

Table 1 — Distillate marine fuels

| Characteristics | | Unit | Limit | Category ISO-F- | | | | Test method reference |
|---|--------------------|------|-------------------------------|-----------------|-------|-------------------|----------------------------------|-----------------------|
| | | | | DMX | DMA | DMZ | DMB | |
| Kinematic viscosity at 40 °C ^a | mm ² /s | max. | 5,500 | 6,000 | 6,000 | 11,00 | ISO 3104 | |
| | | min. | 1,400 | 2,000 | 3,000 | 2,000 | | |
| Density at 15 °C | kg/m ³ | max. | — | 890,0 | 890,0 | 900,0 | see 7.1 ISO 3675 or ISO 12185 | |
| Cetane index | — | min. | 45 | 40 | 40 | 35 | ISO 4264 | |
| Sulfur ^b | mass % | max. | 1,00 | 1,50 | 1,50 | 2,00 | see 7.2 ISO 8754 ISO 14596 | |
| Flash point | °C | min. | 43,0 | 60,0 | 60,0 | 60,0 | see 7.3 ISO 2719 | |
| Hydrogen sulfide ^c | mg/kg | max. | 2,00 | 2,00 | 2,00 | 2,00 | IP 570 | |
| Acid number | mg KOH/g | max. | 0,5 | 0,5 | 0,5 | 0,5 | ASTM D664 | |
| Total sediment by hot filtration | mass % | max. | — | — | — | 0,10 ^e | see 7.4 ISO 10307-1 | |
| Oxidation stability | g/m ³ | max. | 25 | 25 | 25 | 25 ^f | ISO 12205 | |
| Carbon residue: micro method on the 10 % volume distillation residue | mass % | max. | 0,30 | 0,30 | 0,30 | — | ISO 10370 | |
| Carbon residue: micro method | mass % | max. | — | — | — | 0,30 | ISO 10370 | |
| Cloud point | °C | max. | -16 | — | — | — | ISO 3015 | |
| Pour point (upper) ^d | winter quality | °C | max. | -6 | -6 | -6 | 0 | ISO 3016 |
| | summer quality | °C | max. | 0 | 0 | 0 | 6 | ISO 3016 |
| Appearance | — | — | Clear and bright ^l | | | | e, f, g | see 7.6 |
| Water | volume % | max. | — | — | — | 0,30 ^e | ISO 3733 | |
| Ash | mass % | max. | 0,010 | 0,010 | 0,010 | 0,010 | ISO 6245 | |
| Lubricity, corrected wear scar diameter (wsd 1,4) at 60 °C ^h | µm | max. | 520 | 520 | 520 | 520 ^g | ISO 12156-1 | |

Table 1 (continued)

| Characteristics | Unit | Limit | Category ISO-F- | | | | Test method reference |
|-----------------|--|-------|-----------------|-----|-----|-----|-----------------------|
| | | | DMX | DMA | DMZ | DMB | |
| a | 1 mm ² /s = 1 cSt. | | | | | | |
| b | Notwithstanding the limits given, the purchaser shall define the maximum sulfur content in accordance with relevant statutory limitations. See Annex C. | | | | | | |
| c | Due to reasons stated in Annex D, the implementation date for compliance with the limit shall be 1 July 2012. Until such time, the specified value is given for guidance. For distillate fuels the precision data are currently being developed. | | | | | | |
| d | Purchasers should ensure that this pour point is suitable for the equipment on board, especially if the ship operates in cold climates. | | | | | | |
| e | If the sample is not clear and bright, the total sediment by hot filtration and water tests shall be required, see 7.4 and 7.6. | | | | | | |
| f | If the sample is not clear and bright, the test cannot be undertaken and hence the oxidation stability limit shall not apply. | | | | | | |
| g | If the sample is not clear and bright, the test cannot be undertaken and hence the lubricity limit shall not apply. | | | | | | |
| h | This requirement is applicable to fuels with a sulfur content below 500 mg/kg (0,050 mass %). | | | | | | |
| i | If the sample is dyed and not transparent, then the water limit and test method as given in 7.6 shall apply. | | | | | | |