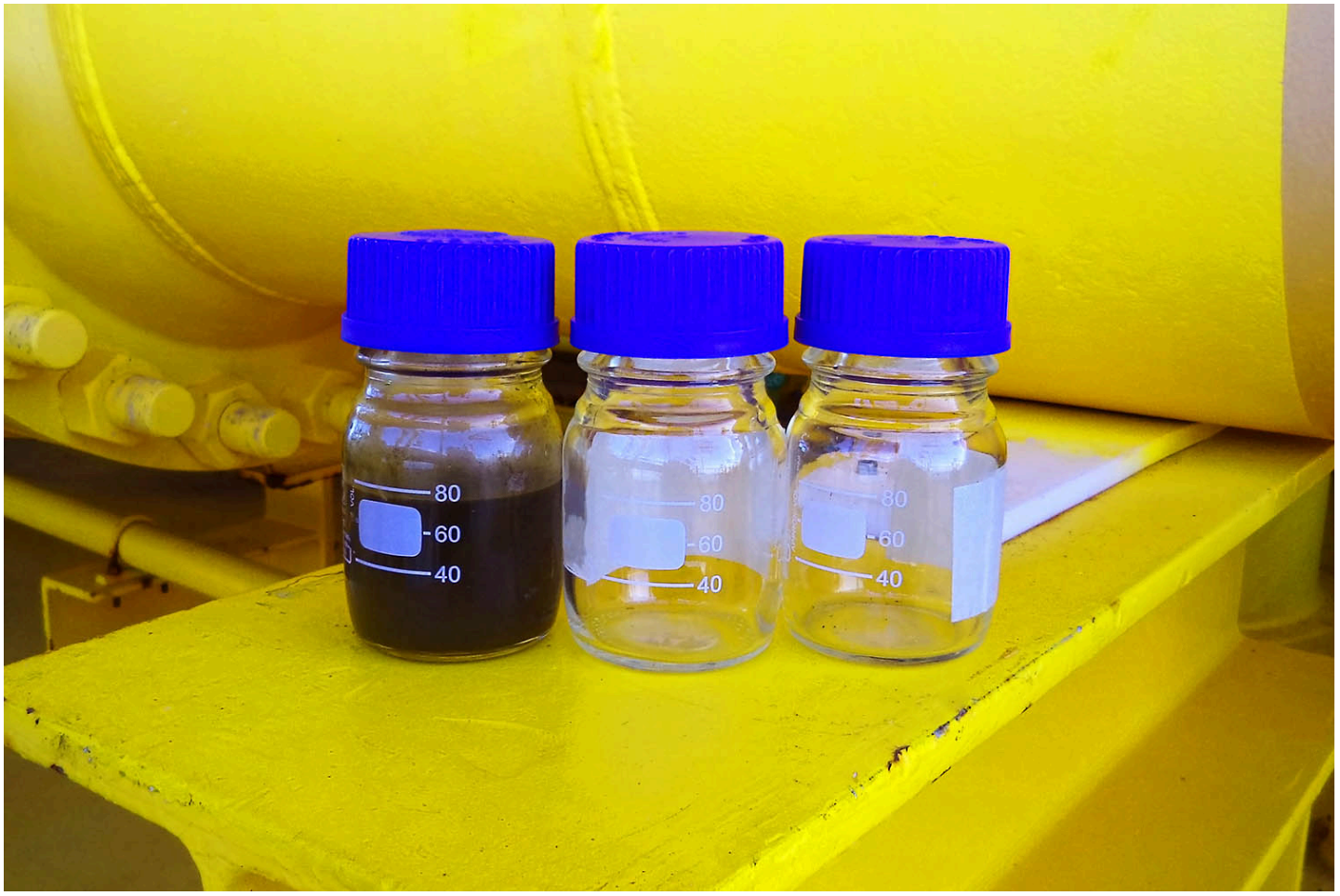

Fitting of fuel oil sampling points becomes mandatory

The retroactive MARPOL Annex VI requirement to fit or designate sampling points for taking representative samples of the fuel oil in use onboard ships entered into force on 1 April 2022, and the deadline for compliance depends on each ship's schedule for renewing its APP certificate.

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The 75th session of the IMO's Marine Environment Protection Committee (MEPC 75) approved amendments to MARPOL Annex VI on procedures for sampling and verification of the sulphur content of fuel oil, including:

- definitions for three types of fuel oil samples, the in-use, on board, and MARPOL delivered sample, as well as guidelines for their safe taking;
- mandatory provisions for ships to have designated sampling points for taking representative samples of fuel oil in use, and
- procedures for the verification and analysis of in-use and on board samples that are different from those that apply to the 'MARPOL delivered' sample.

The amendments are published under Resolution MEPC.324(75) and entered into force on **1 April 2022**.

Three different samples

The amendments define three types of fuel oil samples, each accompanied by an IMO guideline that establishes an agreed method for sampling while ensuring the safety of personnel and ship.

MARPOL fuel oil samples	IMO guidelines
In-use sample: Represents the fuel oil in use at the time, and for which sampling points shall be fitted or designated in accordance with Reg.14.10 to 14.13	MEPC.1/Circ.864/Rev.1
On board sample: Represents the fuel oil in the fuel oil tanks, i.e., the fuel oil intended to be used or carried for use. The fitting or designating of sampling points for taking on board samples is not mandatory.	MEPC.1/Circ.889
MARPOL delivered sample: Represents the fuel oil delivered on board. This is the sample that shall be taken during bunkering and that accompanies the Bunker Delivery Note (BDN) in accordance with Reg.18.8.1.	Resolution MEPC.182(59)

Designating sampling points for the fuel oil in use

In order to facilitate the safe taking of in-use samples, the amendments include mandatory provisions for sampling points to be designated, or if necessary fitted, to ships of 400 GT and above. The deadline for ships to comply depends on each ship's survey schedule for the renewal of its International Air Pollution Prevention (APP) certificate:

- **Existing ships** - ships keel laid before 1 April 2022 - must designate sampling points no later than the first IAPP renewal survey on or after 1 April 2023.
- **New ships** – ships keel laid on or after 1 April 2022 - must have sampling points in place and designated on delivery.

