OILTECHNICS
FIRE FIGHTING
PRODUCTS

Marine Firefighting Foams: Guide to IMO and EU legislation

firefightingfoam.com

Summary

There are two separate pieces of legislation that affect the use of firefighting foam aboard commercial and naval vessels.

As these concern different chemicals or groups of chemicals, it is important not to confuse the two, but rather to understand what the upcoming changes mean for your vessel or fleet.

	IMO	EU/ECHA
CHEMICAL	**PFOS**	**PFAS**
When it comes into force	1st January 2026	Currently in draft form, expected to come into force at some point in 2026.
What it means for your vessel or fleet	From 1st January 2026 shipboard foams must not contain PFOS (PerFluoroOctane Sulfonate). PFOS is a PFAS breakdown product found in legacy C8-AFFF foams. C8 foams cannot be installed on new commercial or naval ships; in practice, C8 foams have been prohibited since 2015. Only a C6 or Fluorine Free Foam can be used in new vessels from January 2026. For all existing vessels, only a compliant C6 or Fluorine Free Foam can be used from the date of the first survey after January 1st 2026. It is possible that some vessels may still have C8 foam or residues of C8 in their foam tanks, so this should be tested and confirmed either way.	Both naval and commercial ships have a 10 year period in which to transition towards a firefighting foam that does not contain PFAS, eg Fluorine Free Foam. The transition period is expected to begin 18 months after the new legislation comes into force. Choosing the right type of foam is complicated by the performance of different foam types when used in typical marine conditions. You'll find further guidance throughout this document. **Update 19th August 2025** The UK HSE has just opened a consultation period of 6 months. They are suggesting a 5 year transition period for civil maritime vessels and 10 years for naval vessels. However, no decision is expected to be made until 2026.
C8 foams	C8 foams contain PFOS and are prohibited from use under the IMO Resolution MSC.532 (107). PFOS has also been banned under the UN Stockholm convention since 2009.	Prohibited from use. All existing C8 foam stock must be correctly disposed of at high temperature incineration (>1,100°C) according to POPs regulations.
C6 foams	High purity C6 foams may contain unintentional trace contaminants (UTC) of PFOS, but these will be below detection levels and therefore can still be used on shipboard firefighting systems.	C6 foams can be used on shipboard firefighting systems throughout the 10 year transition period. This has been allowed because of C6 foams' superior extinguishment capabilities, particularly when used with seawater, applied forcefully, in high winds and at low temperatures
Fluorine Free Foams (F3)	Fluorine Free Foams do not contain PFOS and can be used on shipboard firefighting systems, however there are safety, performance operational and commercial considerations to take into account before changing to this type of foam.	Fluorine Free Foams do not contain intentional PFAS and can be used, however there are safety, performance operational and commercial considerations to take into account before changing to this type of foam.

What to do if you think you may have C8 foam or residual contamination in your foam tanks

