

# Validated engine oils for WinGD engines

## Issue 012 - 2022-11

This document must be read and used in conjunction with the WinGD document "Lubricants" [Link](#)

### Engine types

The oil lists are valid for the following engine types:

WinGD X, WinGD X-DF, WinGD RT-flex, WinGD RT-flex-DF,

Wärtsilä RTA, Wärtsilä RT-flex and Wärtsilä X engines as well as in Sulzer 2-stroke engines

### Changes to previous issue (011 - 2022-07)

#### New products added:

- No new products added this time

#### Products removed:

- Chevron Taro Special HT LS 40
- Chevron Taro Special HT 70
- Chevron Taro Special HT 100
- Hin Leong Universal CYL EN 7050

#### Changes on existing products:

- Gas general usage allowed for the following products:
  - Aegean Alfacylo 540NG
  - ARG ARGuard Marine ACC 5040
  - AVIN Oil Neptune 40 SAE 50
  - BP Castrol Cyltech 40
  - Cepsa Gavia 4050
  - Chevron Lubricants Taro Ultra 40
  - Cosmo Marine 5040
  - Cyclon Hellas Nautilus LS
  - ENEOS Marine C405S
  - ENI Punica 540
  - ENOC Strata Cyl 540LS
  - ExxonMobil Mobilgard 540
  - Idemitsu Kosan (IKC) Daphne Seamaster A-50LS
  - Lotos Marinol RG 4050
  - Motor Oil Hellas EMO Neptune 40 SAE50
  - Sinopec Marine Cylinder Oil 5040
  - SK Supermar Cyl 40 Plus

For additional information on any of the above products, please contact the respective oil company directly.

#### General amendments to this document:

- Layout of oil list modified

## General remarks

### LNG column

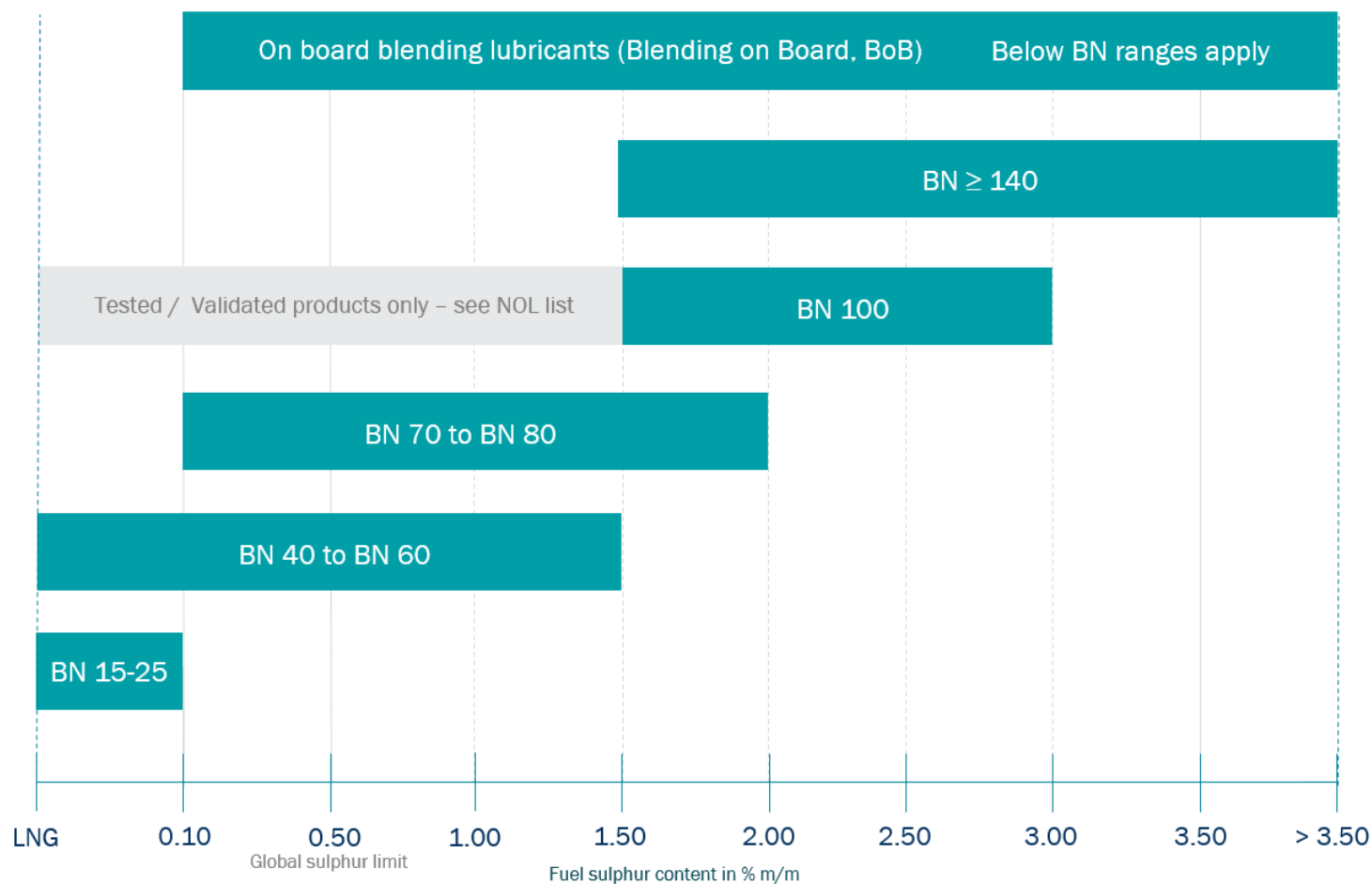
All cylinder oils shown under the LNG gas fuel column are allowed for general usage in gas mode.

