

**TYPE APPROVAL CERTIFICATE****This is to certify:****That the Foam Fire Extinguishing Liquid**with type designation(s)  
**STHAMEX-SV-HT 2% F-10 #9273**

Issued to

**Fabrik Chemischer Präparate von Dr.Richard Sthamer GmbH  
& Co.KG  
Hamburg, Germany**

is found to comply with

**DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations  
DNV GL rules for classification – Ships  
DNV GL offshore standards****Application :****Approved for use as a high expansion foam forming liquid in approved fixed and mobile fire extinguishing systems.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Hamburg** on **2019-06-20**This Certificate is valid until **2024-06-19**.DNV GL local station: **Essen**Approval Engineer: **Andrii Pishchanskyi**for **DNV GL**Digitally Signed By: Markus, Hagen  
Location: DNV GL SE Hamburg, Germany  
Signing Date: 2019-06-20 , on behalf of**Olaf Drews  
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.



Job Id: **262.1-001676-17**  
Certificate No: **TAF0000012**  
Revision No: **1**

## Product description

"STHAMEX-SV-HT 2% F-10 #9273" is a synthetic high expansion foam concentrate (S).

## Application/Limitation

The foam concentrate is approved for use as a low expansion foam concentrate (Type B) against hydrocarbon (non-polar solvent) fires for fixed and mobile fire-fighting systems.

Characteristic	Value
Nominal mixing ratio with seawater <sup>1)</sup>	2 %
Kinematic viscosity <sup>1)</sup> (20 °C)	13.4 cSt
pH value <sup>1)</sup> (20 °C)	6.7
Expansion ratio <sup>1)</sup>	810
Drainage time <sup>1)</sup> (25%)	14:20 (min:s)
Volumetric mass / density <sup>1)</sup> (20 °C)	1.0302 g/ml
Storage and application temperature	-10°C up to 50°C
Onboard tank / storage material	Shall be in original packaging as per manufacturer's data sheet No. PD - 9273 - V08 - STHAMEX-SV-HT 2% F-10 #9273 - EN, Version 08 dated 2018-01-30

Footnote

1) Values from the test report No. F900101rev1 dated 2015-04-29 issued by SP

This approval does not address the foam generating equipment, only the foam concentrate.

The storage facilities and piping arrangement onboard the vessel are to be designed and constructed with regard to seawater exposure (where applicable) and the minimum allowed temperature for the foam liquid.

Foam concentrate use, packaging, storage and transport are to be in accordance with the manufacturer's instructions:

- Data sheet No. PD - 9273 - V08 - STHAMEX-SV-HT 2% F-10 #9273 - EN, Version 08 dated 2018-01-30;
- Safety Data Sheet according to Regulation (EC) No. SD - 9273 - V14 - STHAMEX-SV-HT 2% F-10 #9273 - EN, Version V-14 dated 2018-05-16.

Each product is to be supplied with its manual for application, use, storage, transport and maintenance.

The foam concentrate does not contain PFOS.

The validity of the certificate is dependent on the compliance of each manufactured product with the prototype which underwent the type approval tests and such compliance shall be stated in a declaration of conformity by the manufacturer.

Periodical controls of foam concentrates stored on board shall be performed by a shipowner or operator according to IMO MSC.1/Circ. 670, 4:

- The foam liquid is to be delivered with a declaration of conformity and a declaration of the main characteristics (sedimentation, pH-value, expansion ratio, drainage time and volumetric mass). The declaration will be the basis for the annual condition test (each year after 3 years).

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## **Type Approval documentation**

Certification in accordance with Class Programme DNVGL-CP-0338, September 2018.

1. Test report No. F900101rev1 dated 2015-04-29 issued by SP
2. Data sheet No. PD - 9273 - V08 - STHAMEX-SV-HT 2% F-10 #9273 – EN, Version 08 dated 2018-01-30;
3. Material declaration according to MEPC.269(68) No. MD - 9273 - V02 - STHAMEX-SV-HT 2% F-10 #9273, Version V02 dated 2018-05-24;
4. Safety data sheet No. SD - 9273 - V14 - STHAMEX-SV-HT 2% F-10 #9273 – EN, Version V-14 dated 2018-05-16.

## **Tests carried out**

Tested according to IMO MSC/Circ.670.

## **Marking of product**

The packing is to be marked with name of manufacturer, type designation, storage/use, temperature, production date, expiry date and SHE information.

## **Periodical assessment**

DNV GL's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in Class Programme DNVGL-CP-0338, Section 4.