DNV·GL

Certificate No:
TAF0000012

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
Det Norske Veritas' Offshore Standards
Det Norske Veritas' Rules for Classification of Ships
Det Norske Veritas' Interpretation of SOLAS 1974 Convention as Amended

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.

This Certificate is valid until **2019-06-30**.

Issued at **Høvik** on **2015-06-25**

for **DNV GL**

DNV GL local station: **Essen**

Approval Engineer: **Synnøve Bolstad Eri**

Petter Langnes
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: **262.1-001676-15**
Certificate No: **TAF0000012**

Product description
"STHAMEX-SV-HT 2% F-10 #9273"
a synthetic based high expansion foam concentrate.

Application/Limitation
The foam concentrate is approved for use against hydrocarbon fires (non-polar solvents).

Description	STHAMEX-SV-HT 2% F-10 #9273
Nominal mixing ratio with seawater:	2 %
Minimum usage temperature:	- 10 °C (14 °F)
Maximum usage temperature:	+ 50 °C (122 °F)
Expansion ratio:	1:200 – 1:1500 (2 % mixture) *) 1:810 (2 % mixture) **)
*) Data based on product data sheet. **) Data from initial fire test, when tested with seawater and IMO MSC/Circ.670 test apparatus.	
Foam use, filling, maintenance, storage, transport, etc. are to be in accordance with the documents TM 001 V-04/99, TM 014 V-03/99 and TM 018 V-03/99 from Dr. Sthamer.	

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.

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

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 by the manufacturer.

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

Periodical controls of foam concentrates stored on board (To be done in accordance with IMO MSC/Circ.670):

- 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).

Type Approval documentation
Certification in accordance with Standard for Certification No. 1.2, Type Approval, January 2013.

Test Report No. F900101 rev 1 dated 29 April 2015 from SP Technical Research Institute of Sweden, Borås, Sweden.

Tests carried out
Tested according to IMO MSC/Circ.670.

Marking of product
The product or packing is to be marked with name of manufacturer, type designation, type of foam, intended use, batch number, production date, expire date, usage concentration, storage temperature, storage material and SHE information.

Periodical assessment
DNV'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 Standard for certification No. 1.2 Type Approval Item 4.