



**PREMIUM  
LUBRICANTS**

# **D-MO<sup>®</sup>**

## **DIESEL MOTOR OILS**

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D-MO<sup>®</sup> (Diesel Motor Oil) products are recommended for all high-output, turbo-charged, four-stroke diesel motors with advanced after-treatment devices found in current emission-compliant equipment. D-MO is uniquely blended for both on- and off-road diesel motor applications and stationary engines. D-MO products are formulated to meet the industry's most stringent specifications, including the American Petroleum Institute's CK-4 performance-specification. As well, the latest specifications from OEM's Cummins, Detroit Diesel, Volvo and Mack.

## **TECHNICAL DATA SHEETS**

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# D-MO®

10W, 30, 40, 50

## PRODUCT DESCRIPTION

D-MO® (Diesel Motor Oil) MONOGRADES are premium mineral-based, heavy-duty motor oils. They have been formulated to provide superior performance in engines fueled by diesel, gasoline and propane. D-MO® MONOGRADES are suitable for use in numerous on-road and off-road applications.

## PERFORMANCE FEATURES

- Reduces engine deposits
- Wear protection for engine durability
- Oxidation stability for longer service life
- Low-ash formulation limits the formation of deposits on critical engine components

## APPLICATIONS

D-MO® MONOGRADES are recommended for older two- and four-stroke diesel and gasoline engines requiring monograde motor oils. D-MO® MONOGRADES have a wide variety of uses and are excellent choices in applications calling for a monograde motor oil to be used in transmissions (Allison and Caterpillar), mobile hydraulic systems (D-MO® 10W and 30 are suitable for use in applications calling for Caterpillar TO-2) and yard implements.

## TECHNICAL PROPERTIES

The values listed below are typical of current production. As variations may occur, these numbers do not constitute a specification.

PROPERTIES	TEST METHODS	D-MO®			
		10W	30	40	50
Kinematic Viscosity cSt @ 40°C	ASTM D445	36.4	93.0	134.5	203.1
Kinematic Viscosity cSt @ 100°C	ASTM D445	6.3	11.1	13.8	18.3
Viscosity Index	ASTM D2270	124	105	99	99
CCS (Cold Cranking) cP @ °C	ASTM D5293	3,201 @ -25°	—	—	—
MRV (Mini Rotary Visc.) cP @ °C	ASTM D4684	6,700 @ -30°	—	—	—
HTHS (High Temp/High Shear) cP @ 150°C	ASTM D4683	—	3.4	4.1	5.0
Pour Point, °C	ASTM D97	-45°	-30°	-30°	-18°
TBN	ASTM D2896	7.3	7.4	7.5	7.9
Sulphated Ash wt %	ASTM D874	1.0	1.0	1.0	1.0

# D-MO®

10W, 30, 40, 50

## PERFORMANCE SPECIFICATIONS

D-MO® is approved and/or recommended and backed by Federated Co-operatives Limited guarantee for use in the following applications:

INDUSTRY/OEM	SPECIFICATIONS
API	CF (10W), CF, CF-2/SL (30, 40), CF and CF-2 (50)
ALLISON	C-4/C-3
CATERPILLAR	Transmissions TO-2, mobile hydraulic systems calling for TO-2 (10W, 30)

## SAFETY DATA SHEETS

Product-specific safety data sheets (SDS) can be obtained by contacting your local retail Co-op or Federated Co-operatives Limited (see contact information below) or by going online at [www.fuel.crs](http://www.fuel.crs)

## PRODUCT SELECTION

Product availability can vary by location. Please contact your local retail Co-op for further details.

PRODUCT SIZES	D-MO®			
	10W	30	40	50
1 L Bottle		✓		
5 L Bottle	✓	✓		
10 L Bottle	✓	✓		
20 L Pail	✓	✓	✓	✓
110 L Drum				
205 L Drum	✓	✓	✓	
1000 L Tote	✓	✓		

## RECYCLING OF USED LUBRICANTS AND CONTAINERS

Please protect the environment when disposing of petroleum products. All products should be taken to an authorized collection facility or picked up by a qualified organization. This ensures the products will be disposed of in an environmentally sensitive manner. For additional information on used-oil recycling programs, please see the following:

- Saskatchewan – [www.usedoilrecyclingsk.com](http://www.usedoilrecyclingsk