# Hempaguard X8 89940

## Product characteristics

**Description**
Hempaguard X8 is an advanced fouling defence coating based on ActiGuard® technology which utilizes the added effect of advanced hydrogel silicone and an efficient fouling preventing biocide to boost the antifouling barrier, prolong the fouling free period and minimize hull roughness. Hempaguard X8, possesses a very high fuel saving potential and is also suitable for vessels operating with long service intervals (up to 90 months) and/or very long idle periods (up to 120 days). Hempaguard X8 is an advanced fouling defence coating, based on silicone, with high solids content.

**Recommended use**
For all vessels, with no limitation on service speeds, including slow/ultraslow steaming vessels.
The product is also suitable for propellers.
This product does not contain organotin compounds acting as biocides and complies with the International Convention on the Control of Harmful Antifouling Systems on Ships as adopted by IMO October 2001 (IMO document AFS/CONF/26).

**Service temperature:**
- Minimum, recommended by Hempel for dry exposure: -50°C [-58°F].

**Features**
- Excellent operational flexibility.
- High to low activity level.
- Very smooth coating surface and low friction.
- Maximised out docking fuel performance.
- Very high fuel saving potential.
- Instant effect on contact with water.
- Easy overcoating.
- Application in warm environment.
- Can be applied down to 0°C [32°F].

## Product safety

**Flash point** 26°C [79°F]

**VOC content mixed product**

| Legislation | Value |
|---|---|
| EU | 168 g/L [1.40 lb/US gal] |
| US (coatings) | 165 g/L [1.38 lb/US gal] |
| US (regulatory) | 165 g/L [1.38 lb/US gal] |
| China | 168 g/L [1.40 lb/US gal] |

According to specific legislation, see details in the Explanatory Notes available at Hempel website, hempel.com or at your local Hempel website.

**Handling**
Handle with care. Before and during use, observe safety labels on packaging and paint containers and follow all local and national safety regulations. Always consult Hempel's Safety Data Sheet for this product along with the Product Data Sheet.

For professional use only.

## Product data

**Product code:** 89940

**Product components:** Base 89949 | Curing Agent 98985

**Standard shade* / code:** Brownish red 59161

**Gloss:** Glossy

**Volume solids:** 80 ± 2%

**Specific gravity:** 1 kg/L [9 lb/US gal]

**Reference dry film thickness:** 200 micron [8.0 mils]

## Surface preparation

**Cleanliness**
- According to Hempel's Specification.

New build:
- According to Hempel's Specification.

Maintenance and Repair
- According to Hempel's Specification.

Consult Hempel's separate Surface Preparation Guidelines for more details.

* Other shades are available, please contact your local Hempel representative.

# Hempaguard X8 89940

## Application

**Mixing ratio**
Base 89949 : Curing Agent 98985
(18.2 : 1.8 by volume)

Stir well before use. It is recommended to use fixed volumes/can size for multi-component products. Do not open or mix the cans before the paint will be applied. Consult Hempel regarding thinning.

**Thinner**
Hempel's Thinner 08080

**Cleaner**
Hempel's Thinner 08080

**Pot life**

| Product temperature | 20°C [68°F] |
|---|---|
| Pot life | 60 min |

**Application method**

| Tool | Application parameters |
|---|---|
| Airless spray | Nozzle pressure: 150 bar [2200 psi]<br>Nozzle orifice: 0.019-0.021" |
| Brush/Roller | - |

If brush or roller application is used, more coats will be necessary to achieve the specified dry film thickness. Spray data are indicative and subject to adjustment. Pressure is for a material temperature of 20°C [68°F].

**Film thickness**

| Specification range | Low | High | Recommended |
|---|---|---|---|
| Dry film thickness | 100 micron [4.0 mils] | 250 micron [10 mils] | 200 micron [8.0 mils] |
| Wet film thickness | 125 micron [5.0 mils] | 312 micron [12 mils] | 250 micron [10.0 mils] |
| Theoretical spreading rate | 8 m²/L [326 sq ft/US gal] | 3.2 m²/L [130 sq ft/US gal] | 4 m²/L [163 sq ft/US gal] |

Product may be specified in another film thickness than indicated depending on purpose and area of use. This will alter spreading rate, drying and curing time and overcoating interval. It is vital that the specified minimum dry film thickness is uniformly achieved. Checking paint consumption per area can improve the control of film thickness.

**Application conditions**
- To avoid condensation, apply on a clean and dry surface with a temperature that is at least 3°C [5°F] above the dew point.
- Surface temperature must be above 0°C [32°F] during application and curing.
- According to Hempel's Specification.
- Temperature of product must be above 15°C [59°F] during application.

