

ULSD – EN 590 PPM 10

CHARACTERISTICS	UNITS	LIMITS	TEST METHODS		
			EN STANDARDS	UNE STANDARDS	ASTM STANDARDS
Cetane number		Min 51,0	EN ISO 5165 EN 15195	UNE-EN ISO 5165 UNE-EN15195	D 613
Cetane index		Min 46,0	EN ISO 4264	UNE-EN ISO 4264	D 4737
Density at 15°C		820 to 845	EN ISO 3675 EN ISO 12185	UNE-EN ISO 3675 UNE-EN ISO 12185	D 4052 D 1298
Polycyclic aromatic hydrocarbons	% m/m	max. 8	EN 12916	UNE-EN 12916	
Sulphur content	mg/kg	max. 10	EN ISO 20846 EN ISO 20884	UNE-EN ISO 20846 UNE-EN ISO 20884	
Distillation (vol. % recovered) 65% V/V collected 85% V/V collected 95% V/V collected	°C °C °C	min. 250 max. 350 max. 360	EN ISO 3405	UNE-EN ISO 3405	D 86
Kinematic viscosity at 40°C	mm ² /s	2,00 to 4,50	EN ISO 3104	UNE-EN ISO 3104	D 445
Flash point	°C	60.10	EN ISO 2719	UNE-EN ISO 2719	D 93
Cold filter plugging point (POFF) Winter (15 Sept to 31 March)	°C	max. -10	EN 116	UNE-EN 116	
Cloud point Winter (15 Sept to 31 March) °C		max. 0	EN 23015	UNE-EN 23015	D 2500 D 5772
Carbon residue (on 10% distillation residue)	% m/m	max. 0,3	EN ISO 10370	UNE-EN ISO 10370	D 4530
Lubricity, corrected w	µm	max. 460	EN ISO 12156-1	UNE-EN ISO 12156-1	
Water content	mg/kg	max. 200	EN ISO 12937	UNE-EN ISO 12937	
Total contamination (Solid particles)	mg/kg	max. 24	EN 12626	UNE-EN 12662	
Ash content	% m/m	max 0,01	EN ISO 6245	UNE-EN ISO 6245	D 482
Corrosion to copper (3h at 50°C)	ASTM scale	max. 1b	EN ISO 2160	UNE-EN ISO 2160	D 130
Oxidation stability	g/m ³	max. 25	EN ISO 12205	UNE-EN ISO 12205	D 2274
Oxidation stability	hours	min. 20	EN 15751	UNE-EN15751	
Colour	ASTM scale	max. 2			D 2274 D 6045
Transparency and gloss		complies			D 4176

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Sale Agent for Kuwait for Datex Energy Products

GCC Representative for MCU Coatings (anti-corrosion and Coatings)

GCC Representative of Metaltec TC (thermal insulation)

Representative of ARBOK – water solutions

Representative of Z2O – Sludge treatment

VIRGIN D6

SPECIFICATION VIRGIN D6			
METHOD	TEST	RESULT	UNIT
ASTM D5002	Density and relative of crude oils		
	Average API gravity	28.7 28.7 (MIN)	API
ASTM D1298-99	Density @ 15 Deg C	0.87 (0.8775) (Max)	kg/t
ASTM D97	Pour Point of Petroleum Products		
	Pour Point	< -33 (-36) (Below	°C
	Pour Point	< -24.4 (-32.8) (Below zero)	°F
ASTM D93 – IP 34	Pensky-Martens Closed Cup Flash Point		
	Corrected Flash Point	117 (137) (MIN)	
ASTM D4294	Sulfur Content in Petroleum Products	ED-XRF	
	Sulfur Content	0.38 (0.358) (MAX)	Wt%
ASTM D445	Kinematic /Dynamic Viscosity		
	Kinematic Viscosity @ 122 °F/50 °C	83 (18.12)	(MAX) Mm2/s
ASTM D6304	Water Content by Coulometric		
	Karl Fisher Titration		
	Water Content	0.20 (0.7) (MAX)	Wt%
ASTM D482	Ash from Petroleum Products		
	Average Ash	0.279 (1.007) (MAX)	Wt%
ASTM D2161	Conversion of Kinematic Viscosity		
To SUS/SFS 1	Saybolt furoi viscosity 122 °F	10.9SFS (MAX)	
ASTM D5184	Aluminum and Silicon in Fuel Oils by ICP-AES or AAS		
	Aluminum Content	102 (MAX)	mg/kg
	Silicon Content	93 (MAX)	mg/kg
ASTMD95	Water by Distillation, Vol%	0.70 (MAX)	vol%
ASTMD4530.06	Carbon Residue	1.11 (MAX)	Wt%
IP 143	Asphiteness (Heptane Insolubles)		
	Asphaltene Content		
IP 501	Determination of AL, Si, V, Ni, Fe, Na, Ca, Zn, P in Fuel Oil - ICPES		
	1 Aluminium	372	mg/kg
	Silicon	187	mg/kg
	1 Sodium	117	mg/kg
	Vanadium	1	mg/kg
	1 Calcium	779	mg/kg
	1 Zinc	298	mg/kg
	1 Phosphorus	4176	mg/kg
	1 Iron	545	mg/kg

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IET A 1

COMPONENT	UNIT	Min/Max	Test Methods ASTM / IP / GOST
COMPOSITION			
Appearance		C&B (1)	Visual
Colour, Saybolt		Report (2)	D156, D6045
Acidity, Total	mg KOH/g	Max. 0.10	D3242, IP 354
Aromatics	vol %	Max. 25.0	D1319, IP 156, GOST R 52063
Sulphur, Total	wt %	Max. 0.25,	D1266
Sulphur, Mercaptan	wt %	Max. 0.0030 (3)	D3227, IP 342, GOST R 52030
OR Doctor Test		Negative (3)	D4952, IP 30
VOLATILITY			
Distillation Temperature:			D86, IP 123
10% Recovery	°C	Max. 205.0	
50% Recovery	°C	Report	
90% Recovery	°C	Report	
Final BP	°C	Max. 300.0	
Distillation Residue	vol %	Max. 1.5	
Distillation Loss	vol %	Max. 1.5	
Flash Point	°C	Min. 38.0	D56 (4), D3828, IP170
Density @ 15°C	kg/m3	775.0 - 840.0	D1298, D4052, IP 160, IP 365, GOST R 51069
FLUIDITY			
Freezing Point Viscosity @ 20°C (cSt)	°C	Max. -47.0 (5) Max. 8	D2386, D5972, D 7153, IP 16
COMBUSTION			
Net Heat of Combustion	MJ/kg	Min. 42.80 (6)	D3338, D4529, D4809
Smoke Point	mm	Min. 25	D1322, IP 57
OR Smoke Point	mm	Min. 19	D1322, IP57
AND Naphthalenes	vol %	Max. 3	D1840
CORROSION			
Copper Strip (2h @ 100°C)		Max. No.1	D130, IP 154

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EPSO – CRUDE OIL

STANDARD SPECIFICATION OF RUSSIAN EASTERN SIBERIAN PACIFIC PIPELINE CRUDE OIL (ESPO)

NO	TEST	METHOD	UNIT	RESULT
1	Density At 15 °C	ASTM D1298	Kg/L	0.8508
2	API Gravity	ASTM D1250		34
3	Kinematic Viscosity at 20 °C	ASTM D445	cst	6.949
4	Sulphur Content	ASTM D4294	% Mass	0.535
5	Ash Content	ASTM D482	% Mass	0.011
6	Total Acid Number	ASTM D664	Mg KOH	< 0.50
7	Pour Point	ASTM D5853	°C	<= - 36
8	Sediment By Extraction	GOST 21534-75 (A)	% Mass	0.01
9	RVPE	ASTM D5191	kPa	40.4
10	Hydrogen Sulphide	UOP 163	ppm	< 1
11	Chloride Salt Content	ASTM D473	% Mass	17
12	Organic Chlorine Content	ASTM D4929 (B)	Mg/Kg	*1
13	Mercaptan Sulphur	UOP 163	ppm	111
14	Vanadium	IP 470	ppm	4
15	Nickel	IP 470	ppm	4
16	Iron	IP 470	ppm	19
17	Calcium	IP 470	ppm	2
18	Sodium	IP 470	ppm	1
19	Copper	AAS	ppm	< 1
20	Water By Distillation	ASTM D4006	% Mass	0.35
21	Paraffin Wax Content	UOP 46	% Mass	3.3
22	Asphaltenes (Heptane Insolubles) Content	IP 143	% Mass	0.20
23	TBP Distillation,	ASTM D5236	Vol%	Cutting
24	Boiling range Of FRAC. @ 760mmHg °C			Range
	LPG	% Vol		2.2
	C5 – 65	% Vol		6.1
	65 – 100	% Vol		9.8
	100 – 150	% Vol		16.7
	150 – 200	% Vol		25.1
	200 – 250	% Vol		32.7
	250 – 300	% Vol		42.0
	300 – 350	% Vol		50.9
	350 – 370	% Vol		54.2
	370 – 475	% Vol		70.0
	475 – 515	% Vol		74.6
	515 – 525	% Vol		76.0
	525 – 553	% Vol		79.9

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Heavy Fuel Oil 380cSt, Ex-Tank Curaçao

TESTS PERFORMED

	Test	Method	Unit	Result
1	SPECIFIC GRAVITY 60/60°F	ASTM D 1298		0.9939
2	API GRAVITY AT 60°F	ASTM D 1298		10.9
3	DENSITY AT 15°C	ASTM D 1298	kg/L	0.9933
4	SULPHUR	ASTM D 4294	%m	3.085
5	POUR POINT	ASTM D 97	°C	-15
6	VISCOSITY (KIN.) AT 50°C	ASTM D 445	mm ² /s	379.5
7	FLASH POINT PM.CT.	ASTM D 93	°C	90
8	WATER	ASTM D 95	%v	0.3

Crude Oil with API 42 & Sulphur % of 1.6%

Specific Gravity @ 15.56 /15.56 °C	---	0.8177
API Gravity	°API	41.5
Sulfur Content (Total)	wt. %	1.60
H₂S Content	ppm	<1
Mercaptan Content	ppm	111
Nitrogen Content (Total)	wt. %	0.13
Water & Sediment	vol. %	<0.05
Water Content	vol. %	<0.05
Salt Content	PTB	7
Kinematic Viscosity @ 10 °C	mm ² /s	4.580

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