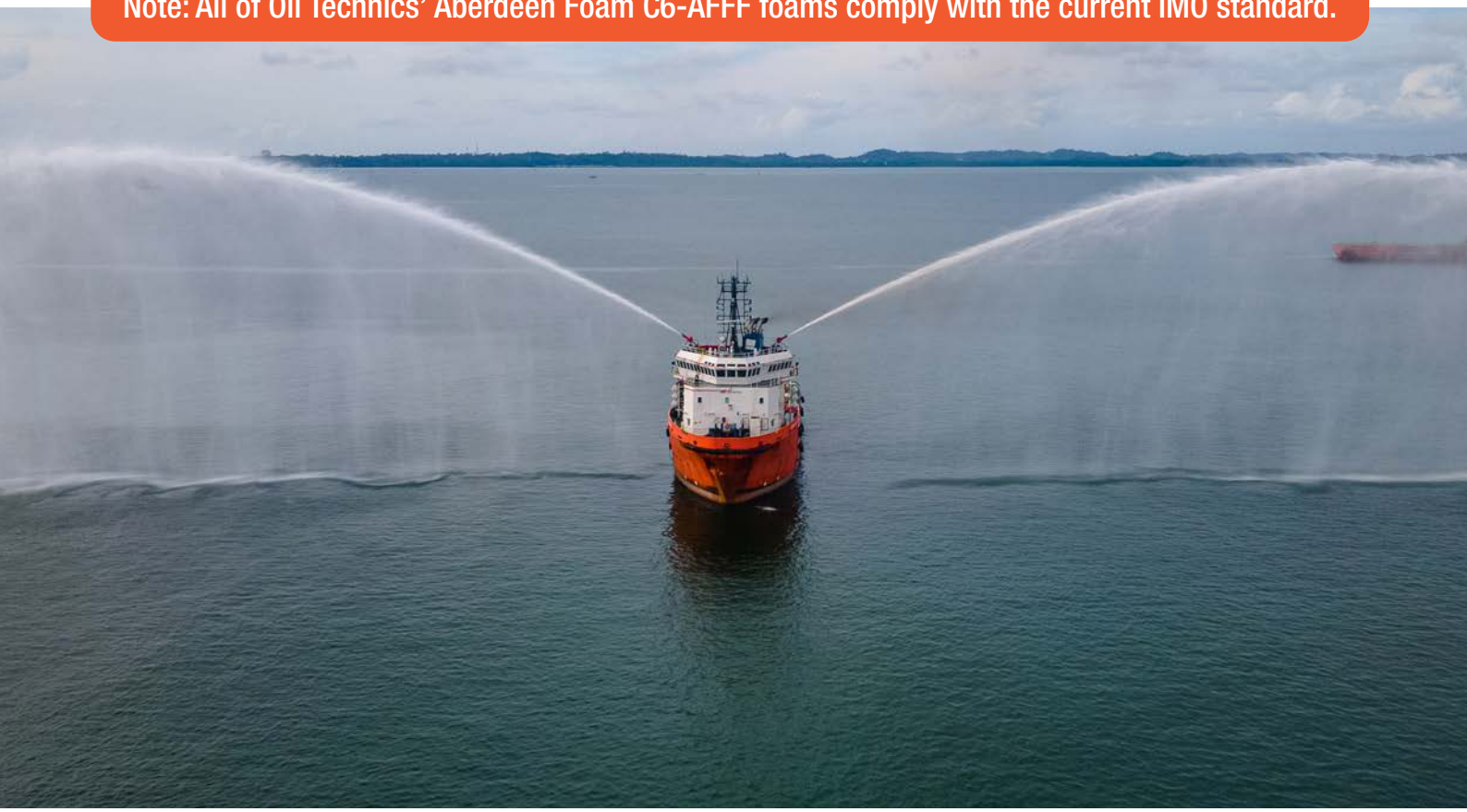
Your firefighting foam is unlikely to be a C8 foam if it was purchased after 2015. However, it is possible that there are C8 residues remaining in tanks and pipework that have subsequently been refilled with C6 or Fluorine Free Foams. This could mean that the new IMO standard cannot be met.

It is advisable to arrange a PFAS TOP Assay (Total Oxidisable Precursor Assay) test of your existing foam concentrate at an accredited laboratory, verifying whether it contains PFOS or already meets these IMO Regulation changes. Oil Technics offer this service via our independent sister company: please visit foamtesting.com for further details.

