

RELEASE DATE: 19-12-2022

Monitoring the availability, quality and compliance of global marine fuel supply





Table of Contents

Executive Summary	3
Introduction	6
Methodology	6
Historical Context	7
Marine Fuel Insights	8
Insight 1 Supply & Demand	8
Insight 2 Density & Viscosity	11
Insight 3 Compliance	21
Insight 4 Catalytic Fines	27
Insight 5 Cold-flow Properties	29
Insight 6 Fuel Stability	36
Insight 7 Off-Specs	40
In the next edition of VPS Marine Fuel Insights	45
Appendix 1 VLSFO Port-Supplier Data (Nov-2022)	46

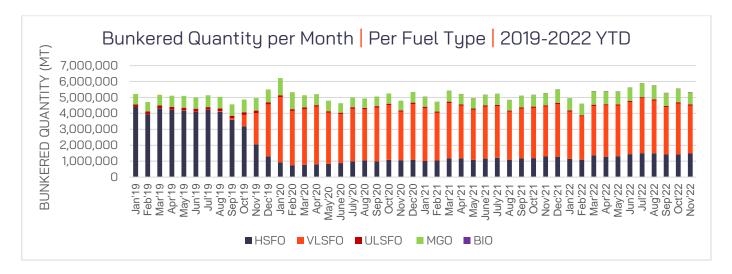


Executive Summary

Welcome to the 37th edition of Marine Fuel Insights. In this edition, we observe an increase in VLSFO off-specs, as well as a decrease in VLSFO supply. The main technical issues of this month's edition include high cat fines, high pour points and unstable fuels.

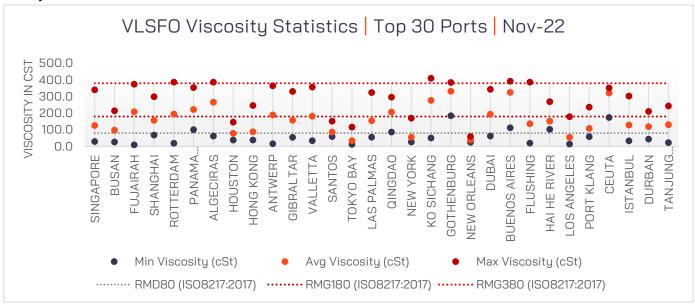
Marine Fuel Supply

Globally, HSFO supply increased by 5.2% this month. VLSFO supply slightly decreased by 1.1%, whilst ULSFO supply increased by 4.6%. MGO supply decreased by 8.7% globally this month. In total ca. 5,300,000 MT of marine fuel was bunkered and tested by VPS in November 2022.



Density & Viscosity

A general increase in VLSFO off-specs due to viscosity this month was observed, as well as a general increase in the average VLSFO viscosity. VLSFO density off-specs were observed in Fujairah and Rotterdam this month.





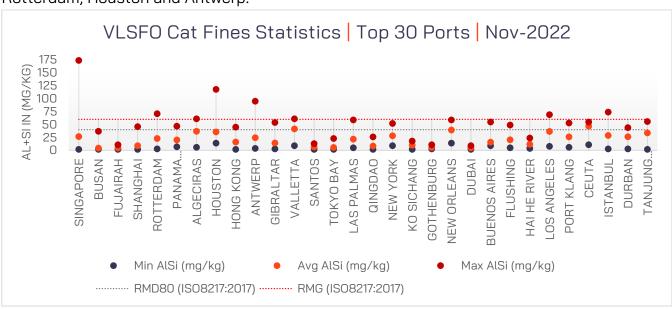
Sulphur & Flash Point Compliance

VLSO sulphur off-specs have occurred in almost all bunker regions this month, with the exception of South America and the Middle East. The VLSFO sulphur non-compliance rate this month remained constant at 1.2%. MGO flash point off-specs this month primarily occurred in Spain (Cartagena) and the United States (Miami and New York).



Catalytic Fines

There is a general increase in VLSFO cat fines this month. 15.7% of tested VLSFO bunker stems this month were high in cat fines (Al+Si > 40 mg/kg), whilst 0.7% were off-spec. High cat fines were observed in several of the top 30 bunker ports this month, a.o. Singapore, Rotterdam, Houston and Antwerp.





Cold-flow Properties

0.6% of all tested VLSFOs were off-spec due to pour point this month. PP off-specs occurred in several bunker ports, including Rotterdam, Skaw, St. Kitts and Valletta. Cold-flow properties were also a major cause for ULSFO and MGO off-specs globally.

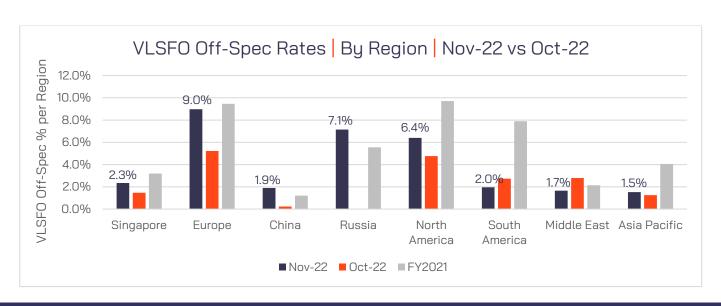


Fuel Stability

VLSFO TSP off-specs doubled compared to last month's edition. These off-specs primarily occurred in Singapore, Houston, Hong Kong and Skaw.

Off-Specs

For the first time since May 2022, we observe a substantial increase in VLSFO off-specs (+1.6%), now at 4.5% of all tested VLSFO stems. The main technical off-spec parameters to watch out for this month are high cat fines, high pour points and unstable fuels.





Accessing Marine Fuel Insights

As global market leader in marine fuel testing and bunker quantity surveys, Veritas Petroleum Services (VPS) has tested the most marine fuel samples in the market to-date and has witnessed first-hand what new fuels have to offer, and what the expected issues and risks in managing these fuels will be. Based on this data, VPS has launched Marine Fuel Insights.

Marine Fuel Insights is a monthly subscription-based service, where VPS' technical expertise is combined with its proprietary database of fuel oil and distillate samples, to derive special insights for its users.

Topics covered in the report include the availability of marine fuels, specifically looking at VLSFOs, the quality of the tested fuels, potential operational issues, the performance of the fuel on a commercial level (e.g. energy content), operational level (e.g. catalytic fines, cold-flow properties), and compliance level (e.g. sulphur content).

Marine Fuel Insights is aimed at reducing the anticipated operational issues caused by the introduction of VLSFOs to the market. Users of this service should use the information to prevent vessel downtime, operational delays, maritime incidents and in general to manage their fuels appropriately post-2020.

The information contained in Marine Fuel Insights should provide bunker managers, fuel procurement officers, technical managers, fleet managers, fuel suppliers and chief engineers with the necessary information, recommendations and insights to anticipate and efficiently manage VLSFOs.

Marine Fuel Insights is released on a monthly basis by VPS. You can <u>subscribe to Marine Fuel</u> <u>Insights here.</u>

