Bunker Quality Trends

May 2023

Prevention is better than cure when it comes to costly bunker quality claims.

OFF-SPECIFICATIONS
& HIDDEN LOSSES

QUALITY INDEX
& TRENDS

BUYING STRATEGIES
& RISK MANAGEMENT

Integr8 Fuels

Introduction: Prevention is better than cure when it comes to costly bunker quality claims.

The importance of bunker quality is now firmly back in the spotlight since the spate of chlorinated solvent contamination incidents in Singapore in Q1 2022. Whilst this was a "one in three or four-year incident", it again has peaked awareness in quality when the teething pains of IMO 2020 were perhaps falling to the back of our minds.

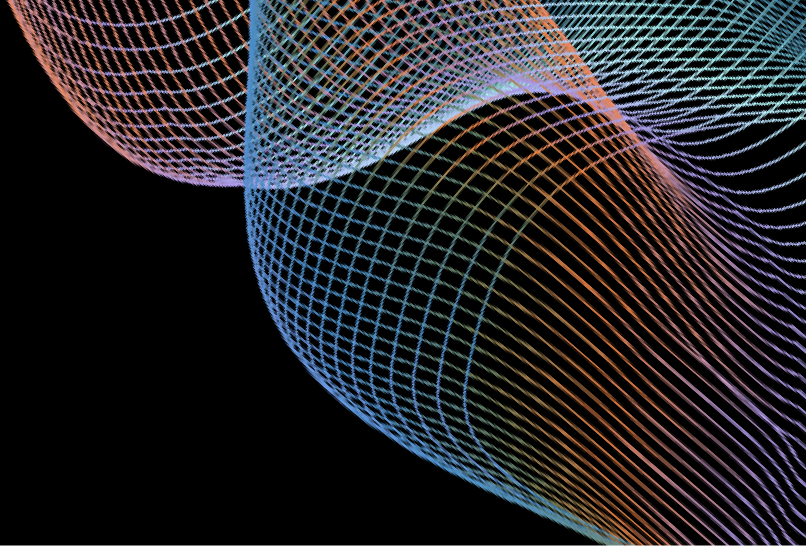
This is the second Integr8 Fuels Quality Report covering the last six months of supplies globally where we again dissect and compare the likelihood of hidden losses and off-specification issues across all commercial grades of bunkers and key ports.

Using 'best in class' available data from over 60 million metric tons of deliveries globally across 1,200 locations and from over 800 suppliers, we will also assess fuel quality trends using our own Integr8 Quality Index which scores the proximity (or otherwise) of individual parameters within each sample to the relevant Table 1 or Table 2 specification limits within ISO 8217.

Finally, and given the context of the challenges, we will explore buying strategies which may avoid the situation in that a claim is time-barred in accordance with the general terms and conditions of supply.

Data Used in This Report

+60m	1,200	+800
MTs of Deliveries	Global Locations	Suppliers



Part 1: Off-specification frequencies

How likely are we to be faced with an off-specification situation?

In the last 180 days, owners' analysis available to Integr8 Fuels has highlighted that you are most likely to have an off-specification issue* with Marine Gas Oil (MGO) followed by High Sulphur Fuel Oil (HSFO) and finally, Very Low Sulphur Fuel Oil (VLSFO). See Figure 1.

Grade	Off-Spec %	Compliance Off-Spec %	Critical Off-Spec %	High Risk Off-Spec %	Low Risk Off-Spec %
HSFO	2.9	0.2	0.4	0.6	2.3
VLSFO	2.3	0.7	0.6	1.3	1.0
MGO	3.2	2.0	0.2	2.2	1.0

Figure 1: Types and frequencies of off-specification incident by grade

*Beyond 95% confidence for a parameter listed in Table 1 or Table 2 of ISO 8217:2010

What is the likelihood of receiving non-compliant or critically off-spec bunkers?

It is always important to consider the context of the off-specification incidents.

To do this, it is essential to consider the likelihood of MARPOL (Sulphur) or SOLAS (Flash Point) infractions and the likelihood of critical off-specification incidents such as Cat-Fines, Total Sediment Potential, Used Lubricating Oil, Sodium and Ash Content (high risk) against routine and easily rectifiable off-specification issues classified "low risk" such as a High Viscosity in HSFO.

Despite many variables, one constant is always present when comparing the likelihood of off-specification occurrences and that is one of commercial pressures. These of course vary due to many factors, not least some of the geopolitical challenges we face globally currently.

The rule of thumb is that fuel quality worsens with increased flat price, and blenders models (which affects much of the oil we ultimately purchase) are tightened or slackened because of crack spreads, for example, between a cutter stock (such as gas oil) and the base (perhaps HSFO). Indeed, it was unsurprising that quality issues surfaced in H1 2022 as the Ukraine conflict took effect on the market. The effect of aggressive blending will be identified many times in this paper. When comparing Figure 1 against the previous fuel quality report published in September 2022, it is noticeable that off-specifications have remained at similar levels. However, we have identified an increase in MGO off-specifications with regard MARPOL and SOLAS compliance (Sulphur and Flash Point).

Compliance wise it is unsurprising to note that only VLSFO and MGO are challenges, mainly because of aggressive blending for Sulphur, although the use of non-Marine Gas Oil grades is a significant factor for MGO Flash Point performance.

Combining both compliance and high risk off-specifications, MGO is now seen to be the most challenging, followed by VLSFO, and finally, HSFO. That said, there are many nuances, from region-to-region, port-to-port, and even supplier-to-supplier, at the same location. It therefore remains essential to consider these when buying bunkers and we will address some of the challenges later in the paper.

OFF-SPECIFICATIONS
MGO ↑

Availability of products (March 2023)

Unsurprisingly, Marine Gas Oil is the most available product (675 ports) given the ability to substitute and supply higher quality inland or automotive grades, and the ease of logistics to supply what are quite often small quantities.

Very Low Sulphur Fuel Oil is also seen to be readily available across all continents but at 28% fewer ports (492 ports). This is because of larger quantities being ordered and the storage and barge infrastructure to support these supplies in general. High Sulphur Fuel Oil is the only product which is not readily available, with only 215 ports listed, as of March 2023 (see Figure 2). HSFO availability is centered around bunkering hubs and geographically key areas likely to receive passing trade from VLCCs and/or other scrubber fitted sectors. It is important, therefore, to plan to bunker carefully for HSFO and equally consider the type of scrubber fitted to the vessel and any local limitations in forthcoming voyages that may require a fuel switch to LSMGO for example.

