



Office of
Deputy Commissioner
of Maritime Affairs

THE REPUBLIC OF LIBERIA
LIBERIA MARITIME AUTHORITY

Marine Notice

SAF-017
Rev. 4/25

**TO: ALL SHIPOWNERS, OPERATORS, MASTERS AND OFFICERS OF
MERCHANT SHIPS, AGENTS AND RECOGNIZED ORGANIZATIONS**

SUBJECT: Ships Using Low-Flashpoint Fuels

- References:**
- (a) Maritime Regulation 2.35
 - (b) SOLAS 1988, as amended, Chapter II-1, Part G
 - (c) IGC Code, as amended
 - (d) IGF Code, as amended
 - (e) [MSC Resolution 566\(109\)](#)
 - (f) [MSC.1/Circ.1212/Rev.2](#)- Revised Guidelines on Alternative Design and Arrangements for SOLAS Chapters II-1 And III
 - (g) [MSC.1/Circ.1455](#) - Guidelines for the approval of alternatives and equivalents as provided for in various IMO instruments
 - (h) [MSC.1/Circ.1621](#) - Interim guidelines for the safety of ships using Methyl/Ethyl alcohol as fuel
 - (i) [MSC.1/Circ.1666](#) - Interim guidelines for the safety of ships using LPG fuels
 - (j) [MSC.1/Circ.1679](#) - Interim guidelines for use of liquefied petroleum gas (LPG) cargo as fuel
 - (k) [MSC.1/Circ.1681](#) - Voluntary early implementation of the amendments to Chapter 16 of the IGC code, adopted by resolution [MSC.566\(109\)](#)
 - (l) [MSC.1/Circ.1687](#) - Interim Guidelines for the Safety of Ships Using Ammonia as Fuel
 - (m) [MARINE OPERATIONS NOTE: 03/2024](#)
 - (n) [Draft STCW Circular - Generic interim guidelines on training for seafarers using alternative fuels and new technologies](#)

Supersedes: Marine Notice SAF-017, dated 01/25

The following changes have been included:

- a. New references (f), [MSC.566\(109\)](#), (k) [MSC.1/Circ.1681](#), (m) [MARINE OPERATIONS NOTE: 03/2024](#), and [Draft STCW Circular](#) added and others renumbered as appropriate.
- b. Paragraph 2.1 amended to advise on early implementation of amendment to the IGF Code by [MSC.551\(108\)](#).
- c. Paragraph 4.2 amended to advise on early implementation of amendment to the IGC Code by [MSC.566\(109\)](#), and add guidance for Ethane.
- d. New Section 2.6 on training added, with regard to new reference (n).

PURPOSE:

This Notice provides guidance to vessel owners, operators and managers, and to recognized organizations (RO's) on compliance with the requirements for ships using low-flashpoint fuel, the Administrations' general procedures related to approval of the use of low-flashpoint fuel, and the latest developments from the IMO on shipboard-use of alternative fuels.

APPLICABILITY:

This Notice applies to ships using low-flashpoint fuels:

- .1 for which the building contract is placed on or after 1 January 2017;
- .2 in the absence of a building contract, the keels of which are laid or which are at a similar stage of construction on or after 1 July 2017; or
- .3 the delivery of which is on or after 1 January 2021.

It also applies to a ship, irrespective of the date of construction, which converts to using low-flashpoint fuels on or after 1 January 2017, or to a ship using low-flashpoint fuels, which, on or after 1 January 2017, undertakes to use low-flashpoint fuels different from those which it was originally approved to use before 1 January 2017.

This Notice also applies to gas carriers, as defined in SOLAS regulation VII/11.2, that use cargo vapour or boil-off gas other than methane (LNG) as a low-flashpoint gaseous fuel.

This Notice does not apply to gas carriers, as defined in regulation VII/11.2, that use methane (LNG) cargo vapour or boil-off gas as fuel. The requirements for this are contained in Section 16 of the IGC Code.

1.0 DEFINITIONS:

- 1.1 *Hazard Identification (HAZID)* means a workshop-based qualitative risk analysis technique commonly used for the identification of potential hazards and threats in a system, process or operation.
- 1.2 *Hazard and Operability Analysis (HAZOP)* means a structured and systematic technique for system examination and risk management, often used as a technique for identifying potential hazards and operability problems in process systems.
- 1.3 *Low-flashpoint fuel* means gaseous or liquid fuel having a flashpoint lower than 60°C.
- 1.4 *Gaseous fuel* means any fluid used as fuel which:
 1. has a vapour pressure exceeding 0.28 MPa absolute at a temperature of 37.8°C; or
 2. is completely gaseous at 20°C at a standard pressure of 101.3 kPa
- 1.5 *One ship-one code* means that only one code (for the construction, equipment and machinery) is to be applied to one ship type - the **IGF Code, as amended** should not apply to ships subject to the **IGC Code, as amended**, even for such ships using low-flashpoint fuels that are not cargo.

