

Hempadur 85671

Product characteristics

Description

Hempadur 85671 is an amine adduct cured, phenolic epoxy (novolac) coating with very good adhesion and excellent chemical and high temperature resistance.

Recommended use

Lining: As interior lining in tanks, pipelines, railcars, etc. for hot water, brine, crude oil, vegetable oils and other chemicals as per the Chemical protection guide (only valid for shades 11150 & 50900).

Subsea equipment: As corrosion protection for hot subsea equipment and structures according to NORSOK system 7C.

Service temperature:

- From -196°C [-321°F] up to 205°C [401°F] for dry or dry/wet exposure.
- Maximum, in water (no temperature gradient): 95°C [203°F].
- Other liquids: Please contact Hempel.
- Please consult the Chemical protection guide at hempel.com.

Certificates / Approvals

- Approved by WRAS for contact with potable water. Please consult <https://www.wrasapprovals.co.uk/approvals-directory/?search=Hempel&page=0> for detailed information. The WRAS approval is valid after the final coat has cured for at least 7 days at 20°C followed by 20 hours at 40°C.
- Complies with US FDA and EU food regulations for contact with liquid and dry foodstuff. Consult Hempel for details.
- Meets requirements to NORSOK M-501 when used as part of a predefined paint system. Edition 6, System 3C, 3D, 3E, 3F. Edition 7, System 7C, 7F.
- Tested and assessed according to Aramco SAES-H-101. APCS 2A, 2B, 2C.

Product safety

Flash point 26°C [79°F]

VOC content mixed product

Legislation	Value
EU	317 g/L [2.65 lb/US gal]
US (coatings)	317 g/L [2.65 lb/US gal]
US (regulatory)	317 g/L [2.65 lb/US gal]
China	317 g/L [2.65 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. VOC values may vary with shade, please consult the Safety Data Sheet, section 9.

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

85671

Product components

Base 85675
Curing Agent 97371

Standard shade* / code

Light grey 11150 **

Gloss

Flat

Volume solids

68 ± 2%

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

** Slight discolouration may occur. This does not affect the performance of the coating.

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Specific gravity

1.7 kg/L [14 lb/US gal]

Reference dry film thickness

100 micron [4.0 mils]

Surface preparation

Cleanliness

- Remove oil, grease and other contaminants by suitable detergent cleaning.
- Remove salts, detergents and other contaminants by high pressure fresh water cleaning.
- Concrete: According to Hempel's Specification.

New build:

- Abrasive blasting to min. Sa 2½ (ISO 8501-1) / SP 10 (SSPC).
- Stainless steel, aluminium and other non ferric metals and alloys: use non-metallic blast media (corundum, garnet, etc.).
- Remove dust, blast media and loose materials.

Maintenance and Repair

- Spot abrasive blasting to min. P Sa 2½ (ISO 8501-2) / SP 10 (SSPC).
- Stainless steel, aluminium and other non ferric metals and alloys: use non-metallic blast media (corundum, garnet, etc.).
- Remove dust, blast media and loose materials.

Roughness

- Surface profile Medium (G) (ISO 8503-2).

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

Application

Mixing ratio

Base 85675 : Curing Agent 97371
(8.8 : 1.2 by volume)

Stir well before use.

Thinner

Hempel's Thinner 08450
Hempel's Thinner 08630

Cleaner

Hempel's Tool Cleaner 99610

Pot life

Product temperature	20°C [68°F]	15°C [59°F]	30°C [86°F]
Induction time	15 min	20 min	5 min
Pot life	3 hours	3½ hours	1 hour

Application method

Tool	Thinning max vol.	Application parameters
Airless spray	10%	Nozzle pressure: 200 bar [2900 psi] Nozzle orifice: 0.017-0.021"
Brush	10%	Not Applicable.

If brush or roller application is used, more coats will be necessary to achieve the specified dry film thickness. As tank lining, brush and roller application must only be limited to stripe coating and touch up areas or minor repairs. Spray data are indicative and subject to adjustment. Pressure is for a material temperature of 20°C [68°F].

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Film thickness

Specification range	Low	Recommended	High
Dry film thickness	90 micron [3.6 mils]	100 micron [4.0 mils]	175 micron [7.0 mils]
Wet film thickness	133 micron [5.3 mils]	147 micron [5.9 mils]	258 micron [10 mils]
Theoretical spreading rate	7.5 m ² /L [306 sq ft/US gal]	6.8 m ² /L [277 sq ft/US gal]	3.9 m ² /L [159 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. For best performance, avoid excessive film thickness.

Application conditions

- Temperature of product must be above 15°C [59°F] during application.
- 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 10°C [50°F] during application and curing.

Relative Humidity:

- Relative humidity must be below 80% during curing.
- Relative humidity must be below 80% during application.

Drying and overcoating

Product compatibility

- Previous coat: None or 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]	40°C [104°F]
Touch dry	hours	6	2	1½	1
Surface dry	hours	6	3	1½	1
Hard dry	hours	11	6½	3	1½
Fully cured	days	13	7	5	3

Determined for dry film thickness 100 micron [4.0 mils] at standard conditions, see Hempel's Explanatory Notes for details.

Overcoating

Hempel's specification supersedes any guidelines indicated in the overcoating table

Quality name		10°C [50°F]	20°C [68°F]	30°C [86°F]	40°C [104°F]
Atmospheric severe					
Hempadur 85671	Min	25 h	16 h	8 h	5 h
	Max	47 d	21 d	10 d	6½ d
Immersion					
Hempadur 85671	Min	25 h	16 h	8 h	5 h
	Max	47 d	21 d	10 d	6½ d

Overcoating times are indicative for products of the same generic chemistry. Consult Hempel's specification for more information.

Drying conditions

- To obtain the drying time stated, it is important to maintain sufficient ventilation during application, drying and curing.

Overcoating details

- If the maximum overcoating interval is exceeded, roughening of the surface is necessary to ensure intercoat adhesion.
- The surface must be dry and clean prior to application.

Other remarks

- Epoxy coats have an inherent tendency of chalking in outdoor exposure. This does not affect the performance of the coating.
- Hempel's Specification supersedes any recommendations given in the Product Data Sheets.

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Storage

Shelf life

Ambient temperature	25°C [77°F]
Base	12 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. For advice, please consult Hempel.

Storage conditions

- Product must be stored according to local legislation, at maximum 40°C [104°F], without direct sunlight and protected from rain and snow.

Carbon Footprint

Dry film thickness	1 µm	1 mil
GWP (Global Warming Potential)	9.1 g CO ₂ e/m ²	0.047 lb CO ₂ e/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 Hempel website <https://www.hempel.com/service-and-support/technical-guidelines> or at your local Hempel website:

- Explanatory Notes for Product Data Sheet.
- Application methods.
- Substrates.
- Surface Preparation.
- Application Instruction for this product.
- Repair & maintenance.
- Inspection & quality control.
- Tank linings.
- For further information see Hempel's Technical Guidelines.

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.