



ISO 8217 2005 FUEL STANDARD OR MARINE DISTILLATE FUELS

MARINE DISTILLATE FUELS

Limit	Parameter	DMX	DMA	DMZ	DMB
Max.	Viscosity at 40 °C (mm ² /s)	5.5	6.0	11.0	14.0
Min.	Viscosity at 40 °C (mm ² /s)	1.4	1.5	-	-
Max.	Micro Carbon Residue at 10% Residue (% m/m)	0.30	0.30	-	-
Max.	Density at 15 °C (kg/m ³)	-	890.0	900.0	920.0
Max.	Micro Carbon Residue (% m/m)	-	-	0.30	2.50
Max.	Sulfur (% m/m)	1.0	1.5	2.0	2.0
Max.	Water (% V/V)	-	-	0.3	0.3
Max.	Total Sediment Existent (% m/m)	-	-	0.10	0.10
Max.	Ash (% m/m)	0.01	0.01	0.01	0.05
Min.	Flash point (°C)	43	60	60	60
Max.	Pour point in Summer (°C)	-	0	6	6
Max.	Pour point in Winter (°C)	-	-6	0	0
Max.	Cloud point (°C)	-16	-	-	-
Min.	Calculated Cetane Index	45	40	35	-
Max.	Vanadium (mg/kg)	-	-	-	100
Max.	Aluminium + Silicon (mg/kg)	-	-	-	25
Max.	Zinc (mg/kg)	-	-	-	15
Max.	Phosphorus (mg/kg)	-	-	-	15
Max.	Calcium (mg/kg)	-	-	-	30
	Appearance	Clear & Bright		-	-

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Plus Petroleum is an emerging independent offshore bunkering & trading service provider with business operations in the downstream and upstream service sectors with a core focus on sub Saharan Africa. At Plus Petroleum we source, blend, trade, transport and market petroleum products through a network of finance, operations and risk management tools.

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ISO 8217 2005 FUEL STANDARD FOR MARINE RESIDUAL FUELS

MARINE RESIDUAL FUELS

Limit	Parameter	RMA 30	RMB 30	RMD 80	RME 180	RMF 180	RMG 380	RMH 380	RMK 380	RMH 380	RMK 700	
Max.	Viscosity at 50°C (mm ² /s)	30.0		80.0	180.0		380.0		700			
Max.	Density at 15°C (kg/m ³)	960.0	975.0	980.0	991.0		991.1		1010.0	991.0	1010.0	
Max.	Micro Carbon Residue (% m/m)	10		14	15	20	18	22		22		
Max.	Aluminium + Silicon (mg/kg)	80		80	80		80		80			
Max.	Ash (% m/m)	0.10		0.10	0.10	0.15	0.15	0.15		0.15		
Max.	Vanadium (mg/kg)	150		350	200	500	300	600		600		
Max.	Water (% V/V)	0.50		0.5	0.5		0.5		0.5			
Max.	Pour point in Summer (°C)	6	24	30	30		30		30			
Max.	Pour point in Winter (°C)	0	24	30	30		30		30			
Min.	Flash point (°C)	60		60	60		60		60			
Max.	Sulphur (% m/m)	3.5		4.00	4.50		4.50		4.50			
Max.	Total Sediment, Potential (% m/m)	0.10		0.10	0.10		0.10		0.10			
Max.	Zinc (mg/kg)						15					
Max.	Phosphorus (mg/kg)						15					
Max.	Calcium (mg/kg)						30					

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ISO 8217 2010 FUEL STANDARD FOR MARINE DISTILLATE FUELS

MARINE DISTILLATE FUELS

Limit	Parameter	DMX	DMA	DMZ	DMB
Max.	Viscosity at 40°C (mm ² /s)	5.500	6.000	6.000	11.00
Min.	Viscosity at 40°C (mm ² /s)	1.400	2.000	3.000	2.000
Max.	Micro Carbon Residue at 10% Residue (% m/m)	0.30	0.30	0.30	-
Max.	Density at 15°C (kg/m ³)	-	890.0	890.0	900.0
Max.	Micro Carbon Residue (% m/m)	-	-	-	0.30
Max.	Sulphur (% m/m)	1.00	1.50	1.50	2.00
Max.	Water (% V/V)	-	-	-	0.30
Max.	Total sediment by hot filtration (% m/m)	-	-	-	0.10
Max.	Ash (% m/m)	0.010	0.010	0.010	0.010
Min.	Flash point (0°C)	43.0	60.0	60.0	60.0
Max.	Pour point in Summer (0°C)	-	0	0	6
Max.	Pour point in Winter (°C)	-	-6	-6	0
Max.	Cloud point (°C)	-16	-	-	-
Min.	Calculated Cetane Index	45	40	40	35
Max.	Acid Number (mgKOH/g)	0.5	0.5	0.5	0.5
Max.	Oxidation stability (g/m ³)	25	25	25	25
Max.	Lubricity, corrected wear scar diameter (wsd 1.4 at 60°C) (um)	520	520	520	520
Max.	Hydrogen sulphide (mg/kg)	2.00	2.00	2.00	2.00
	Appearance	Clear & Bright			-