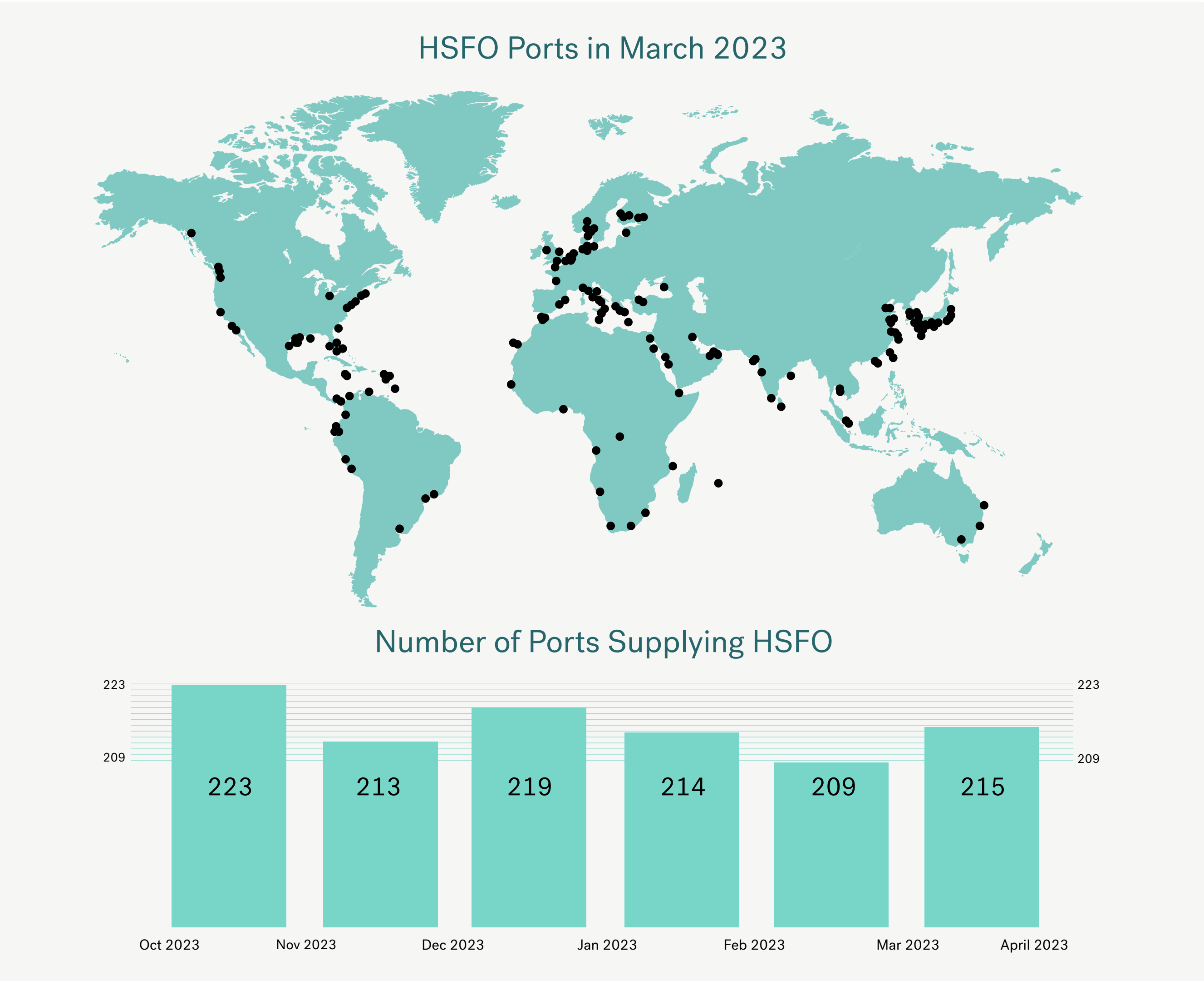
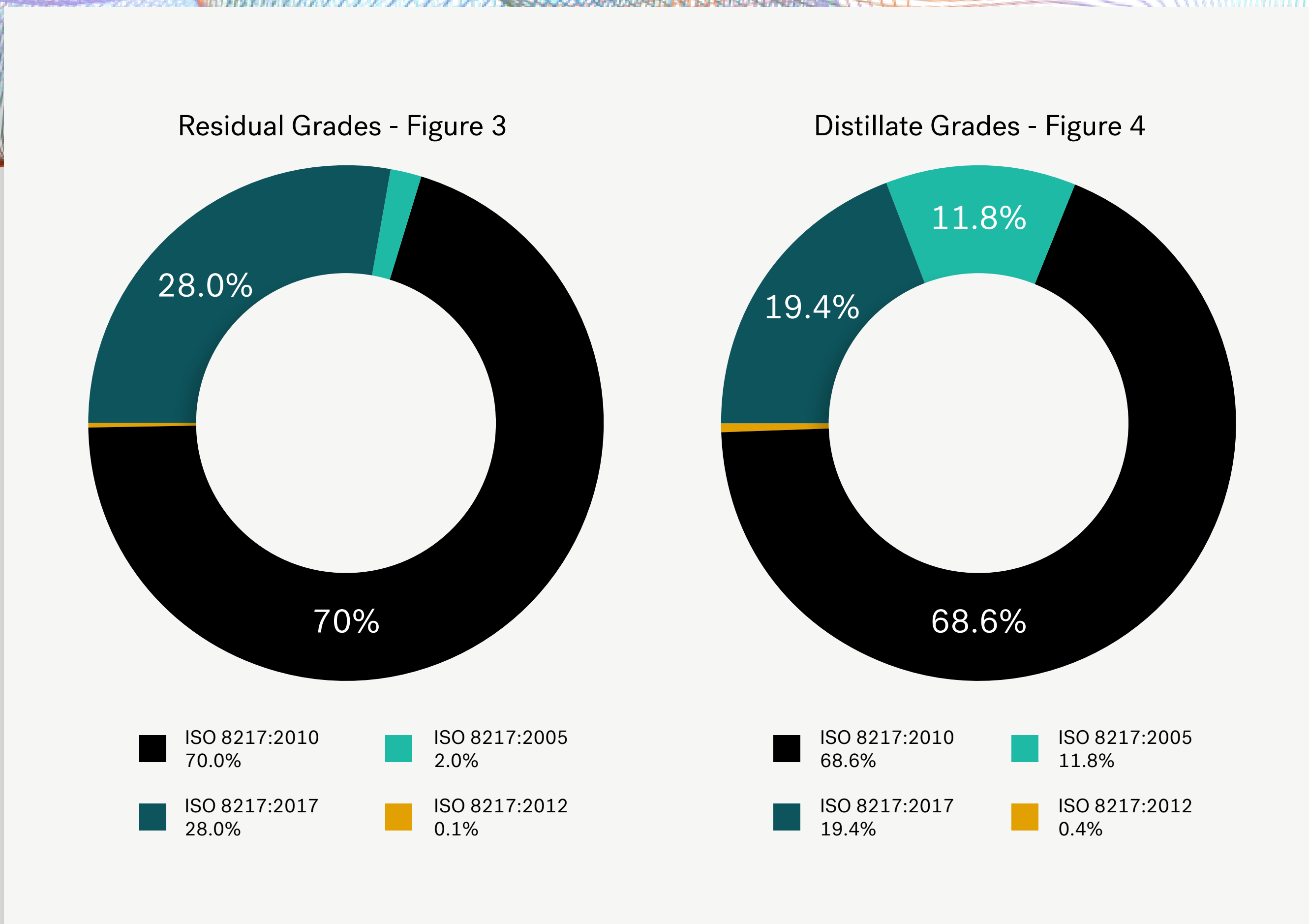


Figure 2: Availability of HSFO 380 March 2023

Availability of grades (March 2023)

Even as we eagerly anticipate the new version of ISO 8217 expected in 2023 or 2024, we continue to work in the past when it comes to the specifications we buy and sell on a day-to-day basis.

The scale of the challenge can be laid bare by considering the charts Figure 3 and Figure 4 below which identify the split of ISO 8217 grades traded by product group in the last 180 days with the latest version of the specification (2017) only being guaranteed for just over one fifth of trades.



Figures 3 and 4: Traded Specifications Guaranteed (last 180 Days)

Why is the take up for ISO 8217:2017 specifications so weak?

In the last 180 days only 28% of residual fuels and 19% of distillates was guaranteed to the 2017 specification.