PFAS Top Assay result

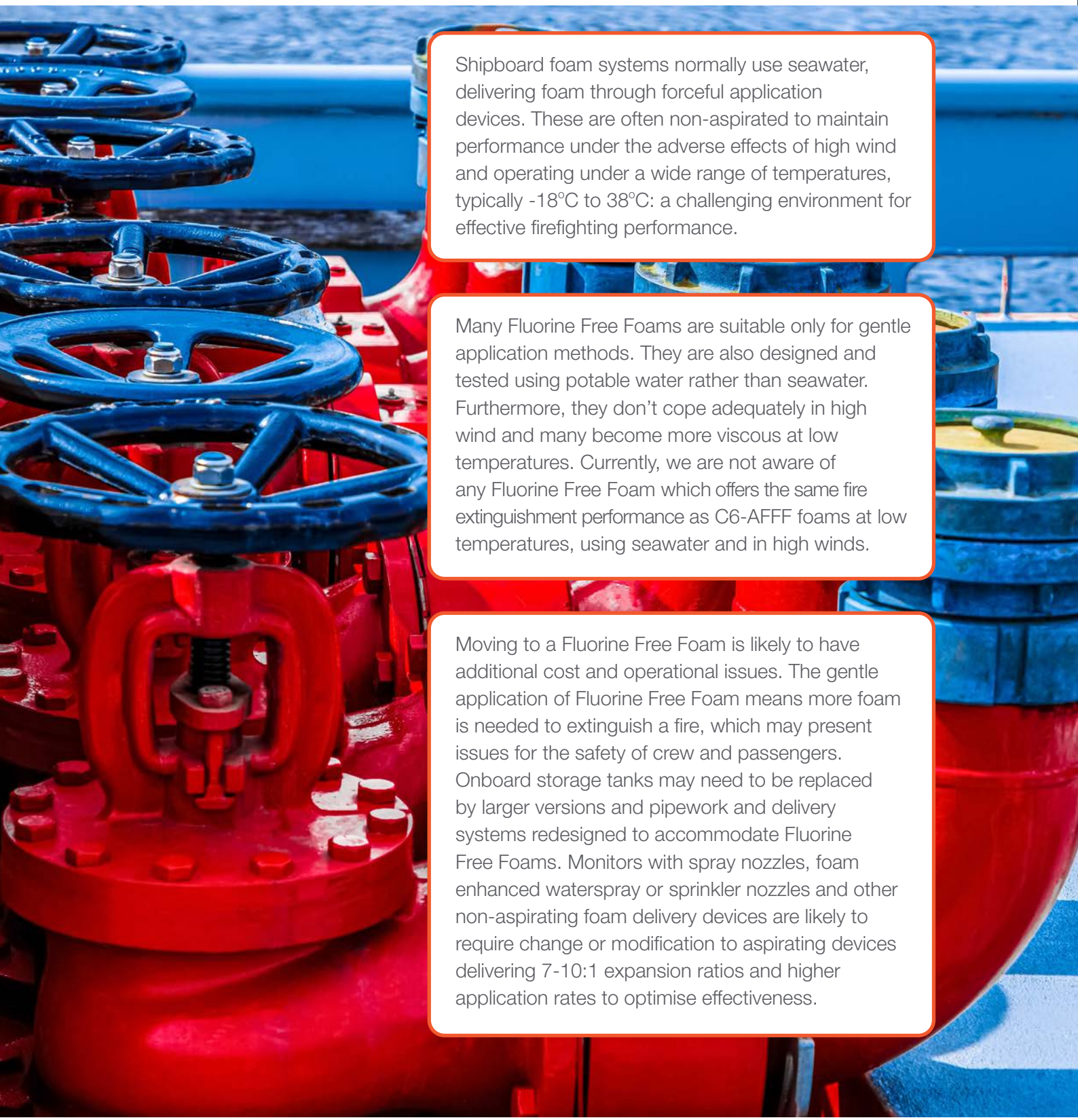
No PFOS present (or below detection limit)	This means your foam is not a legacy C8 foam and meets the IMO and EU/ECHA legislation. As such, it need not be replaced provided it passes the normal annual foam testing regime.
PFOS present above the EU Unintentional Trace Contamination level	In this case, you should replace your foam with a compliant C6 or Fluorine Free Foam by 1st January 2026. Oil Technics can advise on the appropriate product and procedure to decontaminate your foam tank and associated system.

Note: All of Oil Technics' Aberdeen Foam C6-AFFF foams comply with the current IMO standard.



