



# Soundings

Sulphur Series: Countdown to 2020

## Fuel quality issues

**The first IMO 2020 compliant low sulphur fuels (“LSFO”) are starting to be trialled and appear on the market, but at present it is still really anyone’s guess as to how these new types of fuels will behave. Linked with this uncertainty are a myriad of potential concerns as to fuel quality and handling issues. This article outlines some practical and contractual precaution that can be taken to minimise risk and scope for disputes.**

Low sulphur MARPOL compliant fuels could be residual, distillate or blended products. Blended residual grades are expected to be the predominant compliant products initially available. However, the quality, availability and quantity of these different types of fuel are currently unknown, and immediately after 1 January, 2020 these factors are likely to vary considerably between individual ports. This will pose a particular issue for ships operating in tramp trades.

At least initially, the industry anticipates a spike in bunker quality disputes due to the variable quality, unpredictability and more sensitive nature of the new types of fuels. Owners and charterers are advised to pay careful attention to fuel

testing and management in order to minimise the risk of such claims. Operators should ensure that crews are aware of the characteristics of any fuel loaded and are able to store, handle and use the fuel appropriately.

### Characteristics of low sulphur fuels

The following summarises some of the key parameters which may pose particular difficulties for the new blended fuel oils:

**Stability:** when a fuel becomes unstable, the precipitation of asphaltenes can cause increased sludge formation inside filters and separators which can, in worst case scenarios, lead to loss of propulsion and power. The current stability

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testing methodologies for assessing fuel stability are being reassessed in light of new blended fuel characteristics.

**Compatibility:** two stable but incompatible fuels (even if both compliant) when mixed together may result in the precipitation of asphaltenes and increased sludge formation inside filters and separators, as above. Fuel characteristics and chemical makeup of the new fuels are likely to vary, particularly with location and supplier, so it is anticipated that incompatibility issues may be more of an issue compared with present-day fuels. Compatibility is not covered by the ISO 8217 specification so will not be lab tested unless specifically requested. Labs can only test compatibility if they have samples of both fuels. Although compatibility can be tested on board, portable compatibility test kits might not always give an accurate result and are prone to errors. Ideally, therefore, different fuel stems should be segregated and any mixing of fuel should be kept to a minimum.

**Viscosity:** this plays a major part in ensuring optimum combustion efficiency. If the viscosity is too high, there may be improper atomisation and incomplete combustion and, conversely, if viscosity is too low, there may be inadequate lubrication along with combustion problems. Distillate fuels have lower viscosity than residual fuels so changing over systems for new fuel types can pose challenges, such as increased potential for internal leakages, thermal shock and decreased lubricity in fuel injection pumps causing loss of fuel pressure and increased wear respectively. Ships' crews should check that automatic viscosity controllers are working properly. Industry experts recommend that adequate sea trials are conducted to identify and rectify any operating issues whilst using LSFO before the date of changeover.