In our opinion, this is due to concerns levelled by stakeholders as to some of the small print that is often forgotten when we look at ISO 8217. You would be forgiven to perceive that over time specifications have gotten tighter, indeed Table 1 and 2 increased the number of guarantees in 2010 from 2005 specifications. However, Clause 5 has arguably weakened, certainly in the eyes of owners changing from a very strict requirement of the fuel being a hydrocarbon in 2005 to using much broader wording in 2017 by stating the fuel **"shall consist predominantly of Hydrocarbons primarily derived from Petroleum sources"** and adding the hurdle of defining at what concentration the material(s) present cause the fuel to be unacceptable for use.

To put the challenge into context, the conclusion as to what components caused the "Houston Problem" in 2018 has still not been made and given there are millions of compounds and the only international standard, ASTM D7845, detects just 29 of them.

Moreover, despite there being at least 10 years' learning experience by laboratories, there has been little adjustment to the advice provided to owners and a continued reticence to share information to support the challenge the industry continues to face.

Ultimately ISO 8217:2017 simply presents more hurdles to jump when the inevitable Clause 5 notification is received, and for this reason in certain circles it is actively avoided by some owners. If we turn our attention to the future, this will result in a significant challenge for the industry as the next version of ISO 8217 is expected to act on existing quality concerns especially with VLSFO, and to a lesser extent, MGO.

Therefore, if charter parties continue to work to older specifications and, as a result, demand for the new specifications is not there, suppliers will continue to supply 2010 or 2017 specifications, the new guarantees afforded by the latest specification will not make it onto the contractual guarantees, and we rinse and repeat. For this reason, we actively encourage all stakeholders to work to the latest version of ISO 8217 going forwards.

ISO 8217:2017	28%	19%
Fuels guaranteed to 2017 specifications (last 180 days)	Residual fuels	Distillate fuels

Why is there more 2005 material being traded for distillates than for residual fuels?

During the period assessed for the report, 8% of all marine fuels supplied by Integr8 Fuels were still only guaranteed to 2005 specifications. Drilling into this further, it can be seen in the charts on page 6 that this is predominantly a distillate issue, with 12% of these fuels being still sold as 2005 (Figure 4) compared to only 2% of residual fuels (Figure 3).

2005 specifications are virtually eradicated globally for residual fuels apart from small pockets of legacies, such as Japan and Korea where almost one third of all fuels are only guaranteed to this standard. The same, however, cannot be said for distillate fuels with almost five times more fuels still being sold to this 22-year-old specification, the supply of which is particularly prevalent in the Indian subcontinent with pockets noted elsewhere, one such area being the eastern seaboard of the United States, in particular Norfolk (Virginia, USA). Here, all fuels sold were only guaranteed to 2005 specifications in the last 180 days - this undoubtedly as a result of the viscosity specifications which are not compliant with the 2010 limits of 2.0cSt minimum at 40°C (Figure 5).

Port	Density at 15°C kg/ltr	Sulphur % wt	Viscosity at 40°C cSt	Off-Spec Viscosity % (v2010) <2cSt
Norfolk, Virginia	0.839	0.06	1.9	65%

Figure 5: Typical LSMGO fuel quality in Eastern Seaboard USA

Part 2: Tracking trends with Integr8's Quality Index

The general trends from this report to the last are rather subtle, but of significant note is that VLSFO quality is seen to continue to improve slowly, a trend that can be tracked back as far as August 2021.

This trend is supported by a fall in critical off specs (such as TSP and AlSi) to 0.6% in this period. It is important to note that the Quality Index not only picks up on "off-specification" incidents beyond 95% confidence but also fuels that are within limits but close to the specification. That said, it is a very general guide to fuel quality that we will explore in much greater detail within this document.

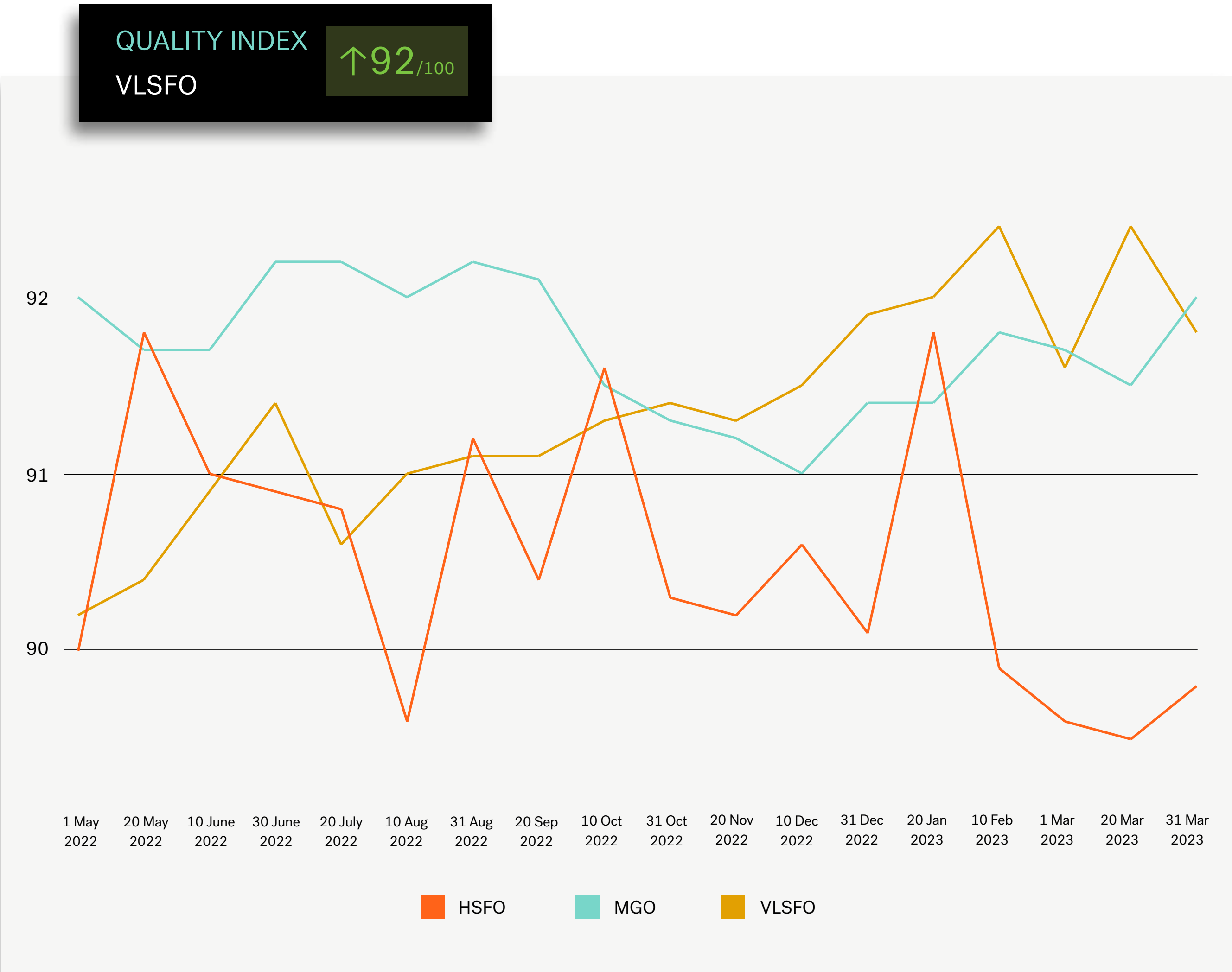


Figure 6: Integr8 Quality Index for HSFO, VLSFO & MGO

Focus on HSFO - quality trends

2.9% of all HSFO supplies tested outside of specification (and beyond 95% confidence limits) for ISO 8217 Table 2 parameters in the last 180 days, this down from 3.6% when compared to previous.

