of the coating – where it is most effective. This means that considerably less biocide is needed compared with standard coatings, yet it is much more effective at preventing the settlement of biofouling organisms. Additionally, low biocide concentration also allows the silicone coating to retain all its non-stick properties and smoothness. And all of this in one single coat.

***\*Speed loss:** If a vessel's main engine is set at a certain power output, it will propel the ship through the water at a certain speed. Over time, fouling accumulation will increase drag and cause the speed of the ship to reduce even if the main engine power output remains constant. This reduction in speed is termed "speed loss".*