

MARITIME SAFETY COMMITTEE
106th session
Agenda item 18

MSC 106/18/1
31 August 2022
Original: ENGLISH
Pre-session public release:

ANY OTHER BUSINESS

Oil fuel parameters other than flashpoint and examples of geographical differences

Submitted by BIMCO, ICS, INTERCARGO and INTERTANKO

SUMMARY

Executive summary: At MSC 105, the Working Group on Fuel Oil Safety noted overwhelming support to make every effort to prevent the bunkering of oil fuel that may jeopardize the safety of ships. Previously the Correspondence Group has expressed that more information especially regarding incidents related to fuel properties other than flashpoint would be beneficial. This document outlines information from fuel samples tested during 2020 – especially in relation to off specification (off-spec) occurrence rates for various parameters of ISO 8217, including geographical differences.

*Strategic direction,
if applicable:* 1

Output: 1.29

Action to be taken: 25

Related documents: MEPC 76/15; MEPC.1/Circ.884/Rev.1; MSC 100/8/2; MSC 105/5; MSC 105/WP.10 and MSC 105/20

Introduction

1 There is a continuously increasing need for transparency when ships order and receive fuel oil, hence the crucial need for a licensing scheme for bunker suppliers.

2 In 2021, BIMCO, ICS, INTERCARGO and INTERTANKO acquired a dataset from Veritas Petroleum Services (VPS), the largest bunker fuel testing company in the world, of all samples of High Sulphur Fuel Oil (HSFO),¹ Very Low Sulphur Fuel Oil (VLSFO)² and Ultra Low Sulphur Fuel Oil (ULSFO)³ excluding Marine Gas Oil (MGO) tested by VPS during 2020.

¹ High Sulphur Fuel Oil (HSFO) are fuels with a sulphur content exceeding 0.50% S.

² Very Low Sulphur Fuel Oil (VLSFO) are fuels with a sulphur content not exceeding 0.50% S.

³ Ultra Low Sulphur Fuel Oil (ULSFO) are fuels with a sulphur content not exceeding 0.10% S.

3 This document outlines information from the dataset in relation to off specification (off- spec) rates for the various parameters of ISO 8217,⁴ including geographical differences.

Background – further measures to enhance the safety of ships relating to use of fuel oil

4 The Correspondence Group on Development of Further Measures to Enhance the Safety of Ships Relating to the Use of Fuel Oil, that was re-established by MSC 103, noted that some delegations confirmed that fuel stability may affect fuel treatment on board. Impaired fuel stability could lead to hazardous situations such as blocked fuel lines and compromised fuel injection, which could result in an unacceptable loss of power.

5 The Correspondence Group agreed that there was a need for more information especially regarding incidents related to fuel properties other than flashpoint like oil fuel stability or auto ignition temperature and that possible measures should be further discussed.

6 However, as information concerning incidents related to fuel properties are of a commercial and legal sensitive nature, it is therefore difficult to obtain such information.

7 At MSC 105, the Working Group on Fuel Oil Safety noted overwhelming support to make every effort to prevent the bunkering of oil fuel that may jeopardize the safety of ships.

8 MSC 105 re-established the Correspondence Group on Development of Further Measures to Enhance the Safety of Ships Relating to the Use of Fuel Oil, and the Correspondence Group was instructed to collect information on possible further measures to enhance the safety of ships relating to the use of fuel oil (TOR 2) and consider possible measures related to parameters other than the flashpoint.

9 The Correspondence Group is instructed to submit a written report to MSC 107.

Dataset from VPS

10 The entire global dataset from VPS contains the test results from 9,622 commercial samples of HSFO, 45,850 commercial samples of VLSFO and 2,872 commercial samples of ULSFO. In total, 58,344 commercial samples of marine fuel oil were tested by VPS during 2020.

Table 1

Global	
Fuel type	Number of samples
HSFO	9,622
VLSFO	45,850
ULSFO	2,872

11 A sample of fuel oil can be off-spec on one or more ISO 8217 quality parameters at the same time. It can also be off-spec on ISO 8217 quality parameter(s) while also being off-spec (non-compliant) on the sulphur content, or only non-compliant on the sulphur content.⁵

⁴ The international standard for marine fuels which specifies the requirements for fuels for use in marine diesel engines, prior to conventional onboard treatment (settling, centrifuging and filtration) before use.

⁵ A separate document on sulphur content in VLSFO and geographical differences has been submitted to MEPC 79.

12 According to the dataset, Europe⁶ is the region with the highest off-spec rates of all the regions with significant sample sizes:

Table 2

Europe			
Fuel type	Number of samples	Off-spec rate (ISO 8217 excl. sulphur content)	Off-spec rate (ISO 8217 incl. sulphur content)
HSFO	2,465	22%	22%
VLSFO	9,988	5%	12%
ULSFO	2,145	12%	12%

13 The United States of America is the region with second highest off-spec rates of all the regions with significant sample sizes. It is observed that the off-spec rate for VLSFO in the United States of America is approximately at the same level as in Europe.