- “DF-validated” oils have passed a field validation trial running in gas mode. These oils have demonstrated a good ability to keep the piston running components clean while running in gas mode at optimised low feed rates.
- “General Usage” oils have passed a field validation trial running on liquid fuels only. Based on their performance, the usage of these oils in gas mode is also allowed.
- Oils which are not allowed to be used in gas mode have an empty field in the LNG gas fuel column.

## General guideline for cylinder lubricating oil selection

Step 1: Choose a suitable BN range for cylinder lubricating oil from the following overview based on intended fuel usage.

Step 2: Refer to the table “List of validated cylinder lubricating oils” on the next pages to verify specific cylinder oil usage guidelines



**Note:** In all instances the information in this document takes precedence and should be regarded as the final approved guidelines by WinGD.

## List of validated cylinder lubricating oils

Oil supplier	Oil name	BN	BN range	Gas	Liquid fuels								
				LNG	0.00% to 0.10% S	0.10% to 0.50% S	0.50% to 1.50% S	1.50% to 2.00% S	2.00% to 2.50% S	2.50% to 3.00% S	3.00% to 3.50% S	> 3.50% S	
Aegean	Alfacylo 540 NG	40	40 - 60										
	Alfacylo 570	70	70 - 80			Monitor							
	Alfacylo 570GII	70	70 - 80			Monitor							
ARG	ARGuard Marine ACC 5040	40	40 - 60										
	ARGuard Marine ACC 5070	70	70 - 80			Monitor							
	Marine Diesel Cylinder Lubricant	70	70 - 80			Monitor							
AVIN	ARGuard Marine ACC 5000	100	80 - 100					Monitor					
	Neptune 40 SAE 50	40	40 - 60										
	Neptune 70 SAE 50	70	70 - 80			Monitor							
Bardahl	Neptune 100 SAE 50	100	80 - 100					Monitor					
	Naval 50	70	70 - 80			Monitor							
Castrol	Cyltech 40	40	40 - 60	2)									
	Cyltech 40 SX	40	40 - 60	DF validated									
	Cyltech 70	70	70 - 80			Monitor							
Cepsa	Cyltech 100	100	80 - 100					Monitor					
	Gavia 4050	40	40 - 60										
	Gavia 7050	70	70 - 80			Monitor							
Chevron	Taro Ultra 20	20	15 - 25										
	Taro Ultra 40	40	40 - 60	2)									
	Taro Ultra 40X	40	40 - 60										
	Taro Ultra 70	70	70 - 80			Monitor							
	Taro Ultra 70X	70	70 - 80			Monitor							
	Taro Ultra 100	100	80 - 100					Monitor					
	Taro Ultra 100X	100	80 - 100					Monitor					
Cosmo	Taro Ultra 140	140	≥ 140					Monitor					
	Marine 5040	40	40 - 60										

