



BV - ISO 8217 MGO

Marine Gasoil – February 15, 2026



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In February 2026, the independent and accredited laboratory Bureau Veritas analyzed a sample of Marine Gas Oil treated with **XBEE Enzyme Fuel Technology**.

The analysis demonstrated that such fuel, also known as MDO (Marine Diesel Oil) remains in compliance with the ISO 8217:2017 MGO standard.

Conclusions:

Testing was performed after laboratory hand-blend XBEE fuel treatment at 4,000:1 XBEE, followed by a two-week retention period at constant temperature. The tested sample, blended with XBEE technology copes with the specification limits of Marine Gasoil grade specifications according to ISO 8217:2017 standard.

Analyses	Methods	Without XBEE	With XBEE	Units	Limits
Appearance	Visual	Clear & Bright	Clear & Bright	-	Clear & Bright
Density at 15°C	EN ISO 12185	847.60	847.3	kg/m ³	890.00 max
Cetane index	ISO 4264	53.8	53.8	index	40.00 min
Viscosity at 40°C	EN ISO 3104	3.806	4.301	mm ² /s	2.00-6.00
Flash point PM – proc. A	EN ISO 2719	79.0	80.5	°C	60.0 min
Oxidation stability, 95°C	EN ISO 12205	2	<1	g/m ³	25 max
Sulphur content (EDF)	EN ISO 8754	0.094	0.091	% m/m	1.00 max
Ash content	ISO 6245	<0.001	<0.001	% m/m	0.01 max
Carbon MCR on 10% residue	EN ISO 10370	<0.10	0.05	% wt	0.30 max
Lubricity, method HFRR	ISO 12156-1	371	358	µm	520 max
Hydrogen sulphide	IP 570 – Proc. A	<0.60	<0.60	mg/kg	2.00 max
Acid number	ASTM D664	0.13	0.13	mgKOH/g	0.5 max
Cloud point	EN 23015	+9	+9	°C	-
Cold filter plugging point	EN 116	+4	+4	°C	-
Pour point - Upper	ISO 3016	-3	-3	°C	0 max

Annexes

Original reports

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Certificate of Analysis

Our ref	BEANT-25-11573-XXV2000680	Asset	Submitted Sample
Location	Not specified	Seals	None
Product	MGO	Packed	Plastic
Reference id	XBEE	Submitted by	Ourselves
Sample received	13-02-2026	End of analysis	15-02-2026
Subject	Submitted samples		
Sample from	Sample as received		

Test	Method	Unit	Result
Viscosity at 40 °C (a)	EN ISO 3104	mm ² /s	3.806
Density at 15 °C (a)	EN ISO 12185	kg/m ³	847.6
Cetane Index (four equation)	ISO 4264		53.8
Sulphur (EDF) (a)	EN ISO 8754	%m/m	0.094
Flash Point PM - proc. A (a)	EN ISO 2719	Deg C	79.0
Hydrogen Sulphide	IP 570 - Proc. A	mg/kg	<0.60
Acid number	ASTM D664	mg KOH/g	0.13
Oxidation Stability, 95 °C	EN ISO 12205	g/m ³	2
MCR on 10 % residue	EN ISO 10370	% m/m	<0.10
Cloud Point (a)	EN 23015	Deg C	9
Cold Filter Plugging Point (a)	EN 116	Deg C	4
Pour Point - Upper (a)	ISO 3016	Deg C	-3
Appearance (a)	Visual		clear&bright
Ash content	ISO 6245	% m/m	<0.001
Lubricity, method HFRR	ISO 12156-1	micron	371

Unless specified, the latest version at our disposal of the test methods has been used.
The results relate only to the items tested.

AUTHORIZATION

Dario D'Heldt (Chemist)

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All tests marked by (a)
are accredited by
BELAC ref. 486-TEST
ISO/IEC 17025



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Laboratory Measurement Uncertainties are not taken into account for the evaluation of specification limits. If product is outside method scope; precision and accuracy of result cannot be guaranteed.

Method Validation data is available upon request.



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Certificate of Analysis

Our ref	BEANT-25-11573-XXV2000681	Asset	Submitted Sample
Location	Not specified	Seals	None
Product	MGO with XBEE additive doping	Packed	Plastic
Reference id	XBEE	Submitted by	Ourselves
Sample received	13-02-2026	End of analysis	04-03-2026
Subject	Submitted samples		
Sample from	Sample as received		

Test	Method	Unit	Result
Viscosity at 40 °C (a)	EN ISO 3104	mm ² /s	4.301
Density at 15 °C (a)	EN ISO 12185	kg/m ³	847.3
Cetane Index (four equation)	ISO 4264		53.8
Sulphur (EDF) (a)	EN ISO 8754	%m/m	0.091
Flash Point PM - proc. A (a)	EN ISO 2719	Deg C	80.5
Hydrogen Sulphide	IP 570 - Proc. A	mg/kg	<0.60
Acid number	ASTM D664	mg KOH/g	0.13
Oxidation Stability, 95 °C	EN ISO 12205	g/m ³	<1
MCR on 10 % residue	EN ISO 10370	% m/m	0.05
Cloud Point (a)	EN 23015	Deg C	9
Cold Filter Plugging Point (a)	EN 116	Deg C	4
Pour Point - Upper (a)	ISO 3016	Deg C	-3
Appearance (a)	Visual		clear&bright(*)
Ash content	ISO 6245	% m/m	<0.001
Lubricity, method HFRR	ISO 12156-1	micron	358

Unless specified, the latest version at our disposal of the test methods has been used.
The results relate only to the items tested.

Remarks:

(*) Please note: Minor liquid separation was observed after 2 weeks of settling. All analysis have been performed after homogenization of the sample, no free liquid was observed after this.

AUTHORIZATION

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