Choosing a replacement foam

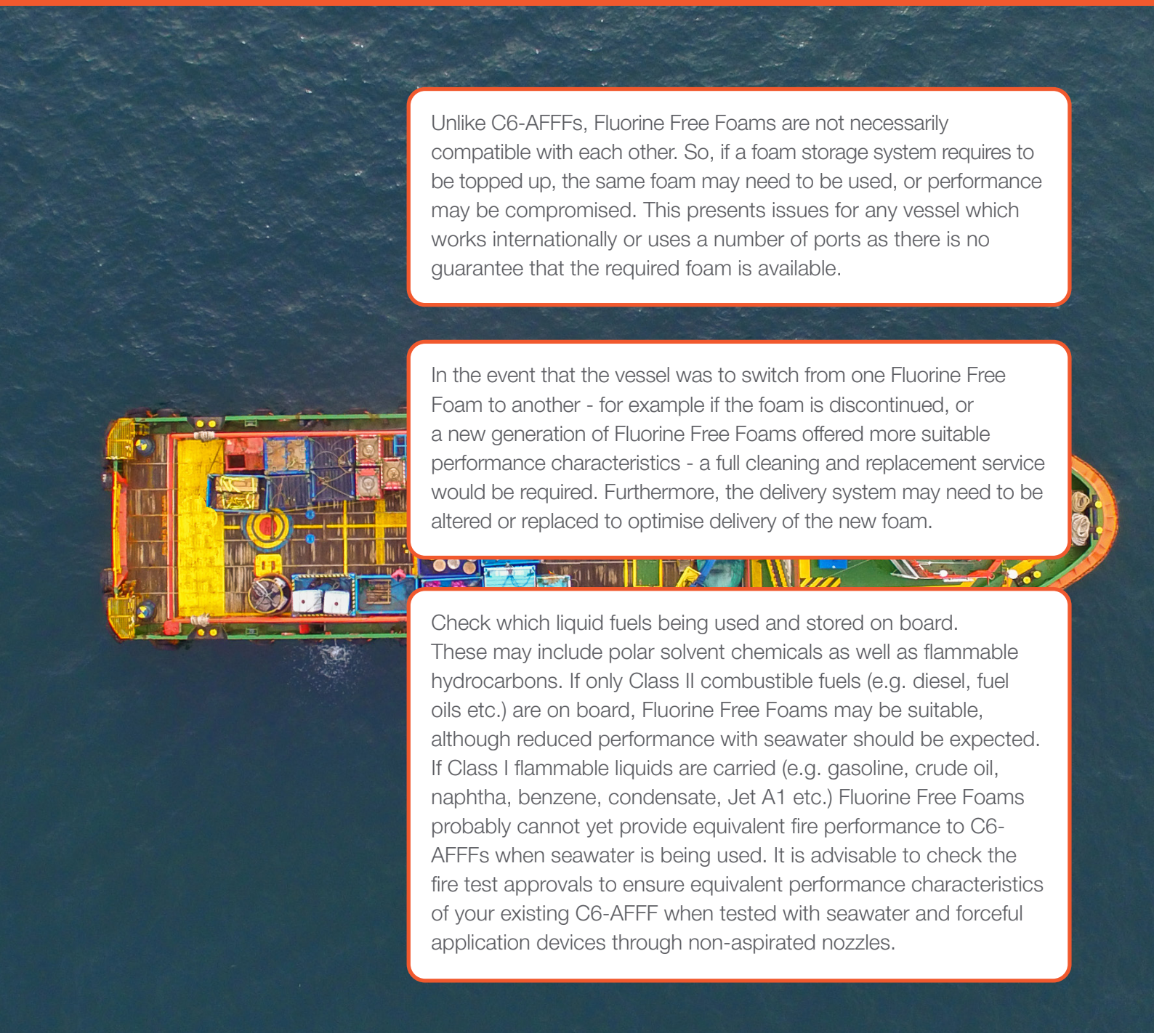
If you do need to replace your foam, there are a number of factors that should be considered before making your choice between C6-AFFF and Fluorine Free Foam. It is not simply a matter of emptying your tank and refilling with a replacement foam.



Shipboard foam systems normally use seawater, delivering foam through forceful application devices. These are often non-aspirated to maintain performance under the adverse effects of high wind and operating under a wide range of temperatures, typically -18°C to 38°C: a challenging environment for effective firefighting performance.

Many Fluorine Free Foams are suitable only for gentle application methods. They are also designed and tested using potable water rather than seawater. Furthermore, they don't cope adequately in high wind and many become more viscous at low temperatures. Currently, we are not aware of any Fluorine Free Foam which offers the same fire extinguishment performance as C6-AFFF foams at low temperatures, using seawater and in high winds.