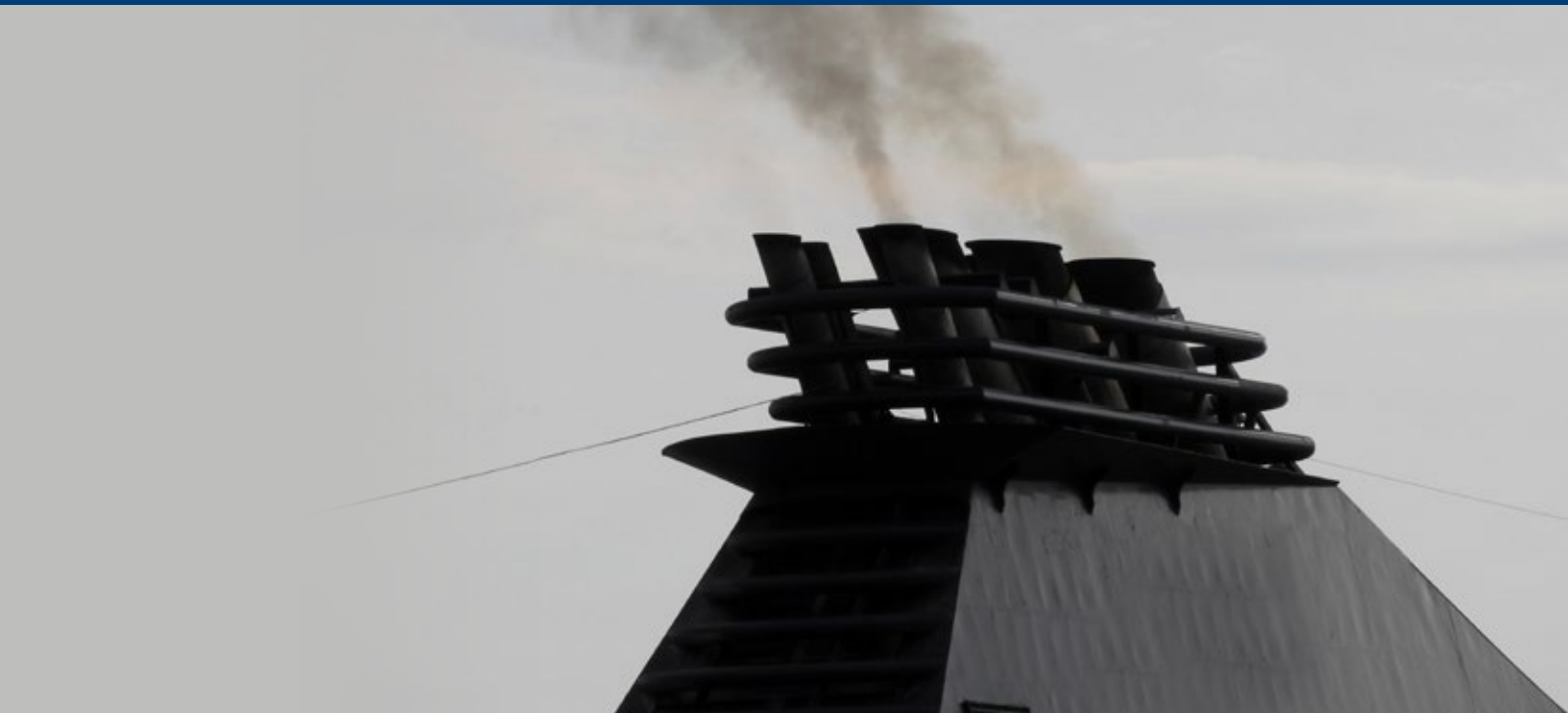
**Flashpoint:** fuels with a flashpoint lower than 60°C do not comply with the requirements of SOLAS and pose

an increased risk of fire and explosion. Such fuel should not be used and the ship's flag State should be informed as soon as possible in order to obtain guidance for risk mitigation. There has been speculation that some low sulphur fuels may exhibit flashpoints below 60°C because of changes in the way fuels will be manufactured to meet demand. Since the existing regulatory minimum flashpoint requirement of 60°C will remain in place, owners should be extra vigilant to ensure compliance.

**Cold flow properties:** whilst distillate fuels have, in the past, generally not required heating, the increased use of distillate fuels that are blended with components with higher cloud points may mean that heating becomes necessary. Operators should be aware of any limitations that the ship may have in relation to cold flow management, such as limited fuel heating capability and take into consideration the cold flow properties of the fuel being stemmed and the likely ambient temperatures to be encountered during the proposed voyage. Blended residual fuels may also exhibit high pour points and need to be heated in storage to more than 10°C above the pour point.

**Cat fines:** excessive presence of catalyst particles of aluminium silicate, or Al + Si, (also known as cat fines) in fuel oil can lead to accelerated abrasive wear of engine fuel pumps, injectors and cylinder liners. The risk of cat fines is typically higher in blended and refined fuels and it is therefore anticipated that high levels of Al + Si content, in excess of the existing ISO requirement, will be seen more regularly with low sulphur fuels. Pre-treatment of fuels is essential to minimise such risk.

These are just a few of the areas where problems are expected to be seen more frequently with the new low sulphur fuels. Further information and guidance can be



found in the “Joint Industry Guidelines for the Supply and Use of 0.5% Sulphur Marine Fuel” which has been prepared by various key industry bodies, including BIMCO and the International Group of P&I Clubs, and the International Chamber of Shipping’s guidance document: “Compliance with the 2020 ‘Global Sulphur Cap’”.

### Contractual considerations

In light of the increased risk of quality disputes, owners and charterers alike are advised to review their charterparties and bunker supply contracts to ensure there is adequate contractual protection and a clear mechanism for resolving such disputes.

### Charterparties

As a starting point, detailed bunker specifications should be stipulated in the contract requiring charterers to supply the highest standard of fuel. Although the most recent version of the ISO fuel standard, ISO 8217:2017, is applicable to LSFO, a more bespoke version will be developed as the characteristics of the new blends of fuel become clearer, so charterparties should always refer to “any subsequent amendments”. In the meantime, ISO has now released a Publicly Available Standard (PAS) – ISO PAS 23263 which provides additional guidance specific to LSFO. However, this will not have any force of law or contractual effect unless it is incorporated into the charterparty.

