



# Makina Grease & Lubricants Manufacturing L.L.C.

## Ultra HD PLUS

### Description

Makinalube Ultra HD PLUS is a high quality multi-grade SHPD oil developed to meet the latest severe requirements of the API Engine Service Classification CH-4/SL. It also meets MB 229.1, 228.3 and 228.1, MAN 271 and Volvo VDS-2 for extended drain periods. Makinalube Ultra HD PLUS provides superior performance, over API CG-4, in terms of soot handling, soot related wear and increased oil viscosity.

Makinalube Ultra HD PLUS is blended from highly refined base stocks and selected additives to provide excellent detergency, dispersancy and anti-wear properties. The base number of 12 provides the necessary reserve alkalinity to protect vital engine parts against corrosion and premature engine wear.

Additional quality features are:

- Reduced piston deposits
- Protection against cylinder bore polishing
- Reduced oil consumption
- Reduced filter plugging
- Less oil oxidation and thickening
- Neutralizes corrosive acids

### Application

Makinalube Ultra HD PLUS meets API CH-4/SL and the requirements of most high-speed diesel engines produced around the world. This high quality multi-grade motor oil meets or exceeds the requirements of:

- API CH-4/SL
- ACEA E3-98. B3-98. A3-98
- MERCEDES BENZ 229.1. 228.3.
- MAN 271
- MTU Type 2
- VOLVO VDS-2
- Cummins CES 20.071/2

Makinalube Ultra HD PLUS is highly recommended for use in most high-speed diesel engines. The multi-grade motor oil has a proven advantage of an increased reduction in piston deposits, cylinder wear, oil consumption and oil thickening in major original equipment manufacturer (OEM) tests. Super High Performance Diesel engine oil - SHPD - is recommended by OEMs such as Mercedes Benz, MAN, Volvo, Caterpillar and others for use at longer drain intervals than conventional high quality diesel engine oils.

Makinalube Ultra HD PLUS gives good performance in both low and high sulphur fuels and it is recommended for use at ambient temperatures as low as – 20°C.



# Makina Grease & Lubricants Manufacturing L.L.C.

## Typical Characteristics

PROPERTIES	UNITS	TEST METHOD	VALUE				
SAE Grade		DIN 51 511	15W-40	15W-50	20W-40	20W-50	20W-60
Density @ 15 °C	kg/m <sup>3</sup>	ASTM D-4052	888	879	888	891	893
Viscosity @ - 15 °C	mPa.s	ASTM D-5293	-----	-----	8000	7000	7000
Viscosity @ - 20 °C	mPa.s	ASTM D-5293	6000	6000	-----	-----	-----
Viscosity @ 100 °C	mm <sup>2</sup> /s	ASTM D-445	15.4	18.8	15.4	18.1	23.5
Viscosity Index		ASTM D-2270	133	147	110	135	139
Flash Point, COC	°C	ASTM D-92	240	238	230	236	230
Pour Point	°C	ASTM D-97	- 27	-27	-21	-21	-21
Sulphated Ash	% wt.	ASTM D-874	1.59	1.59	1.59	1.59	1.59
Base Number	mg KOH/g	ASTM D-2896	12	12	12	12	12