Moving to a Fluorine Free Foam is likely to have additional cost and operational issues. The gentle application of Fluorine Free Foam means more foam is needed to extinguish a fire, which may present issues for the safety of crew and passengers. Onboard storage tanks may need to be replaced by larger versions and pipework and delivery systems redesigned to accommodate Fluorine Free Foams. Monitors with spray nozzles, foam enhanced waterspray or sprinkler nozzles and other non-aspirating foam delivery devices are likely to require change or modification to aspirating devices delivering 7-10:1 expansion ratios and higher application rates to optimise effectiveness.



Unlike C6-AFFFs, Fluorine Free Foams are not necessarily compatible with each other. So, if a foam storage system requires to be topped up, the same foam may need to be used, or performance may be compromised. This presents issues for any vessel which works internationally or uses a number of ports as there is no guarantee that the required foam is available.

In the event that the vessel was to switch from one Fluorine Free Foam to another - for example if the foam is discontinued, or a new generation of Fluorine Free Foams offered more suitable performance characteristics - a full cleaning and replacement service would be required. Furthermore, the delivery system may need to be altered or replaced to optimise delivery of the new foam.

Check which liquid fuels being used and stored on board. These may include polar solvent chemicals as well as flammable hydrocarbons. If only Class II combustible fuels (e.g. diesel, fuel oils etc.) are on board, Fluorine Free Foams may be suitable, although reduced performance with seawater should be expected. If Class I flammable liquids are carried (e.g. gasoline, crude oil, naphtha, benzene, condensate, Jet A1 etc.) Fluorine Free Foams probably cannot yet provide equivalent fire performance to C6-AFFFs when seawater is being used. It is advisable to check the fire test approvals to ensure equivalent performance characteristics of your existing C6-AFFF when tested with seawater and forceful application devices through non-aspirated nozzles.

Checklist

If you have:	Recommended actions:
C8 foam	**Contact Oil Technics Foam Testing Services to confirm whether your foam is C8.**
Possible C8 residues	**Have your foam PFAS TOP Assay tested by Oil Technics Foam Testing Services.** If PFAS residues are present above the permitted levels, follow foam disposal, tank cleaning and refilling protocols.
C6 foams	**Have your foam PFAS TOP Assay tested to ensure it is under the PFAS limits.** If the foam you're using is an Oil Technics' C6-AFFF, it complies with the new legislation and there is no need to change.

How Oil Technics can help

Foam concentrates

We manufacture and supply well proven, effective, C6 foam concentrates for shipboard and offshore installations. These foams offer superior extinguishment characteristics in comparison with Fluorine Free Foams when the use of seawater and forceful application are in operation and low temperatures and high winds are often present.

C6 AFFF

1% AFFF-LF

- **Fuels:** Hydrocarbons
- **Water use:** Fresh & sea water
- **Application:** Forceful & gentle
- **Operational @ -18°C:** Yes

Fire Performance Accreditations

- **IMO MSC.1/Circ.1312: 2009**
- **EN1568-3: 2018** (1+A/1+A)
- **UL162**
- **ICAO Level B**

C6 AFFF

3% AFFF-LF

- **Fuels:** Hydrocarbons
- **Water use:** Fresh & sea water
- **Application:** Forceful & gentle
- **Operational @ -18°C:** Yes

Fire Performance Accreditations

- **IMO MSC.1/Circ.1312: 2009**
- **EN1568-3: 2018** (1+A/1+A)
- **ICAO Level B**

C6 AFFF

1x1% AR-AFFF

- **Fuels:** Hydrocarbons & polar solvents
- **Application:** Gentle
- **Operational @ -18°C:** No
- **Water use:** Fresh & sea water
- **Freezing point:** -6°C

Fire Performance Accreditations

- **IMO MSC.1/Circ.1312: 2009**
- **EN1568-4: 2018** (1B/1B - isopropanol)
- **EN1568-3: 2018** (1B/1B)
- **EN1568-4: 2018** (1C/1C - acetone)

C6 AFFF

3x3% AR-AFFF

- **Fuels:** Hydrocarbons & polar solvents
- **Application:** Gentle
- **Operational @ -18°C:** No
- **Water use:** Fresh & sea water
- **Freezing point:** -5°C

Fire Performance Accreditations

- **IMO MSC.1/Circ.1312: 2009**
- **EN1568-4: 2018** (1A - isopropanol & acetone, fresh water)
- **EN1568-3: 2018** (1B - fresh water)

How Oil Technics can help

Firefighting foam testing services

With an unparallelled track record of innovation, value and service, our independent ISO 17025 accredited foam testing laboratory can facilitate annual IMO foam concentrate testing and PFAS Top Assay analysis and provide produced foam testing globally, plus offers full technical support for complete peace of mind.

