



FUELS · LUBRICANTS · CHEMICALS

THOMAS PETROLEUM, LTD.

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Lafayette, LA

HDMO CI-4 SAE 15W-40

CUSTOMER BENEFITS

HDMO delivers value through:

- **One oil for both diesel and gasoline services**, minimizing the chance of misapplication.
- **Reduced inventory** — Simplified inventory and dispensing systems since there is no need to keep large inventory of oils to meet different OEM requirements.
- **Long oil life** — Good oxidation stability protects against oil thickening and thermal breakdown.
- **Keeps vital engine parts clean** as a result of effective detergent and dispersant additives, providing excellent deposit and sludge control.
- **Minimal deposits** due to oil on combustion chamber, valves, and reduced stuck or broken rings.
- **Increased engine life** due to protection of heavily loaded parts from scuffing and wear.
- **Extended filter life** — Help extend filter life by dispersing the soot that clogs filters and increases valve train wear.

FEATURES

HDMO CI-4 - high quality, mixed fleet motor oils that meet the performance requirements of all four-stroke gasoline engines and all naturally aspirated, turbocharged, and supercharged diesel engines in any type of service.

These multipurpose engine oils are manufactured using select high viscosity index **Group 2 base oils** and additives that protect against sludge, varnish, ash deposits, wear, oxidation, foam, corrosion, and rust.

HDMO CI-4 provides excellent sludge formation control (important for cold engine operation).

They decrease deposit buildup resulting from engine operation at high temperatures, especially in the piston and ring area, minimize varnish formation, and keep vital engine parts clean.

They flow readily at low temperatures for cold starting with reduced wear.

They also provide corrosion protection and resist oxidation at high temperatures.

APPLICATIONS

HDMO CI-4 is recommended for four-stroke gasoline engines, and all two- and fourstroke naturally aspirated, turbocharged, and supercharged diesel engines in all types of service. They are ideally suited for mixed commercial fleets, farm machinery, construction equipment, marine and other off-highway applications.

HDMO CI-4 SAE 15W-40 can be used in powershift transmissions requiring Caterpillar **TO-2** or **Allison C-4 fluids**.

HDMO CI-4 SAE 15W-40 meets the ECF-1 specification for Caterpillar's ACERT™ engine technology.

HDMO CI-4 SAE 15W-40 meets the Mack EO-N Premium Plus 03 specification which is based on soot dispersency and shear performance.

HDMO CI-4 SAE 15W-40 Oils meet:

- **API Service Categories**
 - **CI-4**, CH-4, CG-4, CF-4
 - CF, CD1, SH, SG1
 - SL, SJ
 - CE1
- **major diesel engine manufacturers' requirements**
 - Caterpillar ECF-1
 - Caterpillar TO-2
 - Cummins CES 20078, 20077, 20076, 20072
 - MTU Category 1 and 2
 - Engine Manufacturers Association (EMA) LRG-1
 - Global DHD-1
 - Man 271, 3275
 - DDC Type 1 and 2
 - Mack EO-N, EO-M
 - Mercedes Benz 228.1, 228.3
 - Volvo VDS-3, VDS-2, VDS
- **manufacturers' performance requirements**
 - Chrysler MS 6395-G
 - Ford ESE-M2C153-E
 - General Motors GM 6094-M

Typical Test Data - HDMO CI-4 (multigrade)

SAE Grade	15W-40
API Gravity @ 60°F	28.0
Viscosity, Kinematic cSt at 40°C	113
cSt at 100°C	15.2
Viscosity Index	140
Viscosity, Cold Crank (CCS), ASTM D 5293, -20°C/cP(centiPoise)	5200
Flash Point, °C(°F)	216(420)
Pour Point, °C(°F)	-32(-25)
Sulfated Ash, wt %	1.28
TBN	10.2

The values shown are typical of current production. Some are controlled in the manufacturing process, while others are not. All of them may vary within tolerable ranges.



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Competitive Comparison

Comparable means that the products have similar performance in the applications for which they were designed. It does not mean that they are compatible. When replacing lubricants, our recommendation is to drain and flush the system prior to filling with the new product.

	Thomas HDMO CI-4 SAE 15W-40	*Chevron RPM® Heavy Duty Motor Oil SAE 15W-40	**Mobil Delvac® 1300 Super 15W- 40
Typical Test Data			
SAE Grade	15W-40	15W-40	15W-40
API Gravity @ 60°F	28.0	28.7	29.2
Viscosity, Kinematic			
cSt at 40°C	113	125	123
cSt at 100°C	15.2	15.5	15.6
Viscosity, Cold Crank, °C/poise	-20/52	-20/65	-20/60
Viscosity Index	140	130	133
Flash Point, °C (°F)	216(420)	230(446)	230(446)
Pour Point, °C (°F)	-32(-25)	-32(-25)	-30(-22)
Sulfated Ash, Wt. %	1.28	1.37	1.3
Base Number, ASTM D 2896	10.2	11.6	12
Phosphorus, Wt. %	1250 ppm	0.137 (1370 ppm)	-
Zinc, Wt. %	1450 ppm	0.148 (1480 ppm)	-

Typical test data are average values only. Minor variations which do not reflect product performance are to be expected in normal manufacturing.

*Source - <https://www.cbest.chevron.com/msdsServer>

**Source - <http://www.exxonmobil.com/pdssearch/search.asp>