Table 3

United States of America			
Fuel type	Number of samples	Off-spec rate (ISO 8217 excl. sulphur content)	Off-spec rate (ISO 8217 incl. sulphur content)
HSFO	1,244	8%	8%
VLSFO	3,633	4%	10%
ULSFO	199	4%	4%

14 In comparison to Europe and the United States of America, Singapore, Eastern Asia⁷ and Middle East also have significant sample sizes but significantly lower off-spec rates:

Table 4

Singapore			
Fuel type	Number of samples	Off-spec rate (ISO 8217 excl. sulphur content)	Off-spec rate (ISO 8217 incl. sulphur content)
HSFO	2,353	6%	7%
VLSFO	9,570	3%	3%

Table 5

Eastern Asia			
Fuel type	Number of samples	Off-spec rate (ISO 8217 excl. sulphur content)	Off-spec rate (ISO 8217 incl. sulphur content)
HSFO	1,420	3%	4%
VLSFO	9,819	2%	2%

⁶ "Europe" includes samples from EU Countries, Faroe Islands, Gibraltar, Norway, Türkiye, Ukraine and United Kingdom.

⁷ "Eastern Asia" includes samples from China, Hong Kong, China, Japan and Republic of Korea.

Table 6

Middle East			
Fuel type	Number of samples	Off-spec rate (ISO 8217 excl. sulphur content)	Off-spec rate (ISO 8217 incl. sulphur content)
HSFO	440	5%	5%
VLSFO	3,364	2%	3%

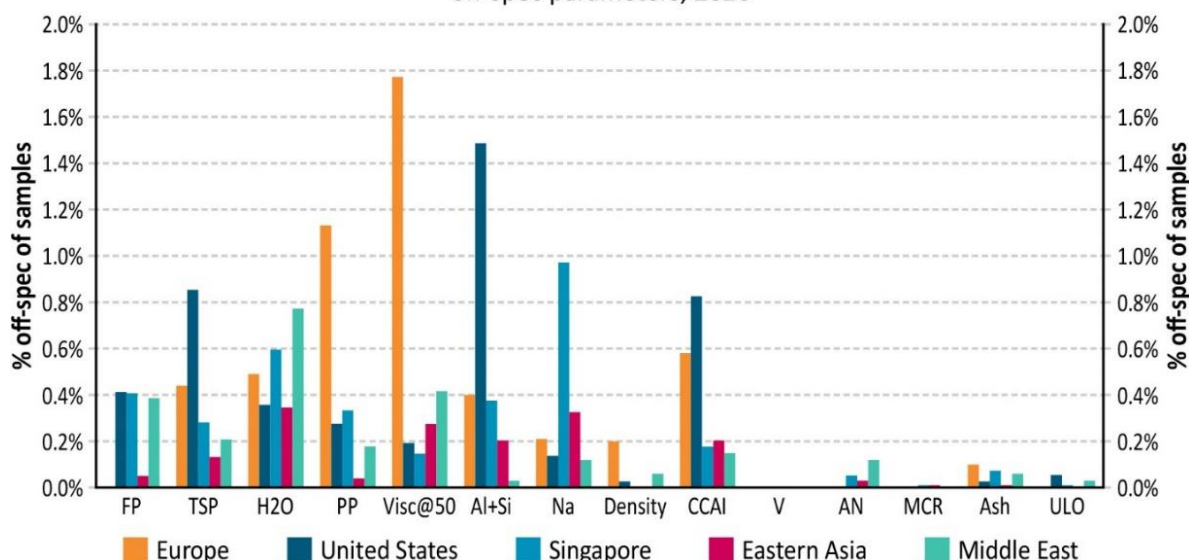
Parameters other than flashpoint and geographical differences

15 From the graph below (graph 1), it can be observed that the parameters of ISO 8217 with the highest off-spec rates overall are Potential Total Sediment (TSP), Water (H₂O), Pour point (PP), Kinematic viscosity at 50°C (Visc@50), Aluminium plus silicon (Al+Si) also known as catalytic fines (cat fines), Sodium (Na) and Calculated carbon aromaticity index (CCAI).

