

Emirates National Oil Company Limited (ENOC) LLC  
Att: Mr. Prashant Bhatt

## NO OBJECTION LETTER: ENOC STRATA MSDO SERIES LUBRICATING OILS

Dear Sir,

The ENOC Strata MSDO 450 lubricating oil has gone through a 5 954 -hour validation test in the Wärtsilä® 8L46 PAAE035454 main engine on board the container vessel M/V Linda. Based on the results of the engine inspection and lubricating oil analyses, Wärtsilä has no objection to the use of the following ENOC products:

Product	SAE grade *)	Base Number	Fuel category, ISO 8217:2017(E)
Strata MSDO 330	30	30	ISO-F-DMX, DMA, DFA, DMZ, DFZ, DMB, DFB ISO-F-RMA 10 – RMK 700, CRO **)
Strata MSDO 430	40	30	ISO-F-DMX, DMA, DFA, DMZ, DFZ, DMB, DFB ISO-F-RMA 10 – RMK 700, CRO **)
Strata MSDO 340	30	40	ISO-F-RMA 10 – RMK 700, CRO **)
Strata MSDO 440	40	40	ISO-F-RMA 10 – RMK 700, CRO **)
Strata MSDO 350	30	50	ISO-F-RMA 10 – RMK 700, CRO **)
Strata MSDO 450	40	50	ISO-F-RMA 10 – RMK 700, CRO **)
Strata MSDO 355	30	55	ISO-F-RMA 10 – RMK 700, CRO **)
Strata MSDO 455	40	55	ISO-F-RMA 10 – RMK 700, CRO **)

\*) Use of SAE 30 lubricating oils is allowed only in the engine types Wärtsilä® Vasa 22 / 22/26 and Wärtsilä® Vasa 32 / 32LN. In these engine types the suitability of SAE 40 grade lubricating oils depends on the capacity of the lubricating oil cooler used in the installation.

\*\*) CRO stands for crude oil, for which fuel quality an internal fuel specification is released.

The statement is valid for the engine types Wärtsilä® Vasa 22 / 22/26, Wärtsilä® Vasa 32 / 32LN, Wärtsilä® 20, Wärtsilä® 26, Wärtsilä® 31, Wärtsilä® 32, Wärtsilä® 38, Wärtsilä® 46, Wärtsilä® 46F, Wärtsilä® 50, Wärtsilä® 64, Wärtsilä® 20DF, Wärtsilä® 31DF, Wärtsilä® 32DF, Wärtsilä® 34DF, Wärtsilä® 46DF, Wärtsilä® 50DF and Sulzer® Z40 / ZA40 / ZA40S provided that fuel quality also fulfils the fuel specifications of Wärtsilä and that the engine type specific lubrication requirements are taken into account.

Instructions for other older engine types manufactured by Wärtsilä can be requested from Wärtsilä Services units being in response of a particular engine type in question.

Residual fuel operation: In the engine types Wärtsilä® Vasa 32 / 32LN, Wärtsilä® 20, Wärtsilä® 26, Wärtsilä® 31, Wärtsilä® 32, Wärtsilä® 38, Wärtsilä® 46, Wärtsilä® 46F, Wärtsilä® 50 and Wärtsilä® 64 the use of BN 50-55 lubricants is recommended in the first place, especially if fuel sulphur content is above 2,0 % m/m. BN 40 lubricants can be used as well as if experience shows that the lubricating oil BN equilibrium remains at an acceptable level. BN 30 lubricants are recommended to be used only in special cases. Concerning the engine type Sulzer Z40 / ZA40 / ZA40S the use of BN 50-55 lubricating oils is recommended only in the engines being equipped with piston skirt lubrication and having the anti-polishing rings installed.

Distillate fuel operation: In the first place BN 10 – 20 lubricating oils are recommended to be used, but the use of BN 30 lubricating oils is also allowed.

These lubricating oils will be included in Wärtsilä's list of lubricating oils having passed Wärtsilä's lubrication oil testing criteria.

ENOC undertakes all responsibility for the performance of the lubricating oils in service of the above mentioned engine types to the exclusion of any liability of any Wärtsilä company belonging to Wärtsilä group. ENOC along with other possible manufacturers and distributors of the products in question shall indemnify, compensate and hold harmless Wärtsilä and companies belonging to Wärtsilä group from and against any claims, damages and losses caused by the lubricating oils in question.

ENOC undertakes to inform the undersigned / responsible representatives of Wärtsilä of any subsequent changes in the formulation of the lubricating oil brands in question.

Handled by  
K Juoperi

Reference  
NoL ENOC Strata MSDO.doc

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Yours faithfully,

Wärtsilä Finland Oy

Marine Solutions, Marine Power Solutions, R&D and Engineering



Stefan Saario  
General Manager, Engine Expertise



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Chief Expert, Engine Fluids