

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)
BIO FOAM

Issued to
BIO-EX
Montrottier, France

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2018/773**,
item No. MED/3.47. SOLAS 74 as amended Regulation II-2/10 and FSS Code 6

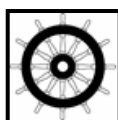
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2023-10-02**.

Issued at **Høvik** on **2018-10-03**

DNV GL local station:
Marseille

Approval Engineer:
Marcin Tobiasz



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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.



Product description

"BIO FOAM"

a synthetic high expansion foam concentrate.

Application/Limitation

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

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

Description	BIO FOAM
Nominal mixing ratio with seawater:	2 %
Minimum usage temperature:	-15 °C
Maximum usage/storage temperature:	+50 °C
Expansion ratio:	1:1043 ¹⁾
Kinematic viscosity (@ -15 °C)	29.08 cSt ¹⁾
Onboard tank/storage material	stainless steel, polyester or mild steel protected with epoxy or polyurethane coating. Tanks in PE, PP.
Foam use, filling, maintenance, storage, transport, etc. are to be in accordance with the manufacturer's instructions.	
1) Data from initial fire test, when tested with seawater and IMO MSC/Circ.670 test apparatus.	

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 Report No. 20180223/Bio 26 dated 2 May 2018 from MPA Dresden, Freiberg, Germany.

Tests carried out

Tested according to IMO MSC/Circ. 670.

Marking of product



Job Id: **344.1-008378-1**
Certificate No: **MEDB00004AA**

The packing is to be marked with MED Mark of Conformity (see page 1), name and address of manufacturer, type designation, storage/use, temperature, production date, expiry date and SHE information.