



## Technical Data Sheet

### Fuel Oils

#### Description

Z Energy Fuels Oils are a range of residual fuel oils that enable the most economic fuel to be matched to the appropriate engine, boiler or furnace application.

All Z Energy Fuel Oils are manufactured to fully meet the relevant grades in ISO 8217:2012. This international standard specifies the requirements for petroleum fuels for use in marine diesel engines and boilers, prior to appropriate treatment before use.

#### Health & Safety

Residual Fuel Oils are classified according to Hazardous Substances (Classifications) Regulation 2001 as: 3.1D - Flammable liquid, Low Hazard, and 9.1C - Substance harmful in the aquatic environment.

Avoid contact with the skin and eyes, and breathing vapours or mists.

For further guidance on product health and safety refer to the appropriate Z Energy Safety Data Sheet.

#### Typical Physical Characteristics

Description	Units	Methods	Typical Properties			
			Light Fuel Oil 40 cSt	Medium Fuel Oil 80 cSt	Heavy Fuel Oil 180 cSt	Heavy Bunker Fuel Oil 380 cSt
<b>Fuel Oil Grade</b>						
<b>ISO 8217 Grade</b>			RMD80	RMD80	RMG180	RMG 380
<b>Density @ 15°C</b>	kg/L	D1298/ D4052	0.9217	0.945	0.9597	0.9699
<b>Viscosity @ 40°C</b>	mm <sup>2</sup> /s	D445	38	75	174	350
<b>Flash Point</b>	°C	D93	100	100	100	100
<b>Sulphur</b>	% mass	D4294	1.9	2.5	2.9	3.2
<b>Sediment</b>	% mass	D473	0.01	0.01	0.02	0.04
<b>Water</b>	% vol	D95	<0.05	<0.05	<0.05	<0.05
<b>Strong Acid Number</b>	mg KOH/g	D974	Nil	Nil	Nil	Nil
<b>Ash</b>	% mass	D482	0.023	0.030	0.031	0.040
<b>Carbon Residue</b>	% mass	D4530	10	13	15	17
<b>Specific Energy @ 15°C (Net)</b>	MJ/kg	ISO8217	41.5	41.0	40.4	40.4
<b>Sodium</b>	mg/kg	IP501	10	18	20	55
<b>Aluminium + Silicon</b>	mg/kg	IP501	<15	<15	<15	20
<b>Vanadium</b>	mg/kg	IP501	50	56	60	90

These characteristics are typical of current production. Whilst future production will conform to Z Energy Ltd and legislated specifications, variations in these characteristics may occur