DNV·GL

Certificate No:
TAF00001CC

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Foam Fire Extinguishing Liquid

with type designation(s)
STHAMEX-IAF MARINE 1% F-10 #9146

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 (Type B) 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 **2019-12-16**
This Certificate is valid until **2024-12-15**.
DNV GL local station: **Hamburg CMC**

Approval Engineer: **Andrii Pishchanskyi**

for **DNV GL**

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.

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Product description

"STHAMEX-IAF MARINE 1% F-10 #9146" is synthetic high expansion foam concentrate (S).

Application/Limitation

The foam concentrate is approved for use as a high 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[1)]	1 %
Kinematic viscosity[1)] (20 °C)	1.83 cSt
pH value[1)] (20 °C)	7.32
Expansion ratio[1)]	853
Drainage time[1)] (25%)	4:19 (min:s)
Volumetric mass / density[1)] (20 °C)	1,058 g/ml
Storage and application temperature	-15°C up to 50°C
Onboard tank / storage material	Shall be in original packaging as per manufacturer's data sheet No. PD - 9146 - V01 - STHAMEX-IAF MARINE 1% F-10 #9146 – EN dated 2019-10-15.

Footnote
1) Values from the test report No. 20190861/Sth 277 dated 2019-09-24.

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 - 9146 - V01 - STHAMEX-IAF MARINE 1% F-10 #9146 – EN dated 2019-10-15;
- Safety Data Sheet according to Regulation (EC) No. SD - 9146 - V01 - STHAMEX-IAF MARINE 1% F-10 #9146 – EN dated 2019-10-15.

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).

Type Approval documentation

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

1. Certificate No. KB 105/19 dated 2019-09-24 issued by MPA Dresden;
2. Test report No. 20190861/Sth 277 dated 2019-09-24 issued by MPA Dresden;
3. Data sheet No. PD - 9146 - V01 - STHAMEX-IAF MARINE 1% F-10 #9146 – EN dated 2019-10-15;
4. Material declaration according to MEPC.269(68) No. MD - 9146 - V01 - STHAMEX-IAF MARINE 1% F-10 #9146 dated 2019-10-09;
5. Safety data sheet No. SD - 9146 - V01 - STHAMEX-IAF MARINE 1% F-10 #9146 – EN dated 2019-10-15.

Tests carried out

Tested according to IMO MSC.1/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.