2.0 REQUIREMENTS:

2.1 Ships using low-flashpoint fuels shall comply with the requirements of the **IGF Code, as amended**. The Administration is allowing voluntary early implementation of certain paragraphs of the amendments to the IGF code in **MSC Resolution 551(108)**; see **MARINE OPERATIONS NOTE: 03/2024**.

2.2 The **IGF Code, as amended** contains regulations to meet the functional requirements for the use of natural gas fuel. Requirements for the use of other low-flashpoint fuels are under development at the IMO and will be added to the **IGF Code, as amended**, once developed. Refer to section 4.1 for current guidance for specific fuels.

2.3 Until such time that requirements for other low-flashpoint fuels are developed, it must be demonstrated that the use of another low-flashpoint fuel achieves compliance with the functional requirements of **IGF Code, as amended**, and that an equivalent level of safety is maintained.

(Also, appliances and/or arrangements of natural gas fuel systems may deviate from those set out in the Code, provided it is demonstrated that an equivalent level of safety is maintained.)

2.4 This equivalence of the alternative design shall be demonstrated as specified in SOLAS regulation II-1/55 and approved by this Administration. The guidelines in **MSC.1/Circ.1212/Rev.2** and **MSC.1/Circ.1455**, as appropriate, are to be used for assessment and approval of the alternative design.

The risks shall be analyzed using acceptable and recognized risk analysis techniques, considering the guidance provided in **MSC.1/Circ.1455**, and the loss of function, component damage, fire, explosion and electric shock as a minimum. The analysis shall ensure that risks are eliminated wherever possible, and where they cannot be eliminated, are mitigated as necessary.

2.5 The **IGC Code, as amended**, similar to the IGF Code, provides specific provisions for use of liquefied natural gas (LNG) cargo as fuel.

Requirements for the use of other low-flashpoint cargo for fuel are under development at the IMO and the **IGC Code, as amended**, requires that the same level of safety as natural gas is ensured, to be demonstrated as specified in SOLAS regulation II-1/55.

Accordingly, the same general process and requirements as described in this Marine Notice for ships using low-flashpoint fuels are to be followed for the use of other low-flashpoint cargo as fuel on gas carriers. Refer to sections 4.2 and 4.3 for details for specific fuels.

2.6 All seafarers serving on board ships using alternative fuels and new technologies should, prior to being assigned shipboard duties, be familiarized with their specific duties and with all ship arrangements, installations, equipment, procedures and ship characteristics that are relevant to their routine or emergency duties, as specified in STCW regulation I/14.1.5. In addition, seafarers should receive appropriate training on the associated risks and emergency procedures, in accordance with their duties and responsibilities. In this regard, the guidance in the **Draft STCW Circular - Generic interim guidelines on training for seafarers using alternative fuels and new technologies is to be referred to**.

3.0 ADMINISTRATION ACTIVITIES

The Administration has delegated the majority of the review of compliance with the requirements of the use of low-flashpoint fuels to its ROs. In this case, the reference to “Administration” in [MSC.1/Circ.1455](#) should mostly be taken as “RO”.

However, in order for the application of these procedures to be successful, the Administration should be notified as early in the process and all stakeholders, including the Administration, its RO’s, owners, operators, and designers should be in continuous communication from the onset of a specific proposal. This should include the scope of the risk assessment (RA) and extent of the analysis to be carried out.

And the following specific aspects of this process either involve or are reserved for this Administration:

- (a) If a HAZID or HAZOP is to be carried out as part of this process and it is known at the time that the vessel will be registered with this Administration, the Administration is to be invited to attend, and to discuss and agree with the concept of design, including any alternate or equivalent arrangement applied to the vessel design, and the technologies to be applied before conducting the HAZID or HAZOP.
- (b) The results of the HAZID or HAZOP, along with details of the risks, and how they will be mitigated, shall be documented and submitted to this Administration for its review and acceptance.
- (c) If required, the Administration can issue a formal general acceptance letter/preliminary approval statement prior to the completion of construction and registration of a vessel.
- (d) The Administration will issue an Equivalency Certificate upon completion of construction and registration of a vessel, near its delivery date and notify the IMO accordingly.
- (e) A copy of the Equivalency Certificate and approved documentation indicating that the alternative design and arrangements have been found to comply with the applicable requirements are to be carried on board the ship.

4.0 GUIDANCE FOR OTHER LOW-FLASHPOINT FUELS

4.1 SHIPS USING LOW-FLASHPOINT FUELS (**IGF Code, as amended**)

Ammonia

The Administration follows the current interim guidance in [MSC.1/Circ.1687](#), “*Interim guidelines for the safety of ships using ammonia as fuel*”. An RA is to be carried out as noted above.