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ISO 8217 2010 FUEL STANDARD FOR MARINE RESIDUAL FUELS

MARINE RESIDUAL FUELS

Limit	Parameter	RMA	RMB	RMD	RME	RMG				RMK				
		10	30	80	180	180	380	500	700	380	500	700		
Max.	Viscosity at 50°C (mm ² /s)	10.00	30.00	80.00	180.0	180.0	380.0	500.0	700.0	380.0	500.0	700.0		
Max.	Density at 15°C (kg/m ³)	920.0	960.0	975.0	991.0	991.0				1010.0				
Max.	Micro Carbon Residue (% m/m)	2.50	10.00	14.00	15.00	18.00				20.00				
Max.	Aluminium + Silicon (mg/kg)	25	40		50	60								
Max.	Sodium (mg/kg)	50	100		50	100								
Max.	Ash (% m/m)	0.040	0.070			0.100				0.150				
Max.	Vanadium (mg/kg)	50	150			350				450				
Max.	CCAI	850	860			870								
Max.	Water (% V/V)	0.30					0.50							
Max.	Pour point (upper) in Summer (°C)	6						30						
Max.	Pour point (upper) in Winter (°C)	0						30						
Min.	Flash point (°C)					60.0								
Max.	Sulphur (% m/m)	Statutory requirements												
Max.	Total Sediment, aged (% m/m)					0.10								
Max.	Acid Number (mgKOH/g)					2.5								
	Used lubricating oils (ULO): Calcium and Zinc; or Calcium and Phosphorus (mg/kg)	The fuel shall be free from ULO, and shall be considered to contain ULO when either one of the following conditions is met: Calcium > 30 and zinc > 15; or Calcium > 30 and phosphorus > 15.												
Max.	Hydrogen sulphide (mg/kg)					2.00								

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ISO 8217 2017 FUEL STANDARD FOR MARINE DISTILLATE FUELS

MARINE DISTILLATE FUELS

Limit	Parameter	DMX	DMA	DFA	DMZ	DFZ	DMB	DFB	
Max.	Viscosity at 40°C (mm ² /s)	5.500	6.000		6.000		11.00		
Min.	Viscosity at 40°C (mm ² /s)	1.400	2.000		3.000		2.000		
Max.	Micro Carbon Residue at 10% Residue (% m/m)	0.30	0.30		0.30		-		
Max.	Density at 15°C (kg/m ³)	-	890.0		890.0		900.0		
Max.	Micro Carbon Residue (% m/m)	-	-		-		0.30		
Max.	Sulphur (% m/m)	1.00	1.00		1.00		1.50		
Max.	Water (% V/V)	-	-		-		0.30		
Max.	Total sediment by hot filtration (% m/m)	-	-		-		0.10		
Max.	Ash (% m/m)	0.010	0.010		0.010		0.010		
Min.	Flash point (°C)	43.0	60.0		60.0		60.0		
Max.	Pour point in Winter (°C)	-	-6		-6		0		
Max.	Pour point in Summer (°C)	-	0		0		6		
Max.	Cloud point in Winter (°C)	-16	Report		Report		-		
Max.	Cloud point in Summer (°C)	-16	-		-		-		
Max.	Cold filter plugging point in Winter (°C)	-	Report		Report		-		
Max.	Cold filter plugging point in Summer (°C)	-	-		-		-		
Min.	Calculated Cetane Index	45	40		40		35		
Max.	Acid Number (mgKOH/g)	0.5	0.5		0.5		0.5		
Max.	Oxidation stability (g/m ³)	25	25		25		25		
Max.	Fatty acid methyl ester (FAME)	-	-	7.0	-	7.0	-	7.0	
Max.	Lubricity, corrected wear scar diameter (wsd 1.4 at 60°C) (um)	520	520		520		520		
Max.	Hydrogen sulphide (mg/kg)	2.00	2.00		2.00		2.00		
	Appearance	Clear & Bright						-	

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MARINE RESIDUAL FUELS

Limit	Parameter	RMA	RMB	RMD	RME	RMG				RMK				
		10	30	80	180	180	380	500	700	380	500	700		
Max.	Viscosity at 50°C (mm ² /s)	10.00	30.00	80.00	180.0	180.0	380.0	500.0	700.0	380.0	500.0	700.0		
Max.	Density at 15°C (kg/m ³)	920.0	960.0	975.0	991.0	991.0				1010.0				
Max.	Micro Carbon Residue (% m/m)	2.50	10.00	14.00	15.00	18.00				20.00				
Max.	Aluminium + Silicon (mg/kg)	25	40		50	60								
Max.	Sodium (mg/kg)	50	100		50	100								
Max.	Ash (% m/m)	0.040	0.070			0.100				0.150				
Max.	Vanadium (mg/kg)	50	150			350				450				
Max.	CCAI	850	860			870								
Max.	Water (% V/V)	0.30					0.50							
Max.	Pour point (upper) in Summer (°C)	6						30						
Max.	Pour point (upper) in Winter (°C)	0						30						
Min.	Flash point (°C)					60.0								
Max.	Sulphur (% m/m)	To comply with statutory requirements as defined by purchaser												
Max.	Total Sediment, aged (% m/m)					0.10								
Max.	Acid Number (mgKOH/g)					2.5								
	Used lubricating oils (ULO): Calcium and Zinc; or Calcium and Phosphorus (mg/kg)	The fuel shall be free from ULO, and shall be considered to contain ULO when either one of the following conditions is met: Calcium > 30 and zinc > 15; or Calcium > 30 and phosphorus > 15.												
Max.	Hydrogen sulphide (mg/kg)					2.00								

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