The data identifies that the risk of elevated Sulphur (above 3.5% wt) or Flash Point (SOLAS) compliance is low. Based on the cross section of off-specifications, we can identify the hit-rates of high risk off-specification matters such as Aluminium and Silicon and TSP at extremely low levels of around one supply per thousand each (Figure 7).

In the last 180 days, one third of all off-specification incidents are because of Viscosity infractions above 380cSt, this almost static to that reported in the previous period, suggesting that blending targets continue to be pushed to the absolute limit to prevent giveaway.

Water content infractions are also remarkably similar, counting for a quarter of all off-specification incidents.

Fuels testing above 3.67% Sulphur have halved in comparison to the previous period, but this continues to be a challenge in a few parts of the world, including smaller UAE ports such as Khorfakkan and Sharjah where 33% of all such fuels (testing 3.67 or above) occurred.

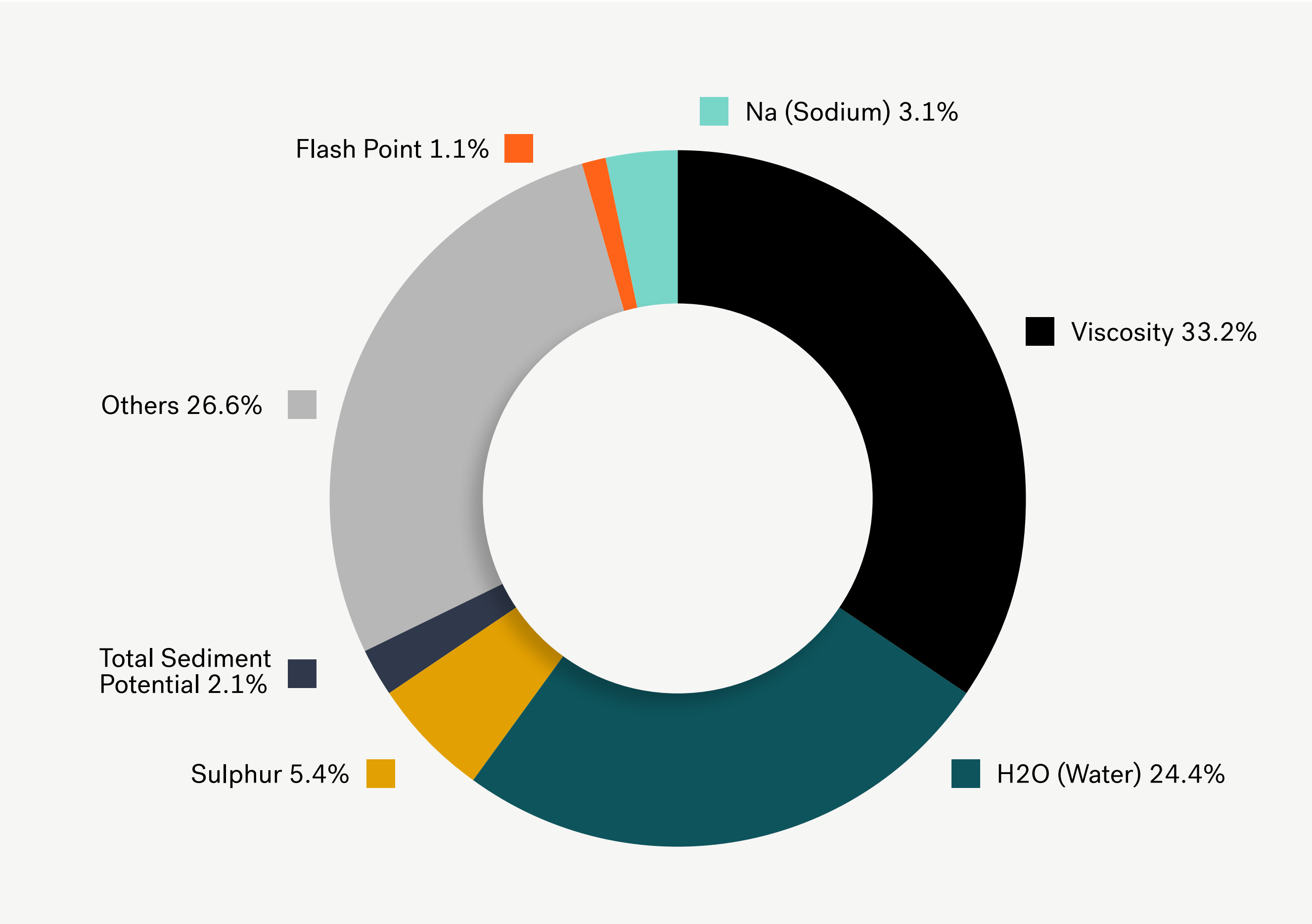


Figure 7: HSFO Off-specification distribution by parameter

Focus on HSFO - location trends

Many of the other issues are again, because of blending in the bunker hubs with givea-way being minimised.

This is easily identifiable in ARA and Singapore where 41% of all such fuels (which had tested 3.51 and 3.66) and 21% of all fuels (which had tested above 3.67) were identified respectively.

An important point here is whilst there are no statutory requirements for Sulphur with High Sulphur Fuel Oil, scrubbers are often only certified by Class (flag) for using fuel oil up to 3.5% Sulphur. For higher Sulphur content, approval would be required as use of fuel containing more than 3.5% is not allowed by IMO on board vessel.
Indeed, even if class granted an approval, operational constraints may be required to achieve the emission ratio such as reducing the engine load or increasing the wash water flow.

Therefore, simply ordering HSFO 380 will not provide sufficient contractual guarantee in the event of an issue as described in Figure 8 and may expose the end user to costs associated with handling such a fuel if contractual protection is not in place.

Port	Hit Rate Fuels 3.51% - 3.66%	*Global Distribution 3.51 – 3.67%	Hit Rate Fuels 3.67%+	Global Distribution 3.67%+
ARA	2.4%	22%	0.3%	13%
Singapore	0.8%	19%	0.1%	8%
Spain	2.2%	9%	0.0%	0%
Gibraltar	2.4%	6%	0.0%	0%
Fujairah	0.0%	0%	0.0%	0%
UAE (excl. Fujairah)	1.4%	2%	3.6%	33%

Figure 8: Distribution of Sulphur content in HSFO

*Global Distribution refers to the percentage share of off-specification results in that area against those noted globally.

Focus on HSFO - H20 trends

Water infractions make up almost a quarter of all off-specification issues for HSFO with three locations responsible for over half of all water contents that exceed 0.6%, namely Panama, Hong Kong, and Singapore.

Hidden losses because of water content can therefore be significant in some locations, for example, despite 95% of all fuels testing within the 0.5% limit in Hong Kong, given the average water content of 0.36%, this may account for losses of 1.6 USD PMT (based on average 3.5% pricing of $450 last 180 days in HK). See Figure 9.

