Hempaguard X5 89700

Product characteristics

Description
Hempaguard X5 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. This boosts the antifouling barrier and prolongs the fouling free period. HEMPAGUARD X5 therefore possesses a fairly high fuel saving potential. Hempaguard X5 is an advanced fouling defence coating with high solids content. The product is based on silicone, and cures after addition of Crosslinker 98980.

Recommended use
For vessels with service speeds above 8 knots and activity higher than 50%. The product can also be used 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].

Product safety

Flash point 28°C [82°F]

VOC content mixed product

Legislation	Value
EU	272 g/L [2.27 lb/US gal]
US (coatings)	272 g/L [2.27 lb/US gal]
US (regulatory)	272 g/L [2.27 lb/US gal]
China	272 g/L [2.27 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: 89700

Product components: Base 89709 | Curing Agent 98980

Standard shade* / code: Brownish red 59161

Gloss: Glossy

Volume solids: 69 ± 2%

Specific gravity: 1 kg/L [8 lb/US gal]

Reference dry film thickness: 150 micron [6.0 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.

Application

Mixing ratio
Base 89709 : Curing Agent 98980
(17.8 : 2.2 by volume)

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. Stir well before use. Thinning is usually not needed, consult Hempel's specification

Thinner
Hempel's Thinner 08080

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

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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] 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]	150 micron [6.0 mils]	150 micron [6.0 mils]
Wet film thickness	146 micron [5.8 mils]	219 micron [8.8 mils]	219 micron [8.8 mils]
Theoretical spreading rate	6.8 m²/L [277 sq ft/US gal]	4.6 m²/L [187 sq ft/US gal]	4.6 m²/L [187 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.
- Provide adequate ventilation during application and drying.
- According to Hempel's Specification.

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
- In order to avoid contamination on other areas, masking is recommended.
- Consult Hempel's Guidelines for application of silicone systems.

Drying and overcoating

Product compatibility
- Previous coat: According to Hempel's Specification. Recommended product is: Hempasil
- 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	3½	1	½

Determined for dry film thickness 150 micron [6.0 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.

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.

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Storage conditions
- Must be stored under absolutely dry conditions, protect against seeping humidity.
- 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)	11.7 g CO_2e/m^2	0.061 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.
- General Application Guidelines
- Consult Hempel's separate guideline on general requirements for Hempaguard/Hempasil application.

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.