

Service update: Off-specification fuel quality report

Applicability: Lloyd's Register FOBAS clients

Information: Between 15th and 31st March 2019 FOBAS identified 105 instances where a result was outside the 95% confidence limit of either ISO 8217 6th edition test parameter or a value given by the BDN or sample label

| Port | Characteristic | ISO 8217 Limit or Advised Value | Final result | Unit |
|-----------|---------------------|---------------------------------|--------------|----------|
| Amsterdam | Viscosity at 50°C | 377.0** | 415.4 | cSt |
| Amsterdam | Viscosity at 50°C | 377.0** | 702.8 | cSt |
| Amsterdam | Water | 0.50* | 2.00 | % Volume |
| Antwerp | Aluminium + Silicon | 60* | 97 | mg/kg |
| Antwerp | Viscosity at 40°C | 5.00** | 6.1 | cSt |
| Antwerp | Viscosity at 40°C | 5.00** | 6.1 | cSt |
| Antwerp | Viscosity at 40°C | 5.00** | 6.1 | cSt |
| Antwerp | Viscosity at 40°C | 5.00** | 6.1 | cSt |
| Antwerp | Viscosity at 40°C | 4.00** | 6.1 | cSt |
| Antwerp | Viscosity at 50°C | 694.4** | 746.4 | cSt |
| Antwerp | Viscosity at 50°C | 356.0** | 491.5 | cSt |
| Antwerp | Viscosity at 50°C | 375.6** | 397.9 | cSt |
| Antwerp | Viscosity at 50°C | 693.6** | 736.8 | cSt |
| Antwerp | Water | 0.50* | 10.00 | % Volume |
| Balboa | Aluminium + Silicon | 60* | 74 | mg/kg |
| Balboa | Density at 15°C | 0.9883** | 0.9987 | kg/l |
| Baltimore | Density at 15°C | 0.9910** | 0.9933 | kg/l |
| Baoshan | Water | 0.50* | 0.75 | % Volume |
| Barcelona | Viscosity at 50°C | 379.5** | 414.5 | cSt |
| Ceuta | Ash | 0.010* | 0.023 | % Mass |
| Ceuta | Sulphur | 0.10** | 0.48 | % Mass |
| Ceuta | Viscosity at 50°C | 180.0** | 198.1 | cSt |

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|---------------|---------------------|----------|--------|----------|
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| Europoort | Aluminium + Silicon | 60* | 81 | mg/kg |
| Europoort | Viscosity at 50°C | 398.5** | 736.9 | cSt |
| | | | | |
| Flushing | Viscosity at 40°C | 6.00** | 6.3 | cSt |
| | | | | |
| Fujairah | Acid Number | 2.50* | 2.81 | mgKOH/g |
| Fujairah | MCR 10% bottom | 0.30* | 0.61 | % Mass |
| Fujairah | Sulphur | 3.48** | 3.80 | % Mass |
| Fujairah | Sulphur | 3.48** | 3.72 | % Mass |
| Fujairah | Sulphur | 3.48** | 3.75 | % Mass |
| Fujairah | Sulphur | 3.48** | 3.76 | % Mass |
| Fujairah | Sulphur | 3.48** | 3.78 | % Mass |
| Fujairah | Sulphur | 3.48** | 3.79 | % Mass |
| Fujairah | Sulphur | 3.48** | 3.81 | % Mass |
| Fujairah | Sulphur | 3.48** | 3.82 | % Mass |
| | | | | |
| Ghent (Gent) | Ash | 0.070* | 0.073 | % Mass |
| Ghent (Gent) | Vanadium | 150* | 200 | mg/kg |
| Ghent (Gent) | Viscosity at 40°C | 6.00** | 6.2 | cSt |
| | | | | |
| Gibraltar | MCR 10% bottom | 0.30* | 0.62 | % Mass |
| | | | | |
| Gothenburg | Viscosity at 50°C | 376.0** | 399.1 | cSt |
| | | | | |
| Haifa | Viscosity at 50°C | 180.0** | 188.4 | cSt |
| | | | | |
| Hampton Roads | MCR 10% bottom | 0.30* | 0.77 | % Mass |
| | | | | |
| Hong Kong | Carbon residue | 18.00* | 19.42 | % Mass |
| | | | | |
| Houston | Aluminium + Silicon | 60* | 74 | mg/kg |
| Houston | Density at 15°C | 0.9903** | 0.9925 | kg/l |
| | | | | |
| Kali Limenes | Water | 0.50* | 0.65 | % Volume |
| | | | | |
| Kaohsiung | Sulphur | 0.10** | 0.12 | % Mass |
| | | | | |
| Kavkaz | Viscosity at 50°C | 362.2** | 403.8 | cSt |
| | | | | |
| Kvinesdal | Pour point | 0* | 6 | oC |
| | | | | |
| LOOP Terminal | Sulphur | 0.10** | 0.13 | % Mass |
| | | | | |
| Luanda | Pour point | 30* | 36 | oC |
| | | | | |
| Manzanillo | Aluminium + Silicon | 60* | 95 | mg/kg |
| Manzanillo | Ash | 0.100* | 0.151 | % Mass |
| Manzanillo | Water | 0.50* | 2.00 | % Volume |

