Certificate No:
**TAK00001V6**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the TBT-Free Anti-Fouling Systems**

with type designation(s)
**SeaForce Active Ace**

Issued to
**Jotun A/S**
**SANDEFJORD, Norway**

is found to comply with
**DNV GL class programme DNVGL-CP-0110 – Type approval – Anti-fouling systems**

## Application :

**Organo-tin free hydrolysing type anti-fouling system.**

**Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

Issued at **Høvik** on **2020-02-03**
This Certificate is valid until **2025-02-02**.
DNV GL local station: **Sandefjord**

Approval Engineer: **Stefan Marion**

for **DNV GL**

**Gustav Heiberg**
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.


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## Product description

Organo-tin free hydrolysing type anti-fouling paint; **SeaForce Active Ace**

Colours:
The product may be available in various colours. Please contact the local Jotun representative for details.

Active ingredients:

| | |
|---|---|
| Cuprous oxide | CAS No. 1317-39-1 |
| Copper pyrithione | CAS No. 14915-37-8 |
| Zineb | CAS No. 12122-67-7 |

## Manufactured by

**Chokwang Jotun Ltd. – Head Office**, 96, Gwahaksandan, 1-ro, Gangseo-gu, Busan, 46742, Republic of Korea

DNV GL local station: Gimhae

## Responsibility

The Company (stated on the front page of this Certificate) takes the responsibility that both design and production are in compliance with Rules, Standards and/or Regulations listed on page 1 of this certificate.

## Application/Limitation

The issuance of this certificate is solely connected to the control of the Anti-Fouling System, AFS, with regard to compliance with the International Convention on the Control of Harmful Anti-Fouling Systems on Ships.

It does not cover verification of surface preparation, corrosion protection, fire, health and safety precautions, durability of the AFS or environmental properties other than regulated by the Convention.

## Type Approval documentation

## Tests carried out

Type Testing carried out in accordance with **Type Approval documentation**, with the following test result, ref. Test Report from SINTEF Molab as of 2019-11-11:

- SeaForce Active Ace: <0,02% (No TBT-compounds detected)

## Marking of product

Product shall be marked with *manufacturer's name*, *place of production* and *type designation*.

The marking is to be carried out in such a way that it is visible, legible and indelible. The marking of product is to enable traceability to the DNV GL Type Approval Certificate.

## Periodical assessment

The scope of the Periodical Assessment is to verify that the conditions stipulated for the Type Approval is complied with and that no alterations are made to the product design or choice of materials.

Periodical assessments (for Certificate Retention and Certificate Renewal) shall be performed according to DNVGL-CP-0338.

This certificate is only valid if required Periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in https://approvalfinder.dnvgl.com

END OF CERTIFICATE