**Relative Humidity:**
- Relative humidity must be in the range 30-85% during curing.
- Relative humidity must be in the range 30-85% during application.

**Application remarks**
- Consult Hempel's Guidelines for application of silicone systems.

## Drying and overcoating

**Product compatibility**
- Previous coat: According to Hempel's Specification.
- Subsequent coat: None or according to Hempel's specification.

**Drying time**

| Surface temperature | | 10°C [50°F] | 20°C [68°F] | 30°C [86°F] |
|---|---|---|---|---|
| Hard dry | hours | 3 | 1 | ¾ |

Determined for dry film thickness 200 micron [8.0 mils] at standard conditions, see Hempel's Explanatory Notes for details. The drying times of moisture curing products will depend on the relative humidity, therefore drying times in the field could vary.

**Drying conditions**
- To obtain the drying time stated, it is important to maintain sufficient ventilation during application, drying and curing.
- Condensation on the freshly applied coating should be avoided.
- According to Hempel's Specification.

**Overcoating details**
- The surface must be dry and clean prior to application.
- According to Hempel's Specification.

**Other remarks**
- Consult Hempel for information on the minimum undocking time.
- Hempel's Specification supersedes any recommendations given in the Product Data Sheets.

# Hempaguard X8 89940

## Storage

### Shelf life

| Ambient temperature | 25°C [77°F] |
|---|---|
| Base | 24 months |
| Curing Agent | 12 months |

Shelf life from date of production, when stored in original, unopened containers. Thereafter, the product quality must be re-inspected. Storage at elevated temperatures may reduce shelf life. The shelf life printed on product labels is based on regional climate conditions. For advice, please consult Hempel.

### Storage conditions

- The product must be stored in accordance with Safety Data Sheet, label and local regulations. Keep the containers in a dry, shaded, cool, well-ventilated space and away from sources of heat and ignition. Containers must be kept tightly closed. Handle with care.

## Carbon Footprint

| Dry film thickness | 1 µm | 1 mil |
|---|---|---|
| GWP (Global Warming Potential) | 11.2 g $CO_2e/m^2$ | 0.058 lb $CO_2e/ft^2$ |

The carbon footprint is for 1 square meter / square foot of surface area with a dry film thickness of 1 micron / mil.

The scope includes raw materials, in-bound transport to the Hempel factory, Hempel manufacturing processes, and any Volatile Organic Compounds emitted during and after the application of the product.

It is calculated based on the standard shade defined in this PDS. Values may vary with shade.

## Additional documents

Additional information is available at the Knowledge Center: https://www.hempel.com/knowledge-center . The documents below can be found in the Technical Guidelines section: https://www.hempel.com/knowledge-center/technical-guidelines or at the Hempel website.

- Explanatory Notes for Product Data Sheet.
- Application methods.
- Surface Preparation.
- Application Instruction for this product.
- General guidelines for application of Hempaguard /Hempasil coating systems.

This Product Data Sheet ("**PDS**") relates to the supplied product ("**Product**") and is subject to updating from time-to-time. Accordingly, the buyer/applicator should have regard to the PDS supplied together with the relevant batch of the Product (and not an earlier version). In addition to the PDS, the buyer/applicator may receive some or all of the following specifications, statements and/or guidelines as listed below or as are available from the Hempel website under 'Products' at www.hempel.com (the "**Additional documents**"):

| No. | Document description | Location/comments |
|---|---|---|
| 1. | Technical Statement | One-off specific advice provided on request for specific projects |
| 2. | Specification | Only issued for specific projects |
| 3. | PDS | This document |
| 4. | Explanatory Notes to the PDS | Available at www.hempel.com and contain relevant information about the Product testing parameters |
| 5. | Application Instruction | Where available, at www.hempel.com |
| 6. | Generic technical guidelines (e.g. on application and surface preparation) | Where available, at www.hempel.com |

In the event of a conflict of information between the PDS and the Additional documents, the order of priority of information shall be in the order as set out above. In such event you should also contact your representative at Hempel for clarification. Furthermore, the buyer/applicator must have full regard to the relevant Safety Data Sheet provided with each Product and which can also be downloaded from www.hempel.com.

Hempel shall not be liable for defects where the application of the Product has not been made fully in accordance with the recommendations and requirements set out in the relevant PDS and the Additional Documents. The information and terms of this disclaimer apply to this PDS, the Additional documents and any other documents supplied by Hempel in respect of the Product. In addition, the Product is supplied and all technical assistance is given subject to Hempel's General Conditions of Sale, Delivery and Service, unless otherwise expressly agreed in writing.