These requirements apply to all fuel oil intended for combustion purposes, including that used for main engines, auxiliary engines, incinerators, inert gas generators, boilers, emergency equipment, etc. The requirements do not apply to fuel oil service systems for low-flashpoint fuels, i.e., fuels having a flashpoint less than 60oC.

'Designating' in this context means that the sampling points are to be clearly marked for easy identification and described in either the piping diagram or other relevant documents. The

location and arrangement of the in-use fuel oil sampling points are to be in accordance with paragraph 2 of MEPC.1/Circ.864/Rev.1:

- be easily and safely accessible;
- take into account different fuel oil grades being used for the fuel oil combustion machinery item;
- be downstream of the in-use fuel oil service tank;
- be as close to the fuel oil combustion machinery as safely feasible but considering the type of fuel oil, flowrate, temperature, and pressure behind the selected sampling point;
- be located in a position shielded from any heated surface or electrical equipment. The shielding device or construction should be sturdy enough to endure leaks, splashes or spray under design pressure of the fuel oil supply line so as to preclude impingement of fuel oil onto such surface or equipment; and
- be provided with suitable drainage to the drain tank or other safe location.

Existing sampling points may be 'designated' if they meet these requirements.

Any modification of fuel oil systems and verification of compliance with MARPOL Annex VI must be followed up by a ship's classification society. It is worth noting that plan approval and survey requirements are likely to differ from one classification society to another.

Procedures for verification and analysis of fuel oil samples

The amendments introduce two different fuel verification procedures in Appendix VI of MARPOL Annex VI. For testing of in-use and on board samples taken from ships, it has been agreed that a 95% confidence boundary of the test method shall be applied as this will match the analysis method recommended for application under sales contracts. For testing of the MARPOL delivered sample on the other hand, there will be no test margin.

In practical terms, this means that in-use and on board samples drawn by PSC shall be considered acceptable if the test result does not exceed 0.53% sulphur against the 0.50% limit, while test results for MARPOL delivered samples must not exceed 0.50% sulphur - in other words, a "hard limit". Our insight "*Are you 95% confident that your very low sulphur fuel is on spec and MARPOL compliant?*" provides additional information on the new test procedures, as well as on some of the dilemmas that may arise from the different verification standards.

Sulphur inspections – issues to be aware of

A ship may be targeted for a sulphur inspection for various reasons, e.g., the existence of a previous non-compliance or warning received concerning its fuel; the ship is scheduled to bunker at a specific port; or as part of a maritime safety administration's enhanced verification programme - or just randomly in order to reach an overall percentage inspection rate set by the PSC.

Much of the compliance with MARPOL Annex VI is documented by recordkeeping. It will therefore be important to ensure that that all MARPOL Annex VI documentation is complete and up to date prior to a port entry. The use of remote sensing equipment and portable handheld fuel analysers has become increasingly common during initial inspections by PSC. The ship's crew should, however, be aware that the results from such equipment may be of an indicative nature only and should not necessarily be accepted as the sole evidence of non-compliance. PSC inspectors are, however, likely to consider such results to be 'clear grounds' for further inspection, which may trigger a requirement for fuel oil samples to be analysed at a fuel testing laboratory. This could be either the MARPOL delivered sample provided with the BDN, or spot samples of fuel oil drawn from the ship's fuel oil lines and/or tanks. Reference is also made to

Section 4 of Resolution MEPC.320(74) on the consistent implementation of the 0.50% sulphur limit.

Where the MARPOL delivered sample is taken from the ship, a receipt should be provided to the ship. Where spot samples are drawn from the ship's fuel oil lines or tanks during the inspection, we recommend that the Chief Engineer is present at all times to verify that samples are drawn at the right location and in the correct way. The Chief Engineer should also inspect the immediate quality of the sample, verify that each sampling bottle is properly labelled and make sure the ship's own samples are retained onboard. It is important that the PSC inspector reports information such as:

- the sampling point location where the sample was drawn;
- date and port of sampling;
- name and IMO number of the ship;
- details of seal identification; and
- signatures and names of the inspector and the ship's representative.

As described in our insight "*Prepare crews for PSC spot sampling of ships' fuel*", even PSC inspectors make mistakes from time to time. And when such mistakes become the reason for ships being penalised - proper onboard procedures for fuel sampling and a well prepared and attentive crew can make a big difference in changing the outcome of a case.

We also remind ship operators and masters not to forget that a number of regions, states and ports around the world have implemented their own strict sulphur emission limits - and that the list of such places is likely to grow in the future. Our insight "*Regional sulphur emission limits at a glance*" provides a round-up of some of these places. Ship operators must therefore ensure crews are familiar with the sulphur emission limits in force in the jurisdictions to which they trade. Crews should also be provided with clear procedures and guidance to this effect. Furthermore, the recommendations provided in our alert "*Take your own bunker samples - they are a vital piece of evidence*" may be useful.

Note that the abovementioned MARPOL amendments also appear in the completely revised Annex VI, which enters into force in November 2022 and is published as Resolution MEPC.328(76).