IMO Foam Concentrate Testing

Evaluates whether your stored foam is in a satisfactory condition and whether it remains within the manufacturer's performance parameters.

This is a requirement of international standard IMO MSC.1/Circ.1312, 2009 and by many administrations and classification bodies for foam concentrates stored on board ships in international waters.

> **"Periodical control of foam concentrates... should be carried out at laboratories or authorized service suppliers... every year."**
>
> IMO MSC.1/Circ.1312, 2009 Paragraphs 4&5

Produced Foam Testing

Determines whether a foam system's proportioning and induction equipment is accurate and fit for purpose.

While foam proportioning systems are reliable, they should be rigorously maintained and inspected. Regular produced foam testing helps ensure they remain correctly proportioned.

PFAS TOP Assay Testing

Foam concentrates and tank/system cleaning discharge water should be TOP Assay tested to ensure PFAS levels comply with IMO and local POPs regulations.

Residues of legacy C8 degradation products can be present in storage tanks and foam systems: testing makes it clear if it has been properly cleaned and your new foam is uncontaminated and so compliant with the latest regulations.

foamtesting.com

How Oil Technics can help

Universal Tank Cleaner

Solvent Cleaner for PFAS residue removal

A versatile, safe solvent that removes PFAS residues to levels below the current EU standard. Suitable for cleaning marine, offshore and onshore tanks and proportioning systems.

Use for tank cleaning to remove PFAS components from old foam types including legacy C8-AFFFs. Foam that has been manufactured prior to 2012 may possibly contain C8 PFAS components, and foam tanks and equipment not properly cleaned when transitioning from C8 to C6 AFFFs may have been unintentionally contaminated by C8 residue and therefore may not meet current ECHA and UK POPs PFAS regulations for unintentional trace contaminants (UTC).

HOW TO USE

- **Remove Existing Foam:** Pump out as much of the existing C8 or C6 foam as possible into suitable containers or IBCs. All containers must be labelled as foam waste.
- **Initial Cleaning:** Apply Universal Tank Cleaner liberally to the inner walls of the tank using a spray nozzle or similar method. Pump out the residue into a container labelled as C8 foam waste.
- **Circulate & Rinse with Hot Water:** Thoroughly circulate and rinse the tank walls with hot water, performing the process twice. Again, pump out the waste water into container labelled as C8 foam waste.
- **Refill with Water & Test:** Before refilling the tank with your chosen C6 or Fluorine Free Foam, fill the tank with water. Once filled and settled, take a 250ml sample of the water and send it to an accredited laboratory for PFAS TOP Assay testing to ensure compliance with UK and EU regulations. Our sister company, Oil Technics Foam Testing Services, can facilitate this testing for you: for further information, please visit foamtesting.com.
- **Refill with your Chosen Foam:** Only refill your foam tank once PFAS TOP Assay analysis has shown your tank to contain PFAS UTCs below the allowable quantities under UK and EU regulations. If you fill your tank with foam before confirming, you risk that your new foam may be contaminated and therefore will not be compliant and require to be removed and replaced.

NOTES

- All C8-PFAS waste must be disposed of via hightemperature incineration (>1,100°C), following UK POPs guidelines. Contact a licenced waste management company for guidance on storage and collection.
- Using the method outlined above, Oil Technics carried out a representative small scale tank cleaning exercise on a tank containing a legacy C8 foam. After cleaning, the tank was filled with a Fluorine Free Foam and a sample sent for TOP Assay testing. The results showed that, after one Universal Tank Cleaner treatment followed by two hot water flushes, C8 contamination of total PFAS had been reduced to below detectable levels.

For further information, visit **oiltechnics.com** and search Universal Tank Cleaner.

OILTECHNICS FIRE FIGHTING PRODUCTS

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