Port	Average Water Content % Vol	Hit Rate Fuels 0.5%-0.6% Incl.	*Global Distribution 0.5%-0.6% Incl.	Hit Rate Fuels 0.65%+	Global Distribution 0.65%+
Panama	0.19	2.0%	12%	3.7%	15%
Hong Kong	0.36	1.6%	8%	3.5%	11%
Singapore	0.27	0.8%	39%	0.8%	25%
Spain	0.24	0.0%	0%	0.4%	2%
Gibraltar	0.17	0.5%	1.5%	0.5%	1%
Fujairah	0.14	0.0%	0%	0.5%	2%

Figure 9: Distribution of Water content in HSFO

*Global Distribution refers to the percentage share of off-specification results in that area against those noted globally.

Focus on VLSFO - quality trends

2.3% of all VLSFO supplies tested outside of specification (and beyond 95% confidence limits) in the last 180 days for ISO 8217 Table 2 Parameters - this reduced from 2.7% at the time of the previous report.

The data identifies that the risk of MARPOL non-compliance is significantly higher globally than HSFO at 0.7%, a fall from 0.9% previously, however this again does not tell the full story given the elevated risk of non-compliance noted around blending hubs.

Based on the cross section of off-specifications, we can identify the hit-rates of high risk off-specification matters such as Aluminium and Silicon and TSP both at rates of around two supplies per thousand, with TSP issues roughly halving compared to previous. Again, these risks are magnified in blending hubs rather than those areas with either simpler blending models or refined products available.

Delving a little deeper, and more concerningly in the last 180 days, almost two-thirds of all off-specification VLSFO occurrences are because of Sulphur, Water, TSP & Cat-Fines (Al Si) issues with Sulphur alone again accounting for almost one third of all off-specs (Figure 10), and virtually all compliance matters given Flash issues are only noted in under one sample in 1,000. Viscosity and Density issues are not prevalent to the same level as HSFO due to these not being targets for blending.

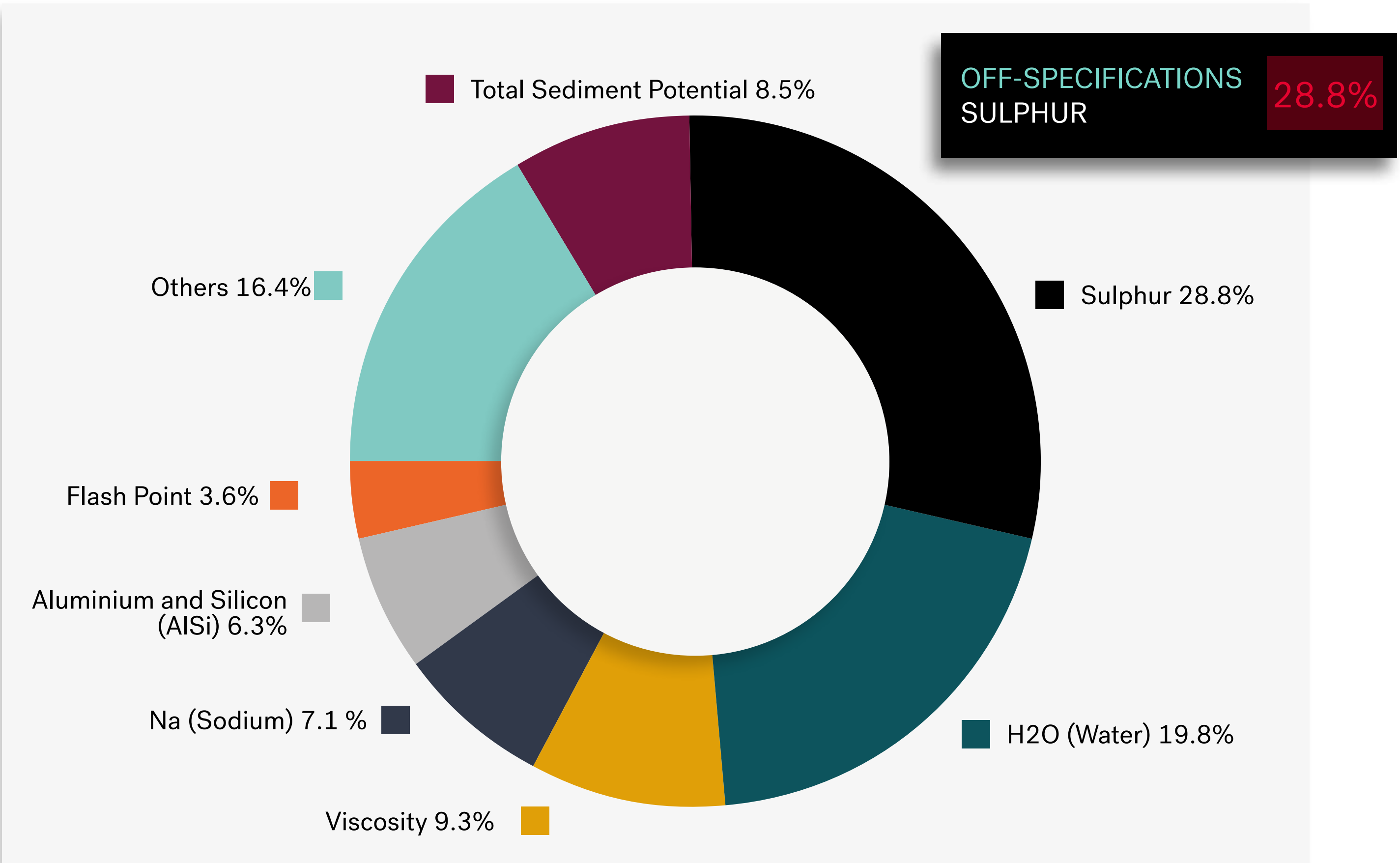


Figure 10: VLSFO off-specification distribution by parameter

Focus on VLSFO - location trends

Despite some of the stories to the contrary, from a global standpoint, VLSFO quality remains good.

However, significant regional variances can be noted, none more so than for Belgian and Dutch ports (or ARA) where receivers are still approximately 14 times more likely to receive a notification of a VLSFO above 0.50% than in Singapore and more than five times more likely, on average, than other ports in the rest of the world (Figure 11).

As identified in the previous report, we continue to identify the same trends with respect to supplier performance which vary wildly from one to another including (but not limited to) in the ARA region and Italy where we will now look in more detail.

