



TREFOIL
TRADING BV

ISO 8217 2012
FUEL STANDARD

MARINE DISTILLATE FUELS

| Parameter | Unit | Limit | DMX | DMA | DMB | DMC |
|------------------------------------|--------------------|-------|----------------|-------|-------|-------|
| Density (at 15 °C) | kg/m ³ | Max | - | 890.0 | 900.0 | 920.0 |
| Viscosity (at 40 °C) | mm ² /s | Max | 5.5 | 6.0 | 11.0 | 14.0 |
| Viscosity (at 40 °C) | mm ² /s | Min | 1.4 | 1.5 | - | - |
| Micro Carbon Residue at 10%Residue | % m/m | Max | 0.30 | 0.30 | - | - |
| Micro Carbon Residue | % m/m | Max | - | - | 0.30 | 2.50 |
| Water | % V/V | Max | - | - | 0.30 | - |
| Sulfur * | % (m/m) | Max | 1.0 | 1.5 | 2.0 | 2.0 |
| Total Sediment Existent | % m/m | Max | - | - | 0.10 | 0.10 |
| Ash | % m/m | Max | 0.01 | 0.01 | 0.01 | 0.01 |
| Vanadium | mg/kg | Max | - | - | - | 100 |
| Aluminium + Silicon | mg/kg | Max | - | - | - | 25 |
| Flash point | °C | Min | 43 | 60 | 60 | 60 |
| Pour point, Summer | °C | Max | - | 0 | 6 | 6 |
| Pour point, Winter | °C | Max | - | -6 | 0 | 0 |
| Cloud point | °C | Max | -16 | - | - | - |
| Calculated Cetane Index | | Min | 45 | 40 | 35 | - |
| Appearance | | | Clear & Bright | | | |
| Zinc ** | Mg/kg | Max | - | - | - | 15 |
| Phosphorus ** | mg/kg | Max | - | - | - | 15 |
| Calcium** | Mg/kg | Max | - | - | - | 30 |

*A sulfur limit of 1.5% m/m will apply in SO_x Emission Control Areas designated by the International Maritime Organization, when its relevant Protocol comes into force. There may be local variations.

**The Fuel shall be free of ULO.
A Fuel is considered to be free of ULO if one or more of the elements are below the limits. All three elements shall exceed the limits before deemed to contain ULO.