The Administration may consider alternatives to the guidance in [MSC.1/Circ.1687](#), based on an appropriate submission of the alternative design with background information and technical justification.

Hydrogen

Guidance for the use of Hydrogen as fuel is currently under development at the IMO. The equivalence of the alternative design is to be demonstrated as specified in SOLAS regulation II-1/55, using the guidance in [MSC.1/Circ.1212/Rev.2](#) and [MSC.1/Circ.1455](#), and approved by this Administration. Additionally, an RA is to be carried out as noted above.

Low-flashpoint oil fuels

Guidance for the use of low flashpoint oil fuels is currently under development at the IMO. The equivalence of the alternative design is to be demonstrated as specified in SOLAS regulation II-1/55, using the guidance in [MSC.1/Circ.1212/Rev.2](#) and [MSC.1/Circ.1455](#), and approved by this Administration. Additionally, an RA is to be carried out as noted above.

LPG

The Administration follows the current interim guidance in [MSC.1/Circ.1666](#), “*Interim guidelines for the safety of ships using LPG fuels*”. An RA is to be carried out as noted in above, considering LPG as natural gas fuel. Additionally, the RA is to address paragraphs 5.3.6, 6.3.3, 10.3.2, 13.3.4 and 15.2.2 on the interim guidance.

The Administration may consider alternatives to the guidance in [MSC.1/Circ.1666](#), based on an appropriate submission of the alternative design with background information and technical justification.

Methyl/Ethyl Alcohol (Methanol/Ethanol)

The Administration follows the current interim guidance in [MSC.1/Circ.1621](#), “*Interim guidelines for the safety of ships using methyl/ethyl alcohol as fuel*”. An RA is to be carried out as noted above.

The Administration may consider alternatives to the guidance in [MSC.1/Circ.1621](#), based on an appropriate submission of the alternative design with background information and technical justification.

4.2 GAS CARRIERS USING LOW-FLASHPOINT CARGO FOR FUEL (**IGC Code, as amended**)

Ammonia

The IMO adopted amendments to the **IGC Code, as amended**, by resolution [MSC.566\(109\)](#), which will allow the use of cargoes as fuel that are identified as toxic and are required to be carried in type 2G/2PG ships, provided that the same level of safety as natural gas (methane) is ensured in accordance with the relevant provisions of the code, including those in paragraph 1.3. Ammonia is one such cargo, and in accordance with [MSC.1/Circ.1681](#), the Administration allows voluntary early implementation of these

amendments.

Currently, guidance for Ammonia carriers to use their cargo as fuel is under development at the IMO. The equivalence of the alternative design is to be demonstrated as specified in SOLAS regulation II-1/55, using the guidance in [MSC.1/Circ.1212/Rev.2](#) and [MSC.1/Circ.1455](#), and approved by this Administration. Additionally, an RA is to be carried out as noted above.

Ethane

For Ethane carriers that use their cargo vapour or boil-off gas as fuel, the equivalence of the alternative design is to be demonstrated as specified in SOLAS regulation II-1/55, using the guidance in [MSC.1/Circ.1212/Rev.2](#) and [MSC.1/Circ.1455](#), and approved by this Administration. Additionally, an RA is to be carried out as noted above.

LPG

For LPG carriers that use their cargo vapour or boil-off gas as fuel, the Administration follows the current interim guidance in [MSC.1/Circ.1679](#), “*Interim guidelines for use of liquefied petroleum gas (LPG) cargo as fuel*”. An RA of the LPG fuel arrangements is to be carried out as noted in paragraph 2.5.1.1 of the circular, documenting an equivalent level of safety to utilizing LNG as fuel.

In keeping with one code-one ship, these guidelines require compliance with several **IGC Code, as amended** requirements.

The Administration may consider alternatives to the guidance in [MSC.1/Circ.1679](#), based on an appropriate submission of the alternative design with background information and technical justification.

4.3 GAS CARRIERS USING LOW-FLASHPOINT FUELS OTHER THAN CARGO (**IGC Code, as amended**)

In accordance with the *one ship-one code* principle, gas carriers using low-flashpoint fuels other than cargo are to comply with the **IGC Code, as amended**. At this time, how this will be applied - especially for gas carriers that will use low flashpoint fuels other than and different from the cargo carried - is currently under development at the IMO.

Therefore, in addition to the requirements of the **IGC Code, as amended**, the equivalence of the alternative design is to be demonstrated as specified in SOLAS regulation II-1/55, using the guidance in [MSC.1/Circ.1212/Rev.2](#) and [MSC.1/Circ.1455](#), and approved by this Administration.

An RA is to be carried out as noted above, taking into consideration aspects such as crew training (e.g., STCW training elements that are not covered under Table A-V/1-2 but included in Table A-V/3 should be addressed), etc.

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