Graph 1

Breakdown of VLSFO by region

off-spec parameters, 2020



Source: BIMCO

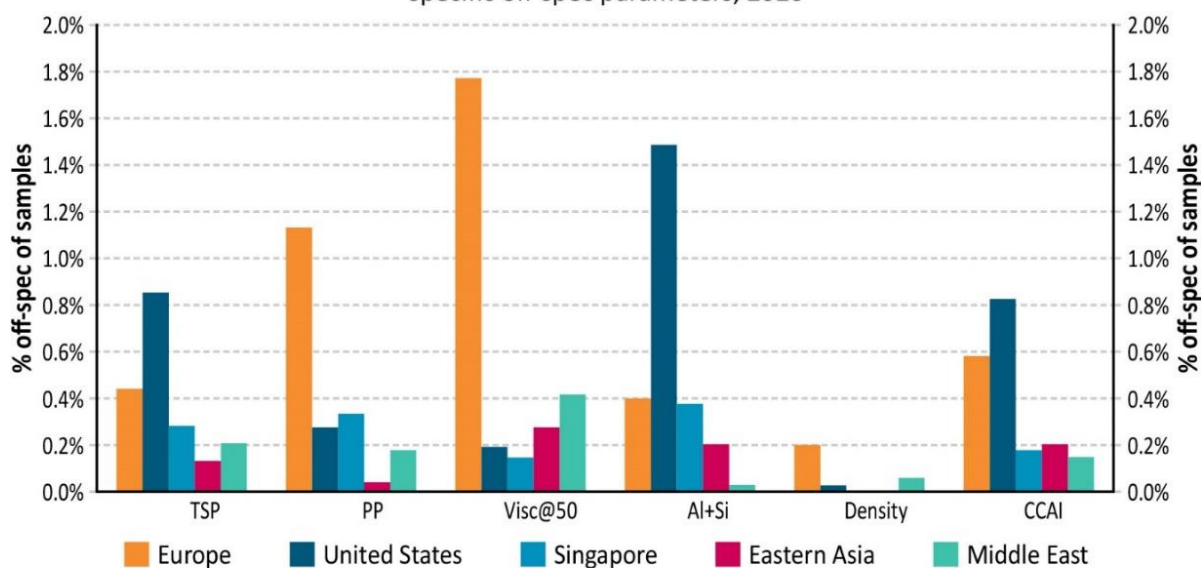
16 From the graph below (graph 2) it can be observed that in Europe the parameters of ISO 8217 with the highest off-spec rates are PP, Visc@50 and CCAI.

17 While in United States of America, the parameters of ISO 8217 with the highest off-spec rates are TSP, Al+Si, and CCAI.

Graph 2

Breakdown of VLSFO by region

specific off-spec parameters, 2020



Source: BIMCO

Focus on Europe

18 The tables below (tables 7 to 9) list the European countries with the most significant sample sizes and the highest off-spec rates for HSFO, VLSFO and ULSFO:

Table 7

HSFO – Europe			
Country	Number of samples	Off-spec rate (ISO 8217 excl. sulphur content)	Off-spec rate (ISO 8217 incl. sulphur content)
Belgium	231	29%	29%
Denmark	159	27%	28%
Germany	200	9%	9%
Italy	123	13%	13%
Netherlands	736	36%	36%
United Kingdom	207	22%	22%

Table 8

VLSFO – Europe			
Country	Number of samples	Off-spec rate (ISO 8217 excl. sulphur content)	Off-spec rate (ISO 8217 incl. sulphur content)
Belgium	1,291	4%	16%
Denmark	289	11%	15%
Germany	393	16%	28%
Netherlands	2,020	4%	18%
Sweden	185	11%	11%

Table 9

ULSFO – Europe			
Country	Number of samples	Off-spec rate (ISO 8217 excl. sulphur content)	Off-spec rate (ISO 8217 incl. sulphur content)
Belgium	461	11%	11%
Denmark	159	9%	9%
Netherlands	895	12%	12%
Sweden	260	6%	6%

Focus on Amsterdam, Rotterdam and Antwerp

19 Amsterdam and Rotterdam in the Netherlands together with Antwerp in Belgium (ARA) is one of the major bunker hubs globally.

20 The table below (table 10) outlines the off-spec rates for fuel oil (HSFO, VLSFO and ULSFO) supplied to ships in ARA during 2020.

Table 10

HSFO, VLSFO and ULSFO – Amsterdam, Rotterdam and Antwerp (ARA)			
Port	Number of samples	Off-spec rate (ISO 8217 excl. sulphur content)	Off-spec rate (ISO 8217 incl. sulphur content)
Amsterdam	309	14%	26%
Rotterdam	3,027	12%	19%
Antwerp	1,687	9%	17%
Total for ARA	5,023	11%	19%

21 It can be observed that 11% of the more than 5,000 samples from ARA were off-spec in relation to ISO 8217 quality parameters. However, if the sulphur content is taken into account the off-spec rate was 19%.

Licensing scheme for bunker suppliers

22 MEPC.1/Circ.884/Rev.1 provides an indicative example of a bunker license, which should be used by Member States or other relevant authorities for implementing licensing scheme for bunker suppliers if they desire to do so.

Proposals

23 Based on the information provided in this paper, it is proposed that Member States, including the individual ports within Member States, and relevant intergovernmental organizations consider implementing and enforcing a licensing scheme for bunker suppliers operating within their jurisdiction to combat the high off-spec occurrence rates in some poorer performing geographical regions.

24 The co-sponsors propose to:

- .1 note the information provided in this document and in particular the proposal in paragraph 23; and

- .2 include this document to the list of documents in the terms of reference for the Correspondence Group on "Development of further measures to enhance the safety of ships relating to the use of fuel oil" re-established by MSC 105 to help enhance the safety of ships in relation to fuel oil parameters other than flashpoint.

Action requested of the Committee

- 25 The Committee is invited to consider the proposals in paragraph 24 and take action as appropriate.
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