



## Product Data Sheet

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# Dakota Heavy Duty 10W-30 CJ-4

## Extra High Performance Diesel Engine Oil

### PRODUCT DESCRIPTION

Dakota Heavy Duty 10W-30 CJ-4 is an extra high performance diesel engine oil that helps extend engine life in the most severe on and off-highway applications while delivering outstanding performance in modern, high-output, low-emission engines including those with Exhaust Gas Recirculation (EGR) and After-treatment Systems with Diesel Particulate Filters (DPFs) and Diesel Oxidation Catalysts (DOCs). Fully backward compatible, Dakota Heavy Duty 10W-30 CJ-4 will also deliver the same exceptional performance in older conventional engines. As a result, they meet or exceed the requirements of the API CJ-4, CI-4 PLUS and CH-4 service categories as well as key OEM requirements for 2007 engines.

Dakota Heavy Duty 10W-30 CJ-4 is the result of extensive cooperative development work with major OEMs and is recommended for use in a wide range of heavy duty applications and operating environments found in the trucking, mining, construction, quarrying, and agricultural industries. These products will provide outstanding protection in the most demanding diesel engines of Caterpillar, Cummins, Detroit Diesel, Mack, Mercedes Benz, Navistar, Volvo, and others. Choice Heavy Duty 10W-30 CJ-4 also meets the requirements of the API SM specification for gasoline engines and mixed fleets.

### FEATURES AND BENEFITS

As engine designs change in response to tougher emissions restrictions imposed by the EPA, the performance demand on engine lubricants likewise increases in order to compensate for the harsher environments that new engine designs bring with them. New engines (model-year 2007 and beyond) will come equipped with after-treatment devices installed in the engine exhaust stream which will require the use of both API CJ-4 oils and ultra-low sulfur fuels to function properly. Additionally, new engines using EGR will generate even higher levels of acid, soot and heat than older EGR engines due to substantially increased EGR rates compared to previous EGR designs.

Dakota Heavy Duty 10W-30 CJ-4 is formulated with an optimized base-oil technology containing severely hydro-processed base stocks and a mixed detergent system to deliver cutting-edge performance in both new and older engines. In addition to assuring excellent control of oil thickening due to soot build-up and outstanding TBN retention for long drain intervals, the advanced technology also provides outstanding resistance to oil consumption, oxidation, corrosive and abrasive wear, and high temperature deposits.

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### Key benefits include:

Features	Advantages and Potential Benefits
Superior soot-viscosity control	Greater engine efficiency, long engine life and long oil life
Outstanding thermal and oxidative stability	Reduced low temperature sludge build-up and high temperature deposits
Excellent oil consumption control	Lower oil costs due to less make-up oil during operation
Outstanding TBN reserves	Improved corrosion protection and extended drain intervals for both new and old engines using either low (500ppm) or ultra-low (15ppm) sulfur diesel fuel
Stay-in-grade shear stability	Maintains viscosity in severe, high temperature service for greater wear protection and long engine life
Excellent low temperature pumpability	Faster oil flow and reduced wear during engine start-up in low temperatures
Superb resistance to corrosive and abrasive wear	Long life of critical wear surfaces
Component compatibility	Long gasket, seal, and after treatment (DPF and DOC) life
Meets demanding specifications of key OEMs and latest API gasoline service category	One engine oil for mixed fleet operations

### APPLICATIONS

- Specifically recommended for the latest low-emissions, high performance diesel applications equipped with after-treatment systems using Diesel Particulate Filter (DPF) and Diesel Oxidation Catalyst (DOC) technologies.
- Recommended for high-performance diesel applications including turbo-charged designs featuring EGR Technology and diesel applications using older, naturally aspirated conventional designs.
- On-highway heavy-duty trucking and off-highway including: construction, mining, quarrying, and agriculture.
- On-highway applications operating in both high speed/high load and short haul pick-up/delivery.
- Off-highway applications operating in severe low speed/heavy load conditions using either low (500ppm) or ultra low (15ppm) sulfur fuels.
- Recommended for use in high performance gasoline engines and mixed fleet operations.
- Diesel-powered equipment from American and European OEMs

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## SPECIFICATIONS AND APPROVALS

<b>Dakota Heavy Duty 10W-30 CJ-4 Meets or Exceeds the requirements of:</b>	
API CJ-4, CI-4 PLUS, CI-4, CH-4, SM, SL	X
Caterpillar ECF-3	X
Cummins CES 20081	X

<b>Dakota Heavy Duty 10W-30 CJ-4 has the following builder approvals:</b>	
Volvo VDS-4, VDS-3, VDS-2	X

<b>Dakota Heavy Duty 10W-30 CJ-4 is recommended for applications requiring:</b>	
API CF	X

## TYPICAL PROPERTIES

SAE Grade	10W-30
Viscosity, ASTM D 445	
cSt @ 40°C	79
cSt @ 100°C	11.9
CCS, cP, ASTM D 5293	6500 @ -25°C
MRV, cP, ASTM D 4684	27,000 @ -30°C
HTHS @ 150°C, cP, ASTM D4683	3.6
Viscosity Index, ASTM D 2270	145
Sulfated Ash, wt%, ASTM D 874	1.0
Total Base #, mg KOH/g, ASTM D 2896	10.5
Pour Point, °C, ASTM D 97	-30
Flash Point, °C, ASTM D 92	230
Density @ 15°C kg/l, ASTM D 4052	0.869

## HEALTH AND SAFETY INFORMATION

For recommendations on safe handling and use of this product, please refer to the Material Safety Data Sheet.

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