Oil supplier	Oil name	BN	BN range	Gas		Liquid fuels							
				LNG		0.00% to 0.10% S	0.10% to 0.50% S	0.50% to 1.50% S	1.50% to 2.00% S	2.00% to 2.50% S	2.50% to 3.00% S	3.00% to 3.50% S	> 3.50% S
CPC	Marilube Oil CO-200 Plus	20	15 - 25										
	Marilube Oil CO-700	70	70 - 80				Monitor						
	Marilube Oil CO-700 Plus	70	70 - 80				Monitor						
	Marilube Oil CO-1000 Plus	100	80 - 100						Monitor				
	Marilube Oil CO-1000 SP	100	80 - 100						Monitor				
Cyclon Hellas	Nautilus LS	40	40 - 60										
	Nautilus Heavy	70	70 - 80				Monitor						
	Nautilus Heavy XT	100	80 - 100						Monitor				
ENEOS	Marine C405	40	40 - 60										
	Marine C405S	40	40 - 60										
	Marine C405Z	40	40 - 60										
	Marine C705	70	70 - 80				Monitor						
	Marine C705S	70	70 - 80				Monitor						
	Marine C1005	100	80 - 100						Monitor				
	Marine C1005S	100	80 - 100						Monitor				
ENI	Punica 540	40	40 - 60										
	Punica 570	70	70 - 80				Monitor						
	Punica 5100	100	80 - 100						Monitor				
ENOC	STRATA CYL 540LS	40	40 - 60										
	STRATA CYL N 570	70	70 - 80				Monitor						
ExxonMobil	Mobilgard 540	40	40 - 60										
	Mobilgard 540X	40	40 - 60	2)	DF validated								
	Mobilgard 570	70	70 - 80				Monitor						
	Mobilgard 5100	100	80 - 100						Monitor				
	Mobilgard 5145	145	≥ 140						Monitor				
Formosa	XC05070	70	70 - 80				Monitor						
GazPromNeft	Ocean CCL 17 ULSF	17	15 - 25										
	Ocean CCL 70	70	70 - 80				Monitor						
	Ocean CCL 100 HSF	100	80 - 100						Monitor				

Oil supplier	Oil name	BN	BN range	Gas	Liquid fuels								
				LNG	0.00% to 0.10% S	0.10% to 0.50% S	0.50% to 1.50% S	1.50% to 2.00% S	2.00% to 2.50% S	2.50% to 3.00% S	3.00% to 3.50% S	> 3.50% S	
Gulf Oil Marine	GulfSea Cylcare ECA 50X	17	15 - 25										
	GulfSea Cylcare ECA 50S	20	15 - 25										
	GulfSea Cylcare 5040X	40	40 - 60										
	GulfSea Cylcare 5070H	70	70 - 80			Monitor							
	GulfSea Cylcare 5070X	70	70 - 80			Monitor							
	GulfSea Cylcare 5070S	70	70 - 80			Monitor							
	GulfSea Cylcare 50100X	100	80 - 100					Monitor					
	GulfSea Cylcare 50100S	100	80 - 100					Monitor					
	GulfSea Cylcare 50100X1	100	80 - 100					Monitor					
	GulfSea Cylcare 50140S	140	≥ 140					Monitor					
GulfSea Cylcare 50140X	140	≥ 140					Monitor						
Hyundai Oilbank	Xteer MCL 5040L	40	40 - 60										
	Xteer MCL 5070	70	70 - 80			Monitor							
	Xteer MCL 50100	100	80 - 100					Monitor					
Idemitsu Kosan	Daphne Seamaster A-50LS	40	40 - 60	2)									
Indian Oil	Servo Marine 7050	70	70 - 80			Monitor							
	Servo Marine ME10050	100	80 - 100					Monitor					
	Servo Marine ME14050	140	≥ 140					Monitor					
LOTOS	Marinol RG 4050	40	40 - 60										
	Marinol RG 7050	70	70 - 80			Monitor							
Lubmarine (TotalEnergies)	Talusia LS 40	40	40 - 60										
	Talusia Universal	57	40 - 60	DF validated									
	Talusia HR 70	70	70 - 80			Monitor							
	Talusia Universal 100	100	80 - 100					Monitor					
	Talusia Optima	100	80 - 100			<300 h							
	Talusia HR 140	140	≥ 140					Monitor					
LUKOIL	Navigo MCL Ultra	20	15 - 25	DF validated									
	Navigo MCL Extra	40	40 - 60										
	Navigo 70 MCL AW	70	70 - 80			Monitor							
	Navigo 100 MCL	100	80 - 100					Monitor					
	Blended Cylinder Oil (BN 60 to 100)	N/A	N/A										