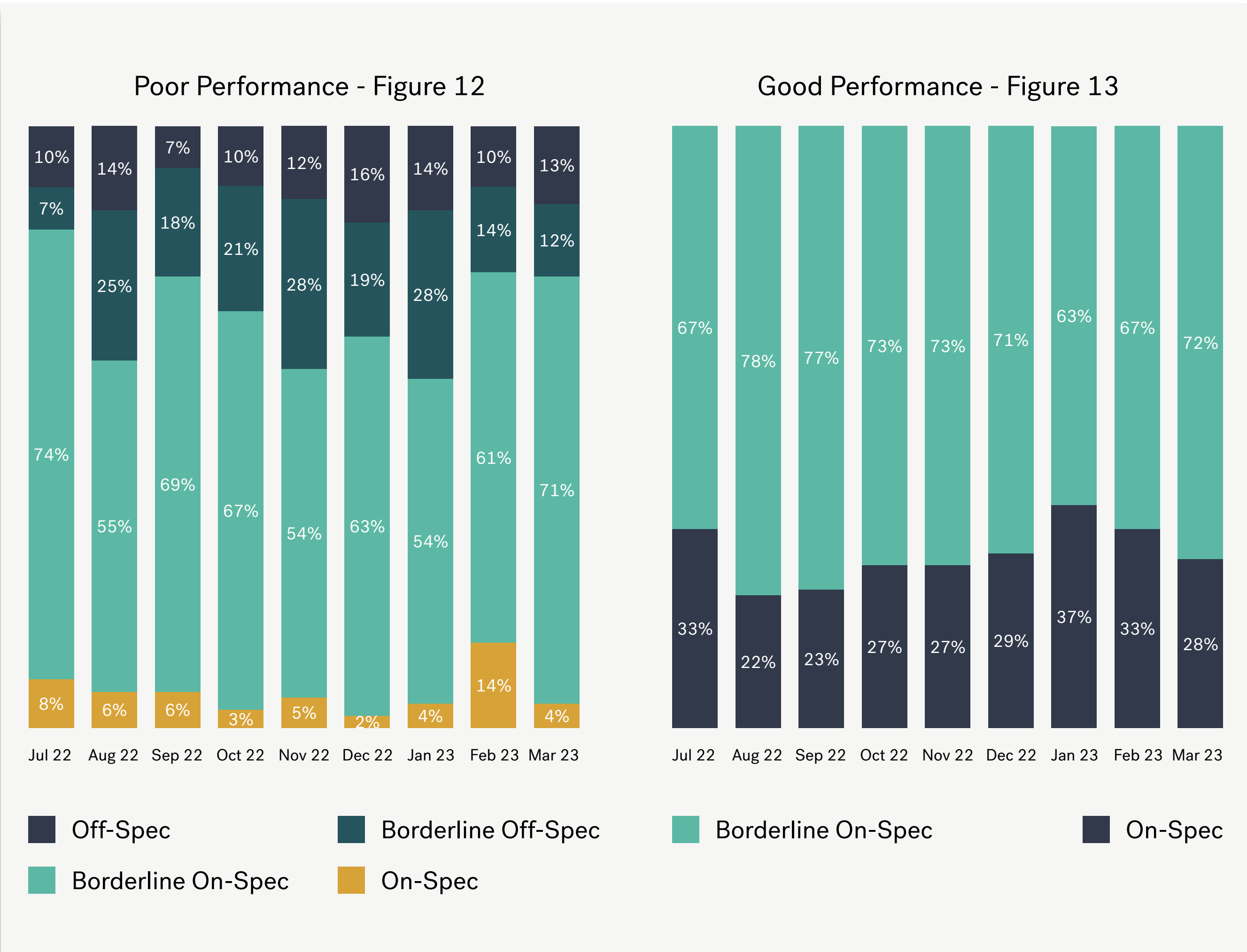
Country	Sulphur % Wt Avg	Tolerance Sulphur % 0.51-0.53 Incl.	Off-Spec Sulphur %
Belgium & Netherlands (ARA)	0.48	8.2% (10.0%)	3.2% (2.7%)
Italy	0.47	3.6%	4.4%
Rest of the World	0.45	1.4 (1.6%)	0.7 (0.9%)
Singapore	0.46	0.5% (0.8%)	0.3% (0.3%)

Figure 11: % of deliveries last 180 days with Sulphur tested in categories spec +95% confidence or off-specification for VLSFO. Values in brackets refer to previous levels for trending purposes.

Amsterdam, Rotterdam and Antwerp (ARA)

Focusing on ARA, when we drill down to individual supplier performance and referring to one anonymised example below, we note that, in the case of October 22 to date, we have strong grounds to believe that at least 10% of all deliveries were non-compliant and more recently around a quarter of all fuels testing above 0.50% Sulphur (Figure 12).

At the other end of the spectrum, we can identify examples of suppliers with excellent Sulphur compliance who, in the last three months do not have a single sample that exceeded 0.50%wt (Figure 13).



Figures 12 and 13: ARA supplier's VLSFO content (last 180 days)

Why is ARA seen to perform so poorly?

Many theories exist as to why some suppliers have much poorer Sulphur compliance data than others.

Firstly, there is always the possibility of inaccurate samples, however I would debunk this theory due to the sheer number of issues. Much more likely from experience, this can often be because of the difficulties of buying ex-wharf basis a shore tank quality certificate and then the fuel picking up cross contamination before it even reaches the barge. This is a significant source of frustration and one that must be addressed as there is little or no recourse for the supplier in such an event presently.

Finally and most concerningly, is that in particular in the case of the example cited in Figure 12, the practices remain that several of their inland barges, which do not have separate manifolds such as chemical tankers which can be used for bunkering elsewhere, were seen to switch stowage in-between HSFO and VLSFO and back with the first delivery post a HSFO movement almost inevitably testing above 0.5%, no doubt due to the common deck lines (and/or sampling points) onboard the barge. This is clearly a substantial risk and one that if identified should be avoided wherever possible. See example in Figure 14.

Of course, when comparing analyses, we focus on the quality of laboratories and the need for the gold standard accreditation of ISO 17025. What is often ignored, however, is the need to ensure that the sample is always representative of the fuel supplied and that there is no cross-contamination in the continuous drip sampler.

Source	Quantity MT	Sulphur % Wt
Barge Tank	197	0.50
Barge Line	3	2.50
Vessel	200	0.53 (Theoretical)

A barge line contains 3 MT of HSFO clingage and a barge tank 197MT of VLSFO at 0.50% Sulphur. 200MT of VLSFO is then supplied.

Figure 14: Linear Sulphur blend

Italy

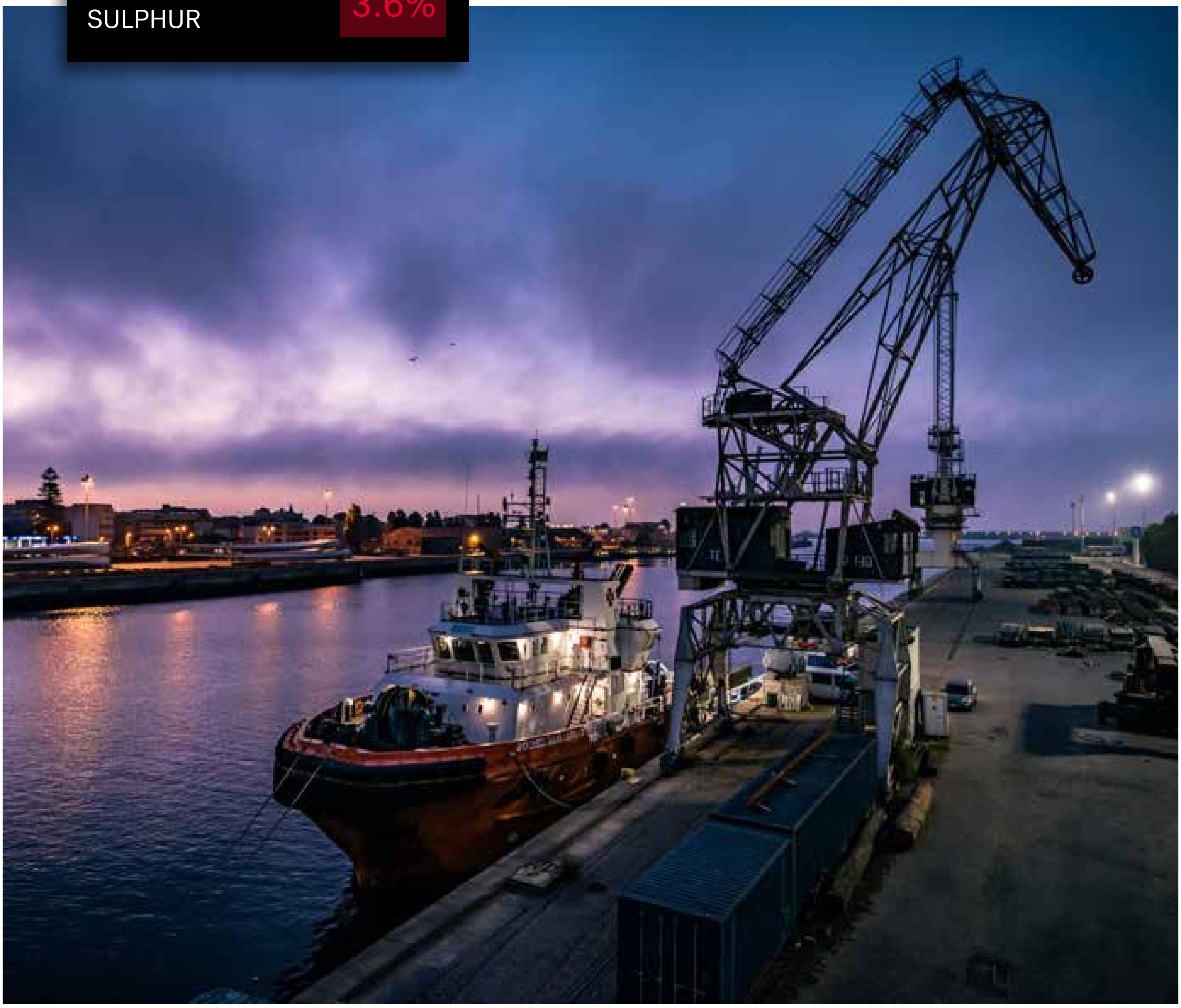
Interestingly, another area in the world that is susceptible to much higher risk for Sulphur non-compliance is Italy, with as many as 3.6% of all samples testing at or above the carriage ban of 0.54%.

