

Product	47104~000~	IFO-380		
Extension	11 - 03/24/2017 12:42:		Origin	
Catalogue	0 - 03/24/2017 12:34:5	Generated on: 03/27/2017 14:44:03	Valid since	03/24/2017 12:34:4
			Valid until	

Product extension data		47104~000~		
Product	IFO-380	Origin		
Name		Product type	HYDROCARBON	
Revision	11 - 03/24/2017 12:42:43	Page Book	65/050/106	
Valid since	03/24/2017 12:34:49	Mod. user	Marta Joaquina Martinez N	
Valid until		Mod. date	03/24/2017 12:42:43	
Quality level	Specification according to European Directive 2016/802/UE and Royal Decree 290/2015. It complies with ISO 8217:2017. ISO-F-RMG 380 grade. It includes national agreements between the involved sectors.			

Specification catalogue data		47104~000~		
Status	Publicado - Marta Joaquina Martinez Nieto - 03/27/2017 12:46:38			
Revision	0 - 03/24/2017 12:34:50			
Valid since	03/27/2017 12:46:24	Mod. user	Marta Joaquina Martinez N	
Valid until		Mod. date	03/27/2017 12:46:38	
Reference	FUEL OILS.BUNKER			
Market	Ceuta/Gibraltar/Iberian Peninsula/International			
Notes				

Catalogue specification data		47104~000~						
C	Test	Property	Standard	Min. limit	Max. limit	Std. limit	P	N
	A044504	V20 Viscosity at 50°C [mm2/s]	ASTM D 445	22.0	380.0		C	[0]
	A405200	R05 Densidad 15°C [kg/l]	ASTM D 4052		0.9910		C	
	P054100	366 Indice de Aromaticidad CCAI	-		870		C	[1]
	A429400	061 Sulphur [% (m/m)]	ASTM D 4294		3.50		C	[2]
	A009300	195 Inflamabilidad P/M [°C]	ASTM D 93	60.0			C	[3]
	P057000	Z89 Sulfuro de Hidrogeno [mg/kg]	IP 570		2.00		C	[4]
C	A066401	237 Numer. de Acido [mg KOH/g]	ASTM D 664		2.5		C	[5]
	V014505	953 Sed. Total Existente [% (m/m)]	ISO 10307-1		0.10		C	[6]
	V014501	946 Sedimento Total Pot. [% (m/m)]	ISO 10307-2		0.10		C	[7]
	A474001	743 Compatibilidad	ASTM D-4740		1		C	[8]
	V014600	Compatibilidad ISO	ISO 10307					
		911 Com.Sedim. Total [% (m/m)]			0.10		C	[9]
		912 Com.Sedim. T.Aceler. [% (m/m)]			0.10		C	[10]
	A453000	121 Residuo Carbon Micro [% (m/m)]	ASTM D 4530		18.00		C	
C	A595000	118 Upper Pour Point [°C]	ASTM D 5950		30		C	[11]
	A009500	W20 Water by Distillatio [% (V/V)]	ASTM D 95		0.50		C	
	A048200	085 Ashes [% (m/m)]	ASTM D 482		0.100		C	
	P050103	360 Vanadio [mg/kg]	IP 501		350		C	
	P050104	314 Sodium [mg/kg]	IP 501		100		C	
	P050102	138 Aluminio+Silicio [mg/kg]	IP 501		60		C	
	P050100	Aceite Lub.Usado ULO	IP 501					
		077 Calcium [mg/kg]			30		C	[12]
		163 Phosphorous [mg/kg]			15		C	[13]
		424 Zinc [mg/kg]			15		C	[14]
	P014300	051 Asfaltenos [% (m/m)]	IP 143		2/3R.C		C	[15]
	A038104	ZA1 Notas. general	-				C	[16]
	A038105	ZA2 Met.Lab.Alternativos	-				C	[17]
(* Notes		<p>[0] Minimum viscosity limit agreed with Supply Chain and Bunker for commercial requirements.</p> <p>[1] It shall be calculated with the Lewis formula in accordance with section 6.3 of ISO 8217:2017. For precision calculations, refer to section C.2 of Annex C.</p> <p>[2] Depending on the geographical market of this product and the date this specification comes into force, the most restrictive of the regulations susceptible of being applied has been taken into account (shown with an *):</p> <p>- ISO 8217:2017</p>						

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- Revised Annex VI of MARPOL*
- Directive 2016/802/UE*
- Royal Decree 290/2015*

National and regional bodies may impose their own emission requirements. Evolution of sulphur content specifications:

- Use in ECAs: 0,10%
- Use outside of ECAs: currently 3,50%; 0,50% in 2020

[3] Please refer to section 6.4 of ISO 8217:2017 for more information. A FP > 62.5°C is recommended in the manufacturing process to avoid getting values below 60°C in subsequent analysis, due to the tolerance of the method.

[4] Given the toxicity of hydrogen sulphide, it is essential that ship-owners, operators and other involved parties keep the appropriate safety standards to protect the crew and personnel that might be exposed to said substance. Refer to Annex D of ISO 8217:2017 for more information.

[5] Should the Fuel come from the distillation of naphthenic crudes, values above the established limit might be accepted at the discretion of the buyer and the supplier. Refer to Annex e of ISO 8217:2017 for more information.

[6] Internal specification; it will not appear on the external Certificate of Analysis.

