



Heavy Duty Diesel Engine Oils



Consult your AMALIE® Regional Manager for specific pack sizes & product availability.

XLO Ultimate Synthetic-Blend 15W40 • XLO Ultimate Synthetic-Blend 10W40 • XLO Ultimate Synthetic-Blend 10W30
XLO Ultimate Synthetic-Blend 20W50 • XLO Ultimate Full-Synthetic 5W40 • XLO Heavy Duty Fleet • HPO Turbo – ALAS+



AMALIE XLO Ultimate CK-4 Engine Oils are premium high performance diesel engine oils utilizing the latest in engine oil additive technology to offer the ultimate protection of your engine. Designed to meet or exceed the latest OEM and API CK-4 requirements, they are backwards compatible to previous OEM and API specifications such as CJ-4, CI-4, CI-4+, and CH-4. Available as a synthetic blend (10W-30, 15W-40, 10W-40 and 20W-50 SAE Grades) or full synthetic 5W-40, these oils are specially designed to protect EGR/Low-Emission Diesel Engines while maximizing the durability of Diesel Particulate Filters (DPF's). The 5W-40, 10W-40, 15W-40 and 20W-50 also meet API SN specification requirements for mixed fleet use. They are recommended for use in a wide range of heavy-duty applications and operating environments found on-and off-highway, including engines operating under heavy loads. They are formulated for extended service/extended drain when operated under typical operating conditions. AMALIE XLO Ultimate CK-4 Engine Oils offer improved TBN retention, lower oil consumption, greater wear protection, oxidation stability, excellent shear stability, and reduced high temperature deposits.

These new oils are API CK-4 Service Classification registered and meet prior API specifications for CJ-4, CI-4 Plus, CI-4, CH-4 as well as API SN, SL, SJ, and SH. These oils are registered Mack EOS 4.5 and meet prior specifications for EO-N Premium Plus, EO-M Plus, and EO-M. This oil is also registered to Detroit Diesel 93K222 and meets 93K218, 93K215, and 93K214; Cummins CES 20086, 20081, 20078, 20077, 20076. This oil meets Allison C4 and C3 fluids and Caterpillar ECF-3, ECF-2, ECF-1, TO-2. This oil is also registered or meets the following European and Asian approval standards: Volvo VDS-4.5, VDS-4, VDS-3, VDS-2, Global DHD-1; JASO DH-2 and DH-1. This oil is engineered to be robust enough to meet MB 228.5, 228.3, 228.1, 227.1; Man 3575; MTU Type 2.1; ACEA E9, E7, E4, E2, A3/B4, A3B3; and Renault RLD-4. This highly advanced diesel engine oil is recommended for use in MIL L 2104-H, MIL L 46152-E, and CID A-A-52306 applications.

AMALIE XLO Heavy Duty Fleet Engine Oils have been improved and upgraded to be among the best and most efficient diesel engine oils available to the fleet market. New additive systems and rigorous laboratory and field testing have proven that these new AMALIE XLO Heavy Duty Fleet Engine Oils are up to the task of protecting your engine; helping your engine operate within the new emission and pollution requirements as well as meeting or exceeding the OEM requirements for almost every new engine being built by every engine manufacturer worldwide. The new high performance AMALIE XLO Heavy Duty Fleet Engine Oils are specifically engineered to meet the manufacturers' prerequisite for performance, TBN, and balanced low ash requirements. They will deliver superior long lasting protection for both turbocharged and naturally aspirated diesel and gasoline engines, including those engines that have exhaust gas recirculation (EGR) systems. They are formulated for extended service/extended drain when operated under typical operating conditions and are engineered to help promote fuel economy.

These new oils meet or exceed the CI-4/SL API Service Classifications as well as the CH-4, CG-4, CF-4, CF-2, CF and CD API Service Classifications; Global DHD-1; and JASO DH-1. AMALIE XLO Heavy Duty Fleet engine oils are recommended for use wherever MIL L 2104-G and MIL L 46152-E are recommended; wherever Allison C-3 and C-4 fluids and Caterpillar TO-2 are recommended or required; and are recommended for use wherever the following European approval standards are specified: ACEA A5/B5, A3/B4, A3/B3, A1/B1 / E7, E6, E5, E3, E2 and E1.

AMALIE HPO Turbo Motor Oils* are high quality detergent motor oils recommended for diesel and gasoline engines manufactured by American, European, Korean, Japanese and other engine manufacturers from around the world. These oils are manufactured to meet the requirements of API SG CF-4, CF-2, CF / SG, SF as well as ACEA A3/B4, A3/B3, A1/B1, E3, E2, and E1. They are manufactured from select blends of high quality base oils and additives to promote long engine life, protect against rust, corrosion and harmful oxidation, and are designed to help reduce engine wear and oil consumption.

The AMALIE HPO Turbo Multi-grade Motor Oils are coupled with a premium viscosity modifier to assure easy starts in cold climates, protect against oil thinning at higher temperatures, and are formulated to provide fuel savings to the consumer.

**The AMALIE HPO Turbo Motor Oil product line is for export only and minimum order requirements apply.*

AMALIE ALAS+ (AMALIE Lubricant Analysis System) is AMALIE's used oil analysis program designed exclusively for AMALIE XLO and AMALIE XLO Ultimate customers. It allows them to get an inside look at what is going on in their engine. ALAS+ measures wear metals, contaminants, viscosity and other used oil characteristics to help prevent component failure, determine optimum drain intervals and help to reduce fuel costs. ALAS+ is a comprehensive analysis program using the most modern laboratory equipment available, that provides valuable information about your engine's condition every time the oil is changed for the life of the equipment. ALAS+ supplies clear concise analytical reports in a timely fashion that include the necessary data needed to help you successfully manage your highly expensive equipment investment.