Indeed, on closer investigation the same practices that are prevalent in ARA of switching from HSFO to VLSFO and back are present and can be attributed as the root cause in many cases with the need to drill down as far as the barge itself to identify those most likely to have problems.

It is also noticeable, however, that some of the off-specification incidents show none of the hallmarks of barge cross-contamination, which again suggests that the supply chain integrity may be compromised at some stage.

All the above considered, what remains abundantly clear is that it is possible, by excluding such poor performing suppliers, to reduce the risk of a VLSFO testing in ARA above 0.50% by around two thirds and the chances of a fuel exceeding the carriage ban of 0.54% Sulphur by almost 90%. The need for smart data-driven buying can never be clearer than with such examples provided.

NON-COMPLIANCE SULPHUR 3.6%



Water content and a greater risk of non-homogenous VLSFOs

Water content is the next most likely parameter to be found off-specification with around one in five fuels seen to be off-specification in the last 180 days, this despite the global average for Water being historically low and falling further.

To understand the frequency and the hit -and-miss nature of these issues, it is important to understand the characteristics of VLSFO and how this may affect the quality of fuels across a supply chain all the way to the end user.

The blending model, as previously described, targets the requirement that the fuel complies with the Sulphur limit of 0.50% max, and therefore all roads lead to Rome in that effect, potentially at the cost to quality and even the stability and homogeneity of the blends themselves, this noted by anecdotal evidence of blends separating back into their individual components.

Continued...

Figure 15: Global average Water content in VLSFO % vol

The aggressive blending that we are now familiar with is then compounded by the nature of the fuels themselves. VLSFOs are generally much waxier than HSFOs and as a result routinely need to be stored at higher temperatures for longer periods of time, this at least 10°C over the Pour Point.

They are also much lower in Density and Viscosity, hence, with the added effect of heat lowering these further, this increases the potential for insoluble metals, water etc. to settle out or become stratified or layered in the storage facility over time, be it shore tank or barge tank.

So let us consider a hypothetical situation where a VLSFO has been in a shore tank for some time, maintained no lower than 40°C and which contains appreciable (but on-spec) amounts of Aluminium and Silicon, and Water changes in quality from top to bottom, with these and other insoluble elements dropping through the product.

Indeed, it is entirely possible that once the shore tank is switched to bottom suction both these concentrated parameters are found to be hugely off-specification and if as a supplier you are unlucky enough to receive this it can become a very challenging situation.

These quite significant risks increase the need for key point checks during barge loading and as such, even if costs of such must be passed on to the end user, it would be sensible to check VLSFOs for appreciable changes to shore tank quoted quality which would be a warning a fuel has become non-homogenous.

Another example as to how a fuel may become non-homogenous is Total Sediment Potential or TSP, which has historically been a significant challenge for VLSFOs. However, in the last 90 days the number of fuels seen to be off-specification has fallen considerably to around two in 1,000 samples.

Focus on MGO

3.2 % of all MGO supplies tested outside of specification (and beyond 95% confidence limits) for ISO 8217 Table 2 Parameters in the last 180 days, this up from 2.3% in the previous report.

Referring to Figure 16, it can be seen that compliance issues relating to MARPOL (Sulphur) and SOLAS (Flash Point) make up almost two thirds of such occurences. Concentrating on these legislative requirements for both Sulphur and Flash Point, these are driven by completely different factors.

Sulphur issues are again because of very tight blending to the 0.1% limit with these being so borderline it is not uncommon that, when tested, again these exceed the limit.

Flash Point on the other hand is either because of cross-contamination, which tends to be rare, or more endemic issues such as the use of road fuels in the marine sector. These are generally characterised by their improved Cetane (ignition capabilities) and much lower viscosities due to the increased amount of Kerosene in these blends which by default, given Kerosene is more volatile, depresses the Flash Point to a level close (or even below) SOLAS requirements.

SOLAS Regulation II-2/4.2.1 specifies a minimum limit of 60°C for Flash Point in marine fuels with no tolerance, unless specifically provided for emergency generators, where this limit is 43°C minimum.

The risks of SOLAS non-compliance are noted to be magnified in certain parts of the world, one such area being Indonesia where almost 10% of all fuels tested are below 60°C in the last 90 days. It is, however, important to drill down further to localised issues, with data from the port of Aliaga in Turkey being an excellent example, with 14% of all samples (eight from 54) testing below 60°C compared to the rest of the country, where only 0.6% of samples tested below the same value.

It is also noteworthy to remind ourselves at this juncture that SOLAS regulations do not allow tolerances and that a result obtained of 59.5°C would be non-compliant if proven. Therefore, this again lends itself to data-driven buying and extreme scrutiny of historic data on a case-by-case basis, and additional consideration of the general terms and conditions of supply for hidden hurdles such as a reproducibility clause which would, if present, conflict the contractual guarantees with SOLAS requirements.