Oil supplier	Oil name	BN	BN range	Gas	Liquid fuels								
				LNG	0.00% to 0.10% S	0.10% to 0.50% S	0.50% to 1.50% S	1.50% to 2.00% S	2.00% to 2.50% S	2.50% to 3.00% S	3.00% to 3.50% S	> 3.50% S	
Motor Oil Hellas	EMO Neptune 40 SAE 50	40	40 - 60										
	EMO Neptune 70 SAE 50	70	70 - 80			Monitor							
	EMO Neptune 100 SAE 50	100	80 - 100					Monitor					
Pertamina	Medripal 5040	40	40 - 60										
	Medripal 570	70	70 - 80			Monitor							
Petrobras	Marbrax CID-54-AP	40	40 - 60	DF validated									
	Marbrax CID-55	50	40 - 60		Monitor								
	Marbrax CID-57	70	70 - 80			Monitor							
	Marbrax CID-5100	100	80 - 100					Monitor					
PetroChina	KunLun DCA 5070H	70	70 - 80			Monitor							
PetroGulf	Marine Cylinder Oil 5070	70	70 - 80			Monitor							
	Marine Cylinder Oil 50100	100	80 - 100					Monitor					
Petronas	Silub 20 LS50	20	15 - 25										
Premier Six	Opt-Max Shieldguard 5040	40	40 - 60										
	Opt-Max Shieldguard 5070	70	70 - 80			Monitor							
	Opt-Max Shieldguard 50110	110	80 - 100					Monitor					
	Opt-Max BoB 300 <sup>1)</sup> (BN 40 to 120)	N/A	N/A										
Puma Energy	Marine Cylinder Oil TBN 70 SAE 50	70	70 - 80			Monitor							
	Marine Cylinder Oil TBN 100 SAE 50	100	80 - 100					Monitor					
Shell	Alexia 40	40	40 - 60										
	Alexia 70	70	70 - 80			Monitor							
	Alexia 100	100	80 - 100					Monitor					
	Alexia 140	140	≥ 140					Monitor					
SINOPEC	Cylinder Oil 5017	17	15 - 25										
	Cylinder Oil 5040	40	40 - 60	2)									
	Cylinder Oil 5040N	40	40 - 60										
	Cylinder Oil 5070N	70	70 - 80			Monitor							
	Cylinder Oil 5070S	70	70 - 80			Monitor							
	Cylinder Oil 5080S	80	70 - 80			Monitor							
	Cylinder Oil 50100	100	80 - 100					Monitor					
	Cylinder Oil 50100N	100	80 - 100					Monitor					

Oil supplier	Oil name	BN	BN range	Gas	Liquid fuels								
				LNG	0.00% to 0.10% S	0.10% to 0.50% S	0.50% to 1.50% S	1.50% to 2.00% S	2.00% to 2.50% S	2.50% to 3.00% S	3.00% to 3.50% S	> 3.50% S	
SK	Supermar CYL 40 Plus	40	40 - 60	2)									
	Supermar CYL 40	40	40 - 60										
	Supermar CYL 40L	40	40 - 60										
	Supermar CYL 70 Plus	70	70 - 80			Monitor							
	Supermar CYL 100	100	80 - 100					Monitor					
Texas Petrochemical	Texmarine 700	70	70 - 80			Monitor							
	Texmarine 1000	100	80 - 100					Monitor					
United Oil company	U Star Lube Star Marine 570	70	70 - 80			Monitor							

