

Implementation of MSC 107 Amendments on the Prohibition of PFOS-Containing Fire-Fighting Media



1- Introduction

At its 107th session (31 May – 9 June 2023), the IMO Maritime Safety Committee adopted mandatory regulatory amendments aimed at enhancing fire safety and environmental protection onboard ships. Among these decisions, the Committee adopted amendments to:

- SOLAS Chapter II-2
- 1994 and 2000 High-Speed Craft Codes

To prohibit the use and storage of fire-extinguishing media containing perfluorooctane sulfonic acid (PFOS) onboard ships.



These requirements will enter into force **on or after 1 January 2026**, with transitional provisions for existing ships.

2. Scope of Application

2.1 New Ships

For ships constructed on or after 1 January 2026, the use and storage of any extinguishing media containing PFOS is prohibited. SOLAS II-2/10.11.2 specifies the restrictions applicable to new builds' ships.

2.2 Existing Ships

For ships constructed before 1 January 2026, existing PFOS-based extinguishing agents must be removed no later than the date of the first survey¹ (annual/periodical/renewal) on or after 1 January 2026. removed PFOS substances must be delivered to appropriate shore-based reception facilities. (Ref: SOLAS II-2 Regulation 1.2.10 and 10.11.2)

3. Regulatory References

Relevant IMO instruments adopted at MSC 107 include:

- Resolution MSC.532(107): Amendments to SOLAS Chapter II-2
- Amendments to the 1994 and 2000 HSC Codes introducing fire-extinguishing media restrictions (PFOS prohibition)

¹ IMO interpretation of "first survey" follows MSC.1/Circ.1290 – Unified interpretation of the term "first survey".

Amendments to SOLAS chapter II-2 and the 1994 and 2000 HSC Codes to prohibit the use of fire-fighting foams containing PFOS were adopted and will be applied based on the clause 2.

4. Technical Background

What is PFOS?

PFOS (perfluorooctane sulfonic acid) is a synthetic chemical widely used in AFFF (Aqueous Film Forming Foam) due to its excellent surfactant properties.

Why is PFOS Prohibited?

- Persistence in the environment (“forever chemicals”)
- Bioaccumulation in marine organisms
- Toxicity risks to human health
- Global regulatory phase-out under various frameworks
- Availability of safer fluorine-free alternatives

IMO recognized PFOS as an environmentally hazardous substance and agreed to ban its use onboard ships.

5. Equipment Impacted

The prohibition applies to any fire-extinguishing media including PFOS, notably:

- AFFF containers in engine rooms
- Fixed foam systems on tankers (deck foam systems)
- Portable foam applicators
- Fire lockers with stored foam concentrate
- Machinery space foam injection systems
- Helideck/hangar foam systems
- High-expansion foam systems if PFOS-based

The new requirement applies to both use, and storage onboard. Even possession of PFOS-based concentrate onboard is prohibited beyond the survey deadline.

6. Compliance Strategy

6.1 Inventory and Identification

Ship-owners should immediately prepare an inventory of all fire-extinguishing media onboard and identify PFOS-containing foams by:

- Safety Data Sheets (SDS)
- Manufacturer’s labels
- Chemical analysis (if uncertain)

Use the following sample checklist:

Item	Location	Brand	Type	PFOS content	Qty.
AFFF concentrate	Fire locker	Xxx	3%	Yes/no	Liters

6.2 Replacement Plan

Ship-owners should develop a replacement plan covering:

- selection of IMO-accepted PFOS-free substitutes
- compatibility with existing system hardware
- flushing and cleaning procedures
- functional testing after replacement
- calibration and system documentation updates

6.3 Disposal

Removed PFOS agents must be stored safely onboard until disposal and be handed over to shore-based reception facilities and have a receipt certificate for record keeping. [Ref: "The prohibited substances shall be delivered to appropriate shore-based reception facilities when removed from the ship." (SOLAS II-2/10.11.2)]

7. Survey and Certification

7.1 Survey Timeline

For existing ships:

Deadline = First Survey on or after 1 January 2026





Meaning²: Depending on the survey cycle (annual/intermediate/renewal), the timeframe may differ.

7.2 Survey Items

During PSC / RO survey, surveyors will verify:

- Absence of PFOS-containing media
- Updated SDS document onboard
- Updated Fire Control Plan (FCP) if needed
- Disposal certificates
- Functional test of the replacement media
- SOLAS II-2 compliance statement

8. Recommendations for Ship owners

- Start inventorying immediately
- Coordinate with foam suppliers for PFOS-free options
- Plan maintenance windows for system flushing
- Update onboard documentation:
 -  Safety Management System (SMS)
 -  FCP
 -  maintenance records
 -  SDS library
- Train crew on the new foam characteristics

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9. Recommendations for Surveyors

Surveyors should:

- verify marking and product labels
- review SDS and certificates
- confirm disposal through shore reception facility
- check system functionality
- assess compatibility of the foam with existing hardware
- ensure the timeline meets the requirements of SOLAS II-2

10. Acceptable Alternatives

While IMO does not list specific commercial products, acceptable foam types include:

- F3 foams (Fluorine-Free Foam)
- Synthetic alcohol-resistant foams (FFFP, but PFOS-free)
- Concentrates meeting ICAO Level B or C (for helidecks, depending on design)

Ship-owners should consult:

- Manufacturer recommendations
- Class society guidance
- FSS Code requirements for system performance

11. Conclusion

The ban on PFOS-containing fire-extinguishing media represents a significant regulatory change affecting the fire safety systems of most ships, particularly tankers and vessels equipped with foam systems. Early planning and systematic replacement will allow ship-owners to achieve compliance by the first safety equipment survey date after 1 January 2026, avoid operational disruption, and ensure safe and environmentally responsible fire-fighting capability onboard.

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