

# Technical Data Sheet



## SeaForce 90

### Product description

This is a one component acrylic, hydrolysing antifouling coating based on ion exchange technology. It provides very good fouling protection and improved hull performance. This is achieved through self polishing characteristics reducing hull deterioration, friction and speed loss. To be used as finish coat in immersed environments only. Suitable on approved primers and tie coats on aluminium and carbon steel substrates. It can be applied at sub zero surface temperatures.

### Typical use

Recommended for underwater hull in newbuilding and drydocking. Designed as an efficient solution for vessels trading at a wide range of speed and activity. The product can be used for long service periods up to 60 months as a part of a complete coating system.

### Typical trade

Suited for vessels operating in global service, including fresh water exposure during newbuilding outfitting. Recommended for deep sea trade.

### Approvals and certificates

Compliant with IMO Antifouling System Convention AFS/CONF/26.

Additional certificates and approvals may be available on request.

### Colours

Standard: dark red, light red  
(made to order: blue, black, green)

### Product data

Property	Test/Standard	Description
Solids by volume	ISO 3233	58 ± 2 %
Flash point	ISO 3679 Method 1	28 °C
Density	calculated	1.7 kg/l
VOC-US/Hong Kong	US EPA method 24 (tested) (CARB(SCM)2007, SCAQMD rule 1113, Hong Kong)	384 g/l
VOC-EU	IED (2010/75/EU) (theoretical)	400 g/l
VOC-China	GB/T 23985-2009 (tested)	399 g/l
VOC-Korea	Korea Clean Air Conservation Act (tested) (Max. thinning ratio included)	422 g/l

The provided data is typical for factory produced products, subject to slight variation depending on colour.

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## Film thickness per coat

### Typical recommended specification range

Dry film thickness	75 - 175	µm
Wet film thickness	130 - 300	µm
Theoretical spreading rate	7.7 - 3.3	m <sup>2</sup> /l

Max total DFT for multiple coats in the antifouling system: 500 µm

## Surface preparation

To secure lasting adhesion to the subsequent product all surfaces shall be clean, dry and free from any contamination.

### Surface preparation summary table

Substrate	Surface preparation	
	Minimum	Recommended
Coated surfaces	<p>New tie coat or new antifouling: Remove any contamination that could interfere with the intercoat adhesion. Exceeding maximum recoat intervals will require cleaning/abrading and/or application of additional coats, depending on condition.</p> <p>Aged antifouling with leached layer: Removal by thorough fresh water washing at minimum nozzle pressure 200 bar.</p>	<p>New tie coat or new antifouling: Remove any contamination that could interfere with the intercoat adhesion. Exceeding maximum recoat intervals will require cleaning/abrading and/or application of additional coats, depending on condition.</p> <p>Aged antifouling with leached layer: Removal by thorough fresh water washing at minimum nozzle pressure 340 bar.</p>

## Application

### Application methods

The product can be applied by

Spray:	Use airless spray.
Brush:	May be used. Care must be taken to achieve the specified dry film thickness.
Roller:	May be used. Care must be taken to achieve the specified dry film thickness.

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### Product mixing

Single pack

### Thinner/Cleaning solvent

Thinner: Jotun Thinner No. 7

### Guiding data for airless spray

Nozzle tip (inch/1000): 21-31  
 Pressure at nozzle (minimum): 150 bar/2100 psi

## Drying and Curing time

Substrate temperature	-10 °C	0 °C	5 °C	10 °C	23 °C	40 °C
Surface (touch) dry	5 h	2 h	1 h	45 min	30 min	30 min
Dry to over coat, minimum	48 h	36 h	12 h	9 h	7 h	6 h
Dried/cured for immersion	48 h	36 h	12 h	12 h	10 h	8 h

For maximum overcoating intervals, refer to the Application Guide (AG) for this product.

When three or more antifouling coats are applied in rapid succession it is recommended to double the time for immersion.

Drying and curing times are determined under controlled temperatures and relative humidity below 85 %, and at average of the DFT range for the product.

Surface (touch) dry: The state of drying when slight pressure with a finger does not leave an imprint or reveal tackiness.

Dry to over coat, minimum: The recommended shortest time before the next coat can be applied.

Dried/cured for immersion: Minimum time before the coating can be permanently immersed in sea water.

## Recommended type of primer

Anticorrosive primer system suitable for purpose. Recommended tie coat for the subsequent antifouling coat is:  
 Safeguard Universal ES  
 Safeguard Plus

## Packaging (typical)

	Volume (litres)	Size of containers (litres)
SeaForce 90	20	20

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The volume stated is for factory made colours. Note that local variants in pack size and filled volumes can vary due to local regulations.

## Storage

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

### Shelf life at 23 °C

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18 month(s)

For other colours than red, the shelf life is 6 months.

In some markets commercial shelf life can be dictated shorter by local legislation. The above is minimum shelf life, thereafter the paint quality is subject to re-inspection.

## Caution

This product is for professional use only. The applicators and operators shall be trained, experienced and have the capability and equipment to mix/stir and apply the coatings correctly and according to Jotun's technical documentation. Applicators and operators shall use appropriate personal protection equipment when using this product. This guideline is given based on the current knowledge of the product. Any suggested deviation to suit the site conditions shall be forwarded to the responsible Jotun representative for approval before commencing the work.

## Health and safety

Please observe the precautionary notices displayed on the container. Use under well ventilated conditions. Do not inhale spray mist. Avoid skin contact. Spillage on the skin should immediately be removed with suitable cleanser, soap and water. Eyes should be well flushed with water and medical attention sought immediately.

## Colour variation

When applicable, products primarily meant for use as primers or antifoulings may have slight colour variations from batch to batch. Such products may fade and chalk when exposed to sunlight and weathering.

Colour and gloss retention on topcoats/finish coats may vary depending on type of colour, exposure environment such as temperature, UV intensity etc., and application quality. Contact your local Jotun office for further information.

## Disclaimer

The information in this document is given to the best of Jotun's knowledge, based on laboratory testing and practical experience. Jotun's products are considered as semi-finished goods and as such, products are often used under conditions beyond Jotun's control. Jotun cannot guarantee anything but the quality of the product itself. Minor product variations may be implemented in order to comply with local requirements. Jotun reserves the right to change the given data without further notice.

Users should always consult Jotun for specific guidance on the general suitability of this product for their needs and specific application practices.

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If there is any inconsistency between different language issues of this document, the English (United Kingdom) version will prevail.

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This Technical Data Sheet supersedes those previously issued.

The Technical Data Sheet (TDS) is recommended to be read in conjunction with the Safety Data Sheet (SDS) and the Application Guide (AG) for this product. For your nearest local Jotun office, please visit our website at [www.jotun.com](http://www.jotun.com)