< 300 hrs	GENERAL USAGE: Allowed within WinGD general usage guidelines
Monitor	SPECIFIC USAGE: Allowed continuously for maximum time limit stated
DF validated	SPECIFIC USAGE: Allowed but with increased frequency of Piston Underside Inspections (PUIs) and Cylinder Scrape Down Oil Analysis.
	SPECIFIC USAGE: Allowed without restriction within WinGD general usage guidelines. Cylinder Oil has passed full validation trial running on LNG
<b>NOTES: 1)</b>	Multiple blending combinations with different system oils are possible. Not all of them are validated. Speak to the supplier for more data about the validated products.
<b>NOTES: 2)</b>	Only valid for products formulated and blended with Gp. I base oils
It is the responsibility of the NOL holder to apply for renewals of NOLs prior to expiry. Expired NOLs will be removed from the list if no renewal application has been made in good time. In this respect, the list will be reviewed annually and expired NOLs, and those not currently in reissuance process, will be removed.	



## List of validated system lubricating oils

Oil supplier	Oil name	BN
Aegean	Alfasys 305	5
ARG	ARGuard Marine ASC 3005	5
AVIN	Panoil M 530	5
Castrol	CDX 30	5
Cepsa	Ciconia 30	5
Chevron	Veritas 800 Marine 30	5
Cosmo	Marine 3005	5
CPC	Marilube Oil AC-30 Plus	5
CPC	Marilube Oil AC-30 SP	5
Cyclon Hellas	Armor Medium SAE 30	5
Eneos	Marine S30	7
ENI	Cladium 50	5
ExxonMobil	Mobilgard 300 C	9
Four C Marine Lubricants	Athen Marine System Oil 3005	5
GasPromNeft	Ocean CS0 7	7
Gulf Oil Marine	GulfSea Superbear 3006	6
Gulf Oil Marine	GulfSea Superbear 3006 S	5
Gulf Oil Marine	GulfSea Superbear 3008	8
Hyundai	Xteer SO 3005	5
IndianOil	Servo Marine 0530	5
Lubmarine (TotalEnergies)	Atlanta Marine D 3005	5
LUKOIL	Navigo 6 CO	6
Motor Oil Hellas	EMO Panoil M 530	5
Pertamina	Medripal 307	7
Petrobras	Marbrax CAD-308	8
PetroChina	KunLun DCC3008	8
Petronas	DISROL 5 LS30	5
Premier Six	Opt-Max Shieldguard 3008	8
Puma Energy	Marine System Oil TBN 5 SAE 30	5
Shell	Melina S30	5
SINOPEC	Marine System Oil 3005	5
SINOPEC	Marine System Oil 3006	6
SINOPEC	Marine System Oil 3008	8
SINOPEC	Marine System Oil 3008N	8
SK	Supermar AS <sup>1)</sup>	5

NOTES: 1) Multiple formulations of this product are available. Not all of them are validated. Speak to the supplier for more data about the validated products.

## Appendix

### BN140/145 cylinder oils for fuels with a sulphur content higher than 3 %

Evidence from engines with a range of bore sizes shows that the performance limits of BN100 oils are being reached when used in combination with >3.00 % S fuels. This is mostly evidenced through lacquering and cold corrosion on liners.

- An increase in oil feed rate has shown little to no improvement in most cases.
- In some cases, maximum feed rate settings have been reached, and cannot be further increased.
- Furthermore, excessive feed rates may have negative effects over time:
  - On the piston running & other components (e.g. Ca deposits)
  - Wasting of cylinder oil for the customer where unused cylinder oil is scraped down into the piston underside
  - Scraping down large amounts of fresh oil makes the results of the scrape down oil analysis less useful
- WinGD has gathered information from field validation trials to support this
- Customers have worked with WinGD to monitor and assess the situation

*Therefore, a cylinder oil with a higher BN has been considered necessary.*

During oil validation trials of BN140/145 products WinGD confirmed that these lubricants perform very well. The main improvements when compared to BN100 oils is further increased cleanliness of the combustion chamber and substantially lower feed rates that are achieved. This presents in an overall benefit for the operators: cleaner components, lower risks for cold corrosion and lower feed rates for reduced OPEX costs.

**Note:** Engage with the supplier in advance to make sure the oil is available in time. Batches might be produced on demand only.