Some performance levels are limited by viscosity grades. Please consult the Performance Application Chart, the Inspection Data Table for the appropriate product or contact your Regional Manager for more complete information and recommendations. Consult your Regional Manager for specific pack sizes and product availability.

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TYPICAL INSPECTION DATA

	API Gravity	Flash Point C.	Viscosity cSt @100C	Viscosity cSt @40C	VI	Pour Point, C.	TBN (D-2896)
XLO Ultimate Synthetic Blend							
20W-50	28.6	229	18.0	160	125	-27	10
15W-40*	29.7	220	15.5	116	140	-33	10
10W-40*	31.1	215	15.2	98.75	160	-33	10
10W-30*	30.8	220	12.2	83.3	142	-36	10
XLO Ultimate Full Synthetic							
5W-40*	32.8	220	14.4	88.7	170	-42	11
XLO Heavy Duty Fleet							
10W-30	29.5	205	10.40	68.4	140	-36	10
15W-40	28.5	210	15.00	101.0	155	-30	10
20W-50	27.0	220	17.50	158.0	122	-24	10
10W	129.5	190	6.60	37.0	140	-33	10
30	28.5	220	11.20	88.0	116	-21	10
40	28.0	230	14.50	133.0	109	-18	10
50	27.5	240	18.50	192.0	108	-12	10
HPO Turbo**							
5W-30	30.5	190	10.20	60.0	157	-39	report
10W-30	29.5	200	10.50	69.0	140	-35	report
10W-40	30.0	200	13.50	97.0	145	-32	report
15W-40	29.0	210	14.00	100.0	135	-27	report
20W-50	28.9	220	18.00	165.0	125	-18	report
25W-50	29.6	230	18.00	165.0	125	-18	report
25W-60	26.4	240	24.00	300.0	100	-15	report
10	29.5	190	5.90	37.0	100	-15	report
30	28.5	210	11.80	103.0	100	-15	report
40	28.0	220	14.60	141.0	100	-12	report
50	27.5	230	17.90	189.0	100	-12	report

* Also meets 1% maximum ash requirements

** HPO Turbo Motor Oil Product line is for export only, minimum order requirements may apply.

PERFORMANCE APPLICATION CHART

SPECIFICATIONS	XLO Ultimate Synthetic Blend 15W-40/10W-40/10W-30/20W-50	XLO Ultimate Full Synthetic 5W-40	XLO 15W-40 HD Fleet	XLO 10W-30 HD Fleet	XLO 10W, 30, 40, 50 HD Fleet	HPO Turbo
API: CK-4/SN [4]	√	√	-	-	-	-
CJ-4, CI-4 Plus	√	√	-	-	-	-
CI-4, CH-4, CG-4	√	√	√	√	-	-
CF-4	√	√	√	√	-	√
CF-2 [1] CF/CD	√	√	√	√	√	√
SL/SJ/SH [2]	√	√	√	√	√	-
Allison: C-4, C-3	√	√	√	√	√	-
Mil-PRF-2104H(AA52306)	√	√	√	√	√	-
Mil-L-2104-B, Mil-L-46152	√	√	√	√	√	√
Caterpillar: TO-2	√	√	√	√	√	-
ECF-3	√	√	-	-	-	-
ECF-2	√	√	√	√	-	-
ECF-1, SEBU 6250	√	√	√	√	-	-
Mack: EOS-4.5	√	√	-	-	-	-
EO-N Premium Plus 07, 03	√	√	-	-	-	-
EO-N Premium Plus	√	√	√	√	-	-
EO-M, EO-M Plus	√	√	√	√	-	-
Cummins: CES 20086	√	√	-	-	-	-
CES 20081, 20078, 76, 71	√	√	√	√	-	-
CES 20077, 72	√	√	√	√	-	-
JASO: DH-2	√	√	-	-	-	-
DH-1	√	√	√	√	-	-
Global: DHD-1	√	√	-	-	-	-
Navistar: TSI-99-12	√	√	√	√	SAE 30	-
Detroit Diesel: 93K222, 93K218,	√	√	-	-	-	-
93K215, 93K214	√	√	-	-	-	-
7SE270 [3]	√	√	√	√	√	-
Daimler Chrysler: 228.31	√	√	-	-	-	-
DC(MB) 228.3, 228.2	√	√	√	√	-	-
DC(MB) 228.1, 228.0	-	-	-	-	-	mono
ACEA: A5/B5, A3/B4, A3/B3, A1/B1	√	√	√	√	A2,B2	A3/B4
E9, E7, 6, 5, 4, 3, 2, 1	√	√	√	√	E1,2	E1,2,3
Volvo: VDS-4.5	√	√	-	-	-	-
VDS-4	√	√	√	√	-	-
VDS-3	√	√	√	√	-	-
Renault: RDL-4, RDL-3	√	√	-	-	-	-
Man: 3575, 3275/3277	√	√	-	-	-	-
270/271	√	√	√	√	-	-
MTU: Type 2.1, Type II, Type III	√	√	√	√	-	-
Type I	√	√	√	√	√	-

NOTES:

[1]= CF-2 primary recommendation for two-cycle engines; single grades.

[2]= Above Preferred Phosphorus level of API SL/SJ (10W-30).

[3]= Multigrade oils recommended for four-cycle engines, single grade oils for two-cycle engines

[4]=Does not include 10W-30 grade

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The data presented herein are believed to be accurate; however, Oil Company AMALIE OIL COMPANY shall not be liable for its content and makes no warranty with respect thereto.