MARINE FUEL INSIGHTS #48 Q1-2024

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

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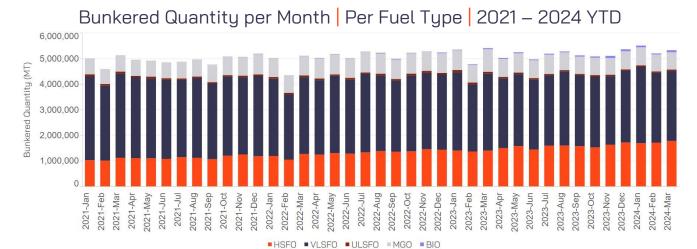


Executive Summary

Welcome to the Quarter 1 2024 edition of Marine Fuel Insights. In this quarter's edition, we observe that the marine fuel supply hit an all time record with a global 3% increase in marine fuel supply since Q4-2023, primarily driven by increases in HSFO and VLSFO deliveries. Read on to learn more!

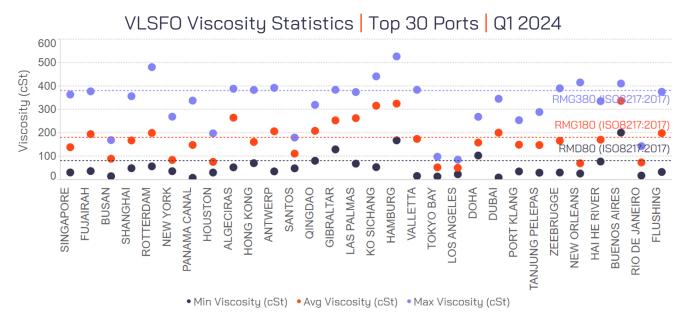
Marine Fuel Supply

Marine fuel supply grew in Singapore (+7.5%) and the greater Asia Pacific (+5.8%) region, but decreased in all other bunkering regions. Marine fuel supply dropped substantially in South America (-16.4%), Europe (-8.7%) and China (-8.9%). Biofuel supply grew globally by 20%, though still a marginal share of marine fuel supply. Overall marine fuel supply decreased by ca. 2% this quarter.



Density & Viscosity

Higher number of VLSFO viscosity off-specs (only 10% marginal) were observed in the following ports: Hamburg, Ko Sichang, Lisbon, Rotterdam and Buenos Aires. For HSFOs, we observe a large increase in off-specs due to viscosity, reaching 48% this quarter (ca. 90% serios off-specs).

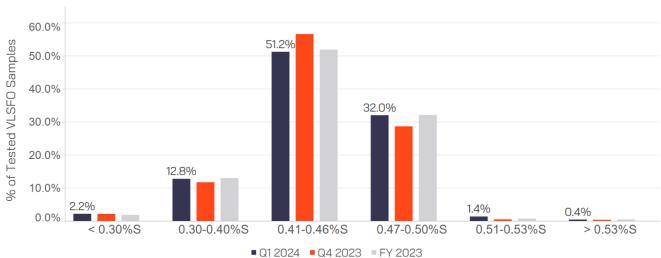


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Sulphur & Flash Point Compliance

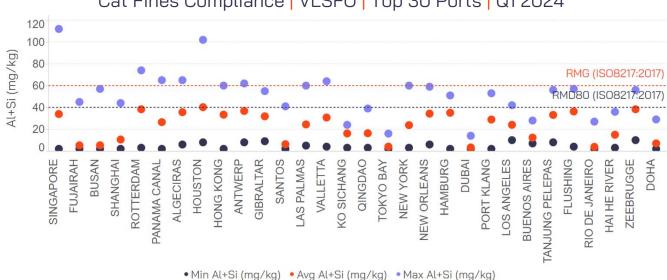
In this quarter's edition, global VLSFO sulphur non-compliance has **increased to 1.8%** of all tested VLSFO stems in Q1 2024, with February 2024 reaching 2.1%. For comparison, the VLSFO sulphur compliance in Q4 2023 was 0.9%.



VLSFO Sulphur Compliance | Global | Q1 2024

Catalytic Fines

The total proportion of VLSFO bunker stems with relatively high cat fines is now **19.8% of tested VLSFOs** in Q1 2024. We observe some serious VLSFO cat fine off-specs in Houston (max. 102 mg/kg), as well as AlSi off-specs in a.o. Houston, Algeciras, Singapore, Philadelphia, Valletta, Panama Canal and Amsterdam. The VLSFO-bio blends distribution has shifted towards the 41-60mg/kg category, having a significant increase to 20.9% this quarter from 3.5% in Q4 2023.

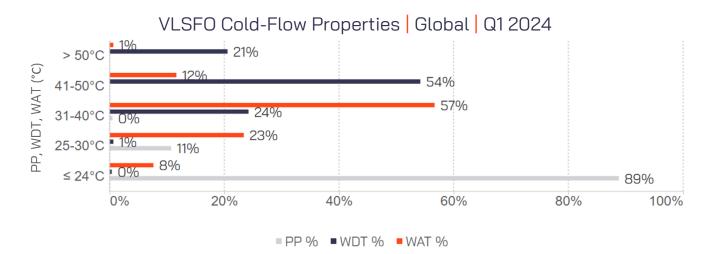


Cat Fines Compliance | VLSFO | Top 30 Ports | Q1 2024



Cold-flow Properties

This quarter 99.5% of tested VLSFOs had pour points below 30°C. For the rest of 0.5% we observed VLSFO PP off-specs occurring primarily in North America this quarter, especially in Philadelphia, Houston and New York, though we observe some PP off-specs in Singapore, Ko Sichang in Thailand and Gothenburg in Sweden as well. Only 0.2% of the tested MGOs were off-specs occurring primarily in the Netherlands' main ports, Singapore and in Antwerp in Belgium.

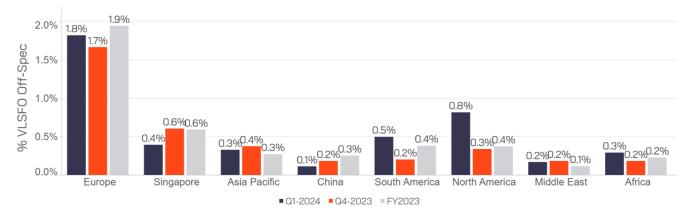


Fuel Stability

In Q1 2024 TSP off-specs were observed in Spain, Kenya and Singapore. The VLSFO off-spec rate due to high TSP remained stable at 0.2% of all tested VLSFO samples this quarter. The total percentage of VLSFOs with relatively high TSP increased slightly to 3.5%. VLSFO TSP off-specs were observed in a.o. the ports of New York, Hong Kong, Busan and Melbourne.

Off-Specs

The global VLSFO off-spec percentage has increased by 0.7%, currently at **4.4% of all tested VLSFO samples** in Q1 2024. We observed an increase in VLSFO off-specs in Europe, the Americas, China and a slight increase in Africa. Off-specs have been reduced or remained stable in other bunkering regions.



VLSFO Off-Spec Rates | By Region | Q1 2024

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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 quarterly 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, with an emphasis on 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 quarterly basis by VPS. You can request more information about how you can subscribe <u>here</u>.