

STATUTORY UPDATE No. 06, 2015 / AUGUST

CARRIAGE OF BIO-FUEL BLENDS ON-BOARD TANKERS



A bio-fuel blend is made up of a bio-fuel part and a petroleum-oil part. Examples may be mixtures of ethanol and gasoline or FAME and diesel.

Recognized bio-fuels are those IBC Code products listed in Annex 11 of the MEPC.2 Circular, which is issued annually. Currently, there are eight recognized bio-fuels listed:

- Fatty Acid Methyl Esters (FAME)
- Vegetable oils
- Ethyl alcohol (ethanol)
- Alkanes (C10-C26), linear and branched with a flashpoint $>60^{\circ}\text{C}$
- Alkanes (C10-C26), linear and branched with a flashpoint $\leq 60^{\circ}\text{C}$
- Alkanes (C5-C7), linear and branched
- Alkanes (C10-C17), linear and branched
- Tert-Amyl ethyl ether

While pure bio-fuels are shipped on chemical tankers under the IBC Code Certificate of Fitness, a bio-fuel blend may be carried either as an oil subject to MARPOL ANNEX I or as a chemical subject to the IBC Code. Under which regime a bio-fuel blend belongs depends on the petroleum-oil/bio-fuel blending ratio. If the blend contains 75% or more of petroleum-oil, it is considered oil under MARPOL ANNEX I; and where the petroleum-oil part constitutes for less than 75% of the total blend, it is considered a chemical.

CARRIAGE ON OIL TANKERS SUBJECT TO MARPOL ANNEX I

The IMO guidelines on the carriage of bio-fuel blends came into effect in 2011. To allow sufficient time for ODME manufacturers to develop solutions, a "period of grace" until 1 January 2016 was granted for oil tankers without an ODME approved for the bio-fuel blend carried, provided that all residues and tank washings are pumped ashore.

As from 1 January 2016, to carry a bio-fuel blend under the MARPOL ANNEX I regime the ODME is required to be type approved for the specific blend and concentration carried. The ODME type approval standard MEPC.108(49) has been amended, and ODME manufacturers are now offering upgrade kits for existing equipment accordingly. Needless to say, if the shipping of bio-fuel blends is not intended, an upgrade will not be necessary.

Things to consider when upgrading or replacing an existing ODME:

- An on-board survey including a function test by an attending DNV GL surveyor will be required.
- The ODME manual has to be revised and re-approved¹.
- A new type approval certificate² has to be provided. It is essential that the relevant blends and concentrations are covered by the type approval and included in the type approval certificate.
- The IOPP certificate will not be affected unless upgrading from a pre-MEPC.108(49) standard such as A.586(14).

When considering the oil tanker deck firefighting system requirements in SOLAS, it should be noted that when carrying bio-fuel blends containing more than 5% ethyl alcohol, alcohol-resistant foam is required.

¹ A complete ODME manual including both operational and technical information shall be submitted for re-approval if a new ODME is installed. If the instrument is in compliance with MEPC.108(49), and measurement cell and/or software is to be renewed for compliance with MEPC.240(65) and MEPC.1 Circular 761, the attending surveyor can endorse the amendments in the manual on board.

² The form of the type approval certificate should be in accordance with MEPC.240(65) (2013 amendments to resolution MPEPC.108(49)).

a	c	d	e	f	g	h	i'	i''	i'''	j	k	l	n	o
Bio-fuel blends of Diesel/gas oil and Alkanes (C10-C26), linear and branched with a flashpoint >60°C (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of Diesel/gas oil and Alkanes (C10-C26), linear and branched with a flashpoint ≤ 60°C (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	ABC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of Diesel/gas oil and FAME (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of Diesel/gas oil and vegetable oil (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	-	-	Yes	C	T	ABC	No	15.12, 15.17, 15.19.6
Bio-fuel blends of Gasoline and Ethyl alcohol (>25% but <99% by volume)	X	S/P	2	2G	Cont	No	T3	IIA	No	C	FT	A	No	15.12, 15.17, 15.19.6

CARRIAGE ON CHEMICAL TANKERS SUBJECT TO THE IBC CODE

Currently, there are five bio-fuel entries in Chapter 17 of the IBC Code which will be included in the vessel's certificate of fitness, provided all the carriage requirements are met by the vessel.

In addition, there is one provisionally assessed "Bio-fuel blends of jet fuels and alkanes (C10-C17), linear and branched" included in list 1 of the latest MEPC.2 Circular awaiting a formal assessment by IMO.

Prior to shipping other bio-fuel blend compositions under the IBC Code, the producer/shipper has to initiate a product assessment according to the IMO guidelines in order to have it included in list 1 of the MEPC.2 Circular and finally in Chapter 17 of the IBC Code.

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