The state of the art wear-reducing additives contained within this synthetic engine oil are engineered to combine stable oil performance with excellent engine protection, resulting in extended drain intervals without ever compromising on engine protection. The ultra-thin protective oil film retains its excellent protective properties over a wide range of temperatures. Furthermore, the engine oil has high shear resistance, cutting down on maintenance costs by further extending drain intervals.

## **APPLICATIONS**

Both off- and on-road heavy-duty applications with or without turbochargers, superchargers or after-treatment systems can be serviced with this engine oil. It meets the specifications of a wide range of high-demanding specifications including the Scania LDF-4. Thanks to its backward compatibility, this versatile engine oil can be used in both modern and older engines. It is compatible with emission control technology EURO IV, V and VI for trucks; as well as stage IIIB, IV and Tier 4i, 4f for heavy-duty off-road.

#### **FEATURES**

Aftertreatment protection: full aftertreatment system protection. Fuel economy: superior fuel economy and CO2 reduction. Total engine protection: outstanding engine cleanliness and durability.

### **SPECIFICATIONS**

ACEA	E11	DETROIT DIESEL	DFS 93K218
ACEA	E4	DETROIT DIESEL	DFS 93K222
ACEA	E6-16	DEUTZ	approval DQC-IV-18 LA
ACEA	E7	DEUTZ	DQC IV-10 LA
ACEA	E8	DEUTZ	DQC-IV-10
ACEA	E9-16	DEUTZ	TTCD
API	approval CK-4	FORD	WSS-M2C213-A1
API	CI-4	IVECO	18-1804 Classe TFE
API	CI-4+	IVECO	18-1804 Classe TLS E6
API	CJ-4	IVECO	18-1804 Classe TLS E9
API	SN	LIEBHERR	LH-00-ENG LA
JASO .	DH-1-17	LIEBHERR	LH-00-ENG3A LA
JASO .	DH-2-17	LIEBHERR	LH-00-ENG5C LA
JASO .	DL-0-17	MACK	approval EO-S 4.5
CATERPILLAR	ECF-3	MACK	EO-M PLUS
CUMMINS	CES 20077	MACK	EO-N
CUMMINS	CES 20081	MACK	EO-N Premium Plus
CUMMINS	CES 20086	MACK	EO-O Premium Plus
DAF	EXTENDED DRAIN	MAN	approval M3677
DAF	PSQL 2.1 E	MAN	approval M3777
DAF	PSQL 2.1 E LD	MAN	M3271-1
DAIMLER TRUCK	approval DTFR 15C110	MAN	M3277
DAIMLER TRUCK	approval DTFR 15C120	MAN	M3477
DAIMLER TRUCK	DTFR 13D110	MAN	M3575
DAIMLER TRUCK	DTFR 15C100	MAN	M3691

#### CHAMPION CHEMICALS NV

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MAN	M3775	RENAULT	RLD
MB	228.31	RENAULT	RLD-2
МВ	228.5	RENAULT	RLD-4
МВ	228.51	RENAULT	RXD
МВ	228.52	SCANIA	approval LDF-4
МВ	235.28	SCANIA	LDF-3
MTU	Oil Category 2.1	VOITH	Retarder Oil Class B
MTU	Oil Category 3	VOLVO	approval VDS-4.5
MTU	Oil Category 3.1	VOLVO	VDS-3
RENAULT	approval RLD-3	VOLVO	VDS-4
RENAULT	RGD		

# **TYPICAL CHARACTERISTICS**

Test	Method	Unit	Average results
Density at 15°C	ASTM D4052	g/ml	0.858
Kinematic viscosity at 40°C	ASTM D445	mm²/s	70.8
Kinematic viscosity at 100°C	ASTM D445	mm²/s	12.2
Viscosity index	ASTM D2270		171
B.N. (HCLO4 method)	ASTM D2896	mg KOH/g	13.4
Pour point	ASTM D6892	°C	-39
Sulfated Ash	ASTM D874	Mass %	1.0
Flash Point COC	ASTM D92	°C	214

We reserve the right to alter the general characteristics of our products in order to let our customers benefit of the latest technical evolutions.

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