[7] The Total Sediment Accelerated (TSA) test may be used, although the reference method is the Total Sediment Potential (TSP) test.

[8] This only applies to imports. Please refer to the general notes for information on blends and applicable criteria.

[9] It applies to both manufactured and imported fuels. Use the test included in ISO 10307-1 to determine the compatibility on the basis of the Total Existent Sediment (TSE). Please refer to the general notes for information on blends and applicable criteria.

[10] It applies to both manufactured and imported fuels. Use the test included in ISO 10307-2, Procedure B, to determine the compatibility on the basis of the Total Sediment Accelerated (TSA). Please refer to the general notes for information on blends and applicable criteria.

[11] The purchaser should confirm that this pour point is suitable for the ship's intended area of operation.

[12] It shall be considered that the product contains ULO and, thus, is out of specification when Ca > 30 and Zn > 15 or when Ca >30 and P >15.

[13] It shall be considered that the product contains ULO and, thus, is out of specification when Ca >30 and Zn >15 or when Ca >30 and P >15.

[14] It shall be considered that the product contains ULO and, thus, is out of specification when Ca > 30 and Zn >15 or when Ca >30 and P >15.

[15] Internal specification; it will not appear on the external Certificate of Analysis.

[16] GENERAL NOTES:

Specifications according to ISO 8217:2017. ISO-F-RMG 380 grade. National agreements between the sectors involved have been taken into account. The sampling shall comply with ISO 13739 or its National equivalent.

This document specifies the requirements for fuels for use in marine diesel engines and boilers, prior to conventional onboard treatment (settling, centrifuging, filtration) before use. The specifications for fuels in this document can also be applied to fuels used in stationary diesel engines of the same or similar type as those used for marine purposes.

For the purposes of this document, the term "fuels" is currently used to include the following: a) hydrocarbons from petroleum crude oil, oil sands and shale; b) hydrocarbons from synthetic or renewable sources, similar in composition to petroleum distillate fuels; c) blends of the above with FAME component where permitted.

The fuel as supplied shall be homogeneous and conform to the characteristics and limits given in this specification when tested in accordance with the methods specified. The fuel composition shall consist predominantly of hydrocarbons primarily derived from petroleum sources while it may also contain hydrocarbons from the following: a) synthetic or renewable sources such as HVO, GTL, BTL; b) co-processing of renewable feedstock at refineries with petroleum feedstock.

The fuel shall not include FAME other than a "de minimis" level. In the context of this document, "de minimis" means an amount that does not render the fuel unacceptable for use in marine applications that are not designed or suited to handling fuels containing FAME. Fuel producers and suppliers should ensure that a) there is no deliberate blending of FAME into the fuel, and b) adequate controls are in place so that the resultant fuel, as delivered, does not exceed the "de minimis" which is now taken to be a level of approximately 0,5 volume % FAME. Refer to Annex A of ISO 8217:2017 for more information.

The fuel shall be free from any material at a concentration that causes the fuel to be unacceptable for use in accordance with second paragraph (i.e. material not at a concentration that is harmful to personnel, jeopardizes the safety of the ship, or adversely affects the performance of the machinery). It is not considered practical to require detailed chemical analyses beyond those included in this specification. However, it is required that refineries and supply stations, including tank barges and tankers, have a quality management system suitable for guaranteeing that the product complies with the requirements included in Clause 5 of ISO 8217:2017. Refer to Annex B of ISO 8217:2017 for more information.

Subject to the requirements in two previous paragraphs, additives that improve some aspects of the fuel's characteristics or performance are permitted.

In case of disagreement on the precision and interpretation of the results of the relevant tests, ISO 4259:2006 shall

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be applied. Refer to CIMAC guideline 'The interpretation of marine fuel analysis test results (02/2016)' for more information.

Information on blends and compatibility criteria: The Compatibility requirement shall be mandatorily met for a blend (Fuel/MGO/MDO/Cutter) equivalent to IFO 120, although ideally it should also be fulfilled by a mixture equivalent to IFO 20. Non-compliance for the IFO 20 mixture will not imply rejection of the batch.

[17] REFERENCE AND/OR ALTERNATIVE TEST METHODS:

The reference lab method, when available, shall be designated "(R)".

Viscosity at 50°C

ISO 3104 (R)

Density at 15°C

ISO 3675

ISO 12185

In case of disagreement concerning density, all parties shall agree, prior to additional testing, upon the test method to be used.

Sulphur

ISO 8754 (R)

ISO 14596

Flash Point

ISO 2719 Procedure B (R)

Hydrogen Sulphide

IP570 Procedure A (R)

IP570 Procedure B

Total Sediment

ISO 10307-2 Procedure A (TSP, potential) (R)

ISO 10307-2: Procedure B (TSA, accelerated)

Carbon Residue

ISO 10370 (R)

Upper Pour Point

ISO 3016 (R)

ASTM D6892

Water

ISO 3733 (R)

Ash

ISO 6245 (R)

Vanadium

IP 501 (R)

IP 470

ISO 14597

Sodium

IP 501 (R)

IP 470

Aluminium+Silicon

IP 501 (R)

IP 470

ISO 10478

Used Lubricating Oil (ULO): Calcium, Zinc, Phosphorus

IP 501 (R)

IP 470

IP 500

C - Control Specification.

C - P. Continuous. W - P. Winter. T - P. Transition. S - P. Summe

**** End of Report ****

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