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|--------------|--------------------------|----------|--------|----------|
| Marcus hook | Density at 15°C | 0.9910** | 0.9931 | kg/l |
| Mersin | Total Sediment Potential | 0.10* | 0.17 | % Mass |
| Murmansk | Viscosity at 50°C | 373.0** | 409.5 | cSt |
| Nordenham | Water | 0.50* | 1.10 | % Volume |
| Not Stated | Total Sediment Potential | 0.10* | 0.16 | % Mass |
| Novorossiysk | Viscosity at 50°C | 328.3** | 410.6 | cSt |
| Paranagua | Sodium | 100* | 117 | mg/kg |
| Paranagua | Water | 0.50* | 5.00 | % Volume |
| Philadelphia | Density at 15°C | 0.9910** | 0.9932 | kg/l |
| Philadelphia | Density at 15°C | 0.9910** | 0.9931 | kg/l |
| Philadelphia | Density at 15°C | 0.9910** | 0.9931 | kg/l |
| Point Lisas | Water | 0.50* | 0.75 | % Volume |
| Port Angeles | Viscosity at 50°C | 328.0** | 711.7 | cSt |
| Port Bronka | Water | 0.50* | 0.70 | % Volume |
| Rotterdam | Acid Number | 2.50* | 2.80 | mgKOH/g |
| Rotterdam | Viscosity at 50°C | 377.0** | 402.2 | cSt |
| Rotterdam | Viscosity at 50°C | 376.6** | 396.8 | cSt |
| Rotterdam | Viscosity at 50°C | 693.6** | 743.6 | cSt |
| Rotterdam | Viscosity at 50°C | 377.0** | 399.3 | cSt |
| Shanghai | Water | 0.50* | 0.75 | % Volume |
| Shanghai | Water | 0.50* | 1.40 | % Volume |
| Singapore | CCAI | 870* | 874 | Index |
| Singapore | Density at 15°C | 0.9825** | 0.9960 | kg/l |
| Singapore | Pour point | 0* | 6 | oC |
| Singapore | Pour point | 0* | 6 | oC |
| Singapore | Pour point | 0* | 6 | oC |
| Singapore | Pour point | 0* | 6 | oC |
| Singapore | Pour point | 0* | 9 | oC |
| Singapore | Pour point | 0* | 6 | oC |
| Singapore | Pour point | 0* | 6 | oC |
| Singapore | Pour point | 0* | 6 | oC |
| Singapore | Pour point | 0* | 9 | oC |
| Singapore | Pour point | 0* | 6 | oC |
| Singapore | Sulphur | 0.09** | 0.14 | % Mass |

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|-----------------|--------------------------|---------|-------|----------|
| Stapleton | Viscosity at 50°C | 367.0** | 419.5 | cSt |
| St Petersburg | CCAI | 860* | 901 | Index |
| St Petersburg | Viscosity at 40°C | 5.20** | 6.0 | cSt |
| St Petersburg | Viscosity at 50°C | 230.0** | 742.6 | cSt |
| Tallinn | Sulphur | 0.09** | 0.15 | % Mass |
| Tanjung Pelepas | Sodium | 100* | 119 | mg/kg |
| Tanjung Pelepas | Sulphur | 0.09** | 0.24 | % Mass |
| Tanjung Pelepas | Water | 0.50* | 1.10 | % Volume |
| Trincomalee | Total Sediment Potential | 0.10* | 0.2 | % Mass |
| Ust Luga | Sulphur | 0.09** | 0.14 | % Mass |
| Vlissingen | Viscosity at 40°C | 3.50** | 6.1 | cSt |
| Vlissingen | Water | 0.50* | 0.65 | % Volume |
| Vostochnyy | Viscosity at 40°C | 3.88** | 8.5 | cSt |
| Zeebrugge | Sulphur | 0.07** | 0.12 | % Mass |
| Zhanjiang | Flash point | 60.0*** | 56.50 | °C |

*ISO 8217 6th edition limit

**Advised value from BDN or sample label.

***Due to the statutory significance of Flash Point the 95% confidence limit is not applied.

This report contains selected parameters taken from the FOBAS routine analysis data of ship drawn as bunkered samples. These reports will provide progressive snap shot of information every two weeks on the problematic quality characteristics of marine fuels as tested but should not be viewed in isolation. The results given, of course, do not necessarily reflect the overall quality of fuels delivered at a particular port. Note 95% confidence limit as per ISO 4259 Petroleum products: Determination and application of precision data in relation to methods of test

Note: This report has been prepared against ISO 8217 6th edition, as published March 2017. See CIMAC FAQ doc on ISO 8217 for more details (available in our technical library at www.fobas.com).

However, we fully recognise that many of the fuel deliveries covered by this report will have been specified and delivered against earlier versions of ISO 8217 or other specifications and hence will include instances where the fuel 'as bunkered' was fully within the purchaser's required specification. As has always been the case for FOBAS, it is recognised that there is an important distinction between a fuel not meeting, or meeting, a specification requirement and its suitability for use in particular cases.

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