ANEX 1

Technical specifications of the product,

HFO in compliance to ISO 8217 2017 (ISO RME)

Allowed sulfur content: **max. 0.5%**

Sample testing: **according to the standard in reference**

ISO 8217 2017
FUEL STANDARD

ISO 8217 2017 Fuel Standard
for marine residual fuels

REQUIREMENTS FOR MARINE RESIDUAL FUELS

Characteristic		Unit	Limit	RMA	RMB	RMD	RME	Category ISO-F- RMG				RMK			Test method reference
				10	30	80	180	180	380	500	700	380	500	700	
Kinematic viscosity at 50 °C		mm^2/s [a]	Max	10,00	30,00	80,00	180,0	180,0	380,0	500,0	700,0	380,0	500,0	700,0	ISO 3104
Density at 15 °C		kg/m^3	Max	920,0	960,0	975,0	991,0	991,0				1010,0			ISO 3675 or ISO 12185; see 6.1
CCAI		–	Max	850	860	860	860	870				870			see 6.2
Sulfur [b]		mass %	Max					Statutory requirements							ISO 8754 or ISO 14596 or ASTM D4294; see 6.3
Flash point		°C	Min	60,0	60,0	60,0	60,0	60,0				60,0			ISO 2719; see 6.4
Hydrogen sulfide		mg/kg	Max	2,00	2,00	2,00	2,00	2,00				2,00			IP 570; see 6.5
Acid number [c]		mg KOH/g	Max	2,5	2,5	2,5	2,5	2,5				2,5			ASTM D664; see 6.6
Total sediment – Aged		mass %	Max	0,10	0,10	0,10	0,10	0,10				0,10			ISO 10307-2; see 6.9
Carbon residue – Micro method		mass %	Max	2,50	10,00	14,00	15,00	18,00				20,00			ISO 10370
Pour point (upper) [d]	winter	°C	Max	0	0	30	30	30				30			ISO 3016
	summer	°C	Max	6	6	30	30	30				30			
Water		volume %	Max	0,30	0,50	0,50	0,50	0,50				0,50			ISO 3733
Ash		mass %	Max	0,040	0,070	0,070	0,070	0,100				0,150			ISO 6245
Vanadium		mg/kg	Max	50	150	150	150	350				450			IP 501, IP 470 or ISO 14597; see 6.14
Sodium		mg/kg	Max	50	100	100	50	100				100			IP 501, IP 470; see 6.15
Aluminium plus silicon		mg/kg	Max	25	40	40	50	60				60			IP 501, IP 470 or ISO 10478; see 6.16
Used lubricating oil (ULO): – Calcium and zinc; or – Calcium and phosphorus		mg/kg	–					Calcium > 30 and zinc > 15 or Calcium > 30 and phosphorus > 15							IP 501 or IP 470, IP 500; see 6.17

a 1 mm^2/s = 1 cSt.
b The purchaser shall define the maximum sulfur content in accordance with relevant statutory limitations. See Introduction.
c See Annex E.
d Purchasers should confirm that this pour point is suitable for the ship's intended area of operation.