

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of Norway.

This is to certify:

That the Concentrate for fixed high expansion foam fire extinguishing systems for machinery spaces and cargo pump rooms

with type designation(s)
1% High Expansion Foam (NK.D-101M)

Issued to
NK Co., Ltd.
Busan, Republic of Korea

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2019/1397**,
item No. MED/3.47. SOLAS 74 as amended Regulation II-2/10 and FSS Code 6, IMO MSC/Circ.670

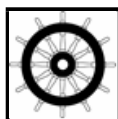
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2025-05-18**.

Issued at **Høvik** on **2020-05-19**

DNV GL local station:
Gimhae Station

Approval Engineer:
Tessa Biever



Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim
Head of Notified Body



The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.

Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Job Id: **344.1-004750-2**
Certificate No: **MEDB00006NS**

Product description

"1% High Expansion Foam (NK.D-101M)"

The synthetic foam concentrate "1% High Expansion Foam (NK.D-101M(1%))" is approved for use as high expansion foam for use against hydrocarbon fires. (non polar solvents)

Application/Limitation

Approved for use as high expansion foam concentrate in fixed and mobile fire extinguishing systems.

Description	NK.D-101M
Minimum storage/working temperature:	0 °C (32 F)
Maximum storage/working temperature:	+ 50 °C (122 F)
Expansion ratio:	1:960 *
Storage:	20 litre pails or 200 litre drums (NKT-HES-01)
Supplier:	NK Co., Ltd
Manufacturer:	NKTECH Co., Ltd
*) 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 manufacturer's instructions.	

General conditions:

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

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 by the manufacturer.

The fixed high expansion foam fire extinguishing system for machinery spaces and cargo pump rooms must be tested with the approved concentrate to the satisfaction of the Administration.

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.

Storage of the fire extinguishing media to be in compliance with IMO MSC/Circ. 1239 (SOLAS II-2/10.4.3).

Each product is to be supplied with its manual for installation, use and maintenance. This shall include requirements for transport and storage, material of foam tank, coating (if applicable) and cleaning procedures.

Periodical controls of foam concentrates stored on board (to be done in accordance with IMO MSC/670):
The foam liquid is to be delivered with a declaration of the main characteristics (sedimentation, pH-value, expansion ratio, drainage time, volumetric mass and date of production). The declaration will be the basis for the annual condition test (each year after 3 years).

Type Examination documentation

Test No. R1-2009-42 dated May 2010 from Fire Insurers Laboratories of Korea, Gyeonggi-Do, Korea.

Tests carried out

Tested according to IMO MSC/Circ.670.

Marking of product



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The packing is to be marked with MED Mark of Conformity (see first page), name and address of manufacturer, type designation, storage/use, temperature, production date, expiry date and SHE information.