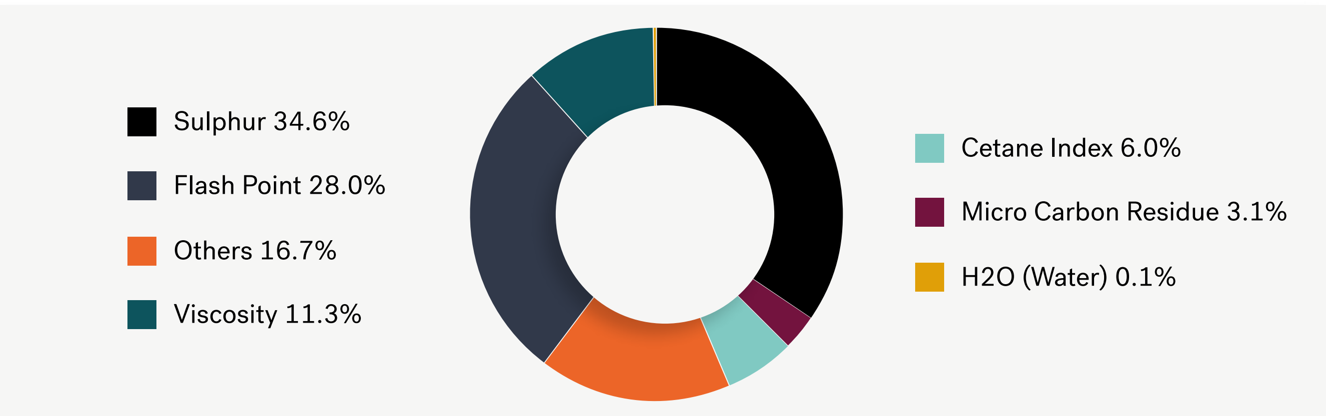


Figure 16: MGO off-specification distribution by parameter

Hidden losses: density short lifting

Whilst prices have softened somewhat in recent months, the practice of density short lifting remains a very important consideration given the potential for financial losses to the end user.

Data available to Integr8 Fuels again identifies several key locations in the world with endemic variances for both VLSFO and MGO. We would also mention that these variances are less common with HSFO due to the density often being blended near the maximum specification.

The picture told in Figure 17 lays bare the need to always consider port data and price in tandem when it comes to the accuracy of bunker delivery notes and even when comparing and adjusting prices from port-to-port or supplier-to-supplier, always considering the quoted prices which may be seen to identify where the practice may be most likely to occur (or not).

For instance, if you used average prices for Singapore and Hong Kong for MGO in the last 180 days, you would observe Hong Kong is within 5 USD/MT of Singapore with prices of 887 and 882 USD respectively. However, when you factor in the significant loss of 2.8% noted in Hong Kong against no variance in Singapore because of mass flow meter, Hong Kong is in real terms 30 USD more expensive. The adage of if "it looks too good to be true, it often isn't", continues to be valid in this case.

Port	VLSFO % Var	Avg $/MT (180 Days)	Adjusted $/MT (Var)	MGO % Var	Avg $/MT (180 Days)	Adjusted $/MT (Var)
Hong Kong	-1.6%	$640	$650 (+10)	-2.8%	$887	$912 (+25)
Sri Lanka	-1.1%	$701	$709 (+8)	-1.0%	$1095	$1106 (+11)
Khorfakkan	-0.7%	$629	$633 (+4)	-0.9%	$1148	$1158 (+10)
Zhoushan	-0.2%	$636	$637 (+1)	-0.5%	$960	$965 (+5)
Singapore* MFM	-	$633	$633 (Nil)	-	$882	$882 (Nil)

Figure 17: Impact of density variances by port

*Singapore variance not applicable due to mass flow meter being used for custody transfer

Part 3: Buying strategies and the quality time bar

Most bunker purchasers and those associated with the industry will be aware of the quality time bar which can be defined as the number of days (from delivery) for the buyer to lodge a claim in writing with the supplier.

What is important to consider is the level of information required to lodge a claim and to “make it stick” rather than it being rejected and the clock continuing to run down until the supplier can simply slam the door shut, leaving the buyer no legal recourse whatsoever. Therefore, we must consider time bars at several levels which we will address.

What is the industry standard for a quality time bar?

The industry standard for most supplier GTCs is 14 days, however we have seen examples as low as three days and as high as 30 days. It is extremely unlikely to see time bars beyond 30 days due to the supplier not being able to protect themselves against the ex-wharf supplier.

When faced with a quality claim, what information do I need to provide?

In short, as much as you have available and enough to meet the evidential requirements of the terms and conditions that govern the contract. This is important as we have numerous examples of suppliers insisting a claim can only be made by showing that a sample **provided to the vessel by the delivering facility and listed on the BDN** is off-specification (and perhaps as inferred earlier beyond reproducibility too).

What is the minimum quality time bar limit I can work with?

The data available to Integr8 shows that this is very dependent on the location of the delivery and the proximity to the laboratory utilised by the owner, including the time to land samples, ship them to the destination, and ultimately test and report them.

As can be seen in Figure 18, this can vary significantly with Singapore unsurprisingly being the promptest to report and outlying ports (and in particular offshore locations) being the slowest, although any area with logistical challenges of landing samples can result in delays, e.g. China.

The challenges of offshore locations can also be clearly identified when considering that only one fifth of all supplies at Galveston Offshore are reported within seven days compared to two thirds of all samples from Houston itself.

Do I need to consider control measures?

This will be very dependent on the delivery itself, the geography, the terms and conditions that govern the supply (agreed sampling location etc.) and the risk profile of the delivery itself, i.e., how likely am I to have a problem or not and the commercial challenges such as voyage planning.

One specific example would be the need to raise a claim based on a sample listed on the BDN. In this case it would be recommended to land and test one of the BDN samples provided to the vessel. This sample of course needs to be verified as accurate, therefore, it is sensible if faced with such a situation to employ an independent surveyor or make it part of the BQS survey.

The quality time bar

Port	7 Days	14 Days	21 Days	30 Days
Singapore	90%	98%		
Fujairah	82%	95%		
Rotterdam	80%	97%		
Gibraltar	68%	93%		
Houston	66%	95%		
Panama (Balboa)	59%	93%		
China (Zhoushan)	37%	80%	93%	
China (Shanghai)	40%	82%	95%	
Mauritius (Port Louis)	50%	85%	95%	
South Africa (Durban)	32%	85%	96%	
Galveston (Offshore Lightering)	20%	78%	93%	
Togo (Lomé)	22%	75%	87%	94%
Zona Comun (Argentina)	6%	61%	88%	95%

Figure 18: Time bar by location against owners' analysis reported

Conclusion: Data-driven buying

Whilst fuel quality remains good, pockets of problems remain and therefore data-driven buying remains the first line of defense to proactively protect buyers against many of the issues we see in the industry.

Real world day-to-day challenges, however, can result in bunker purchasing not potentially receiving the due care and attention that it should, or benchmarks that consider pricing not also considering quality, especially given many of the challenges described in this document are strongly linked to the relative price of the fuel itself, compared to others in the same market.

Thankfully, trends related to Table 1 and Table 2 in ISO 8217 can be identified and buying adjusted accordingly in most cases which should allow us all to sleep a little easier.

Data, however, should not be viewed in isolation but in conjunction with other factors that may affect the bunker delivery, including the terms and conditions of supply.

Understanding the terms and conditions will allow for proactive measures to be put in place which should act as a backstop to protect against the unlikely event of an off-specification situation.

Indeed, prevention is always better than cure, however, if we catch things sooner rather than later, the path of recovery can be much smoother.

For further information about this report or to discover how Integr8 can support your bunker procurement:

Email:
marketing@integr8fuels.com

Visit:
www.integr8fuels.com

Chris Turner
Bunker Quality & Claims Manager
Email: chris.t@integr8fuels.com

Chris joined Integr8 Fuels in 2017, spending several years in Singapore before relocating to Dubai.

With a career spanning over 30 years in the Oil & Shipping industries, Chris has a vast amount of experience including laboratory management, physical supply, bunker broking, trading and, more recently, providing technical supervision of exclusive buying for Owners, Charterers and Operators, including the development and design of online bunker resources.

Chris is also a member of the IBIA technical working group, and a regular speaker, moderator and panel member at many global bunkering conferences worldwide.