Standard bunker quality clauses, such as the BIMCO Bunker Quality Control Clause for Time Chartering or the INTERTANKO Bunker Compliance Clause should be incorporated where possible. These provide a clear mechanism for resolving bunker quality disputes. They set out the way in which bunkers should be sampled and provide for tests to be carried out which will produce a binding result. This can avoid the potential for lengthy and costly debate

as to bunker quality. In the absence of such clauses it will be a question of evidence and it may be necessary for all samples to be tested and additional expert advice obtained.

### Bunker supply contracts

For the time charterer who is responsible for stemming bunkers, the challenge is to achieve similar terms in their supply contract to those contained in the charterparty, so that their liability is back-to-back. However, many bunker suppliers have their own standard terms and conditions which they are unwilling to negotiate. So charters often find themselves “stuck” with different positions up and down the chain.

For example, the supply contract may require bunkers to be sampled at the bunkering barge manifold, whilst charterparties commonly require sampling at the ship’s manifold, in line with MARPOL requirements. This may produce two sets of different results and in extreme cases the supply sample may be on spec whilst the charterparty sample is not and charterers may then find that they are unable to pass the owner’s claim on to the supplier and liability rests with them.

Another area of difficulty is time bars. Supply contracts often have very short time bars which expire before test results are received or a claim arises. Wherever possible charterers should seek to negotiate longer periods with their suppliers or mirror the supply contract time bar in the charterparty, but in reality this is likely to be difficult to achieve.

Suppliers will also seek to limit their liability, for example by excluding consequential losses or capping their liability to the level of the invoice. This can leave charterers with a shortfall if they are unable to pass the full extent of the owner’s claim on to the supplier. Such clauses should therefore be resisted, if possible, though in reality this will depend on the strength

If engine damage occurs, the ship should stop using the fuel immediately. Any damaged parts should be retained, photographs should be taken and careful records and witness statements kept for evidential purposes.



of the charterer's bargaining power with their supplier. The BIMCO Bunker Terms 2018 seek to strike a fair balance between the interests of the supplier and the purchaser whilst at the same time aligning supply terms more closely with standard charterparty terms. The uptake of this standard form has been slow, but Members are encouraged to support its use where possible.

#### Practical precautions

Fuel purchasers should obtain as much detail on the quality of the fuel that is to be supplied as possible. This should at minimum include density, viscosity, pour point, sulphur specifications, together with confirmation that the fuel will at least comply with the required grade of ISO 8217.

When stemming bunkers, owners and charterers alike should ensure that samples are taken according to best practice recommendations and strictly in line with any applicable contractual provisions. Otherwise it may not be possible to rely on them. As a general rule, a drip sample taken from the ship's manifold will produce the most representative result and samples should always be witnessed, sealed, labelled and signed.

When handling fuel, owners should be particularly vigilant in relation to the fuel characteristics summarised above and take any recommended technical precautions to ensure that all fuel is treated and handled such as to minimise risk of engine damage. If in doubt, expert advice should be sought.

Owners should also be careful to ensure that engines are properly maintained to a high standard so as to be able to address any defence by charterers that any engine damage that may occur is not due to the bunkers but to owners' failure to maintain the engine in good working order. It is important that owners keep careful records and logs of engine maintenance and fuel handling for evidential purposes.

If bunkers are suspected to be off-specification, ideally they should be discharged as soon as they are identified, but in reality that is not always possible as test results are often

not received until the ship has had to sail. Again, in an ideal world, the ship should have sufficient compliant bunkers on-board to avoid having to burn any unverified bunkers before arriving at the next bunkering port, but again, that is not always a practical possibility.

If suspect bunkers do have to be burned then owners should seek expert advice and guidance as to how best to handle them so as to minimise damage. In such cases, owners may risk waiving their right to claim against charterers for breach of charter if they make unilateral decision to burn off-specification bunkers when other options might have been available.

If engine damage occurs, the ship should stop using the fuel immediately. Any damaged parts should be retained, photographs should be taken and careful records and witness statements kept for evidential purposes.

Taking the above precautions and acting quickly when a problem occurs can have a significant impact on whether a potential bunker dispute is resolved quickly or spirals into expensive litigation.

#### Conclusions

Although existing distillate fuels with 0.1% sulphur content are likely to be more reliable than the 0.5% blends, they are also likely to be more expensive, though the price differential is as yet unknown. Operators may have to balance the cost saving and convenience of using 0.5% blends with the potential quality implications compared to distillate fuels. This will be a commercial decision, but it is likely that 0.5% blends will be the more popular choice and this is likely to result in a higher risk of quality issues, as identified in this article.

Members are therefore advised to pay careful attention to the practical and contractual precautions set out above and contact the Association for guidance at the outset of any dispute.

**Please contact the Managers for further advice in relation to any of the issues discussed above.**

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