

## INTERNATIONAL STANDARD ISO 8217:2010 (E)

### Petroleum Products, Specifications of residuals marine fuels

#### Designation ISO Fuel

Characteristics		Unit	Limit	CATEGORY ISO -F-										Test method reference	
				RMA	RMB	RMD	RME	RMG				RMK			
				10 (a)	30	80	180	180	380	500	700	380	500		700
Kinematic Viscosity at 50°C (b)		mm2/s	max.	10.00	30.00	80.00	180.00	180.0	380.0	500.0	700.0	380.0	500.0	700.0	ISO 3104
Density at 15°C		kg/m³	max.	920.0	960.0	975.0	991.0	991.0				1010.0			see 7.1 ISO 3675 or ISO 12185
CCAI		-	max.	850	860	860	860	870				870			see 6.3 a)
Sulfur (c)		mass %	max.	Statutory requirements										see 7.2 ISO 8754 ISO 14596	
Flash Point		°C	min.	60.0	60.0	60.0	60.0	60.0				60.0			see 7.3 ISO 2719
Hydrogen Sulfide (d)		mg/kg	max.	2.00	2.00	2.00	2.00	2.00				2.00			IP 570
Acid Number		Mg KOH/g	max.	2.5	2.5	2.5	2.5	2.5				2.5			ASTM D664
Total Sediment aged		mass %	max.	0.10	0.10	0.10	0.10	0.10				0.10			see 7.5 ISO 10307-2
Carbon Residue - micro method		mass %	max.	2.50	10.00	14.00	15.00	18.00				20.00			ISO 10370
Pour point (upper) f	Winter Quality	°C	max.	0	0	30	30	30				30			ISO 3016
	Summer Quality	°C	max.	6	6	30	30	30				30			ISO 3016
Water		Vol %	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			see 7.7 IP 501, IP 470 or ISO 14597
Sodium		mg/kg	max.	50	100	100	50	100				100			see 7.8 IP 501 IP470
Aluminum plus silicon		mg/kg	max.	25	40	40	50	60				60			see 7.9 IP 501, IP 470 or ISO 10478
Used Lub oils (ULO) Calcium and Zinc: or Calcium and phosphorus		mg/kg	-	The fuel shall be free from ULO. A fuel 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										see 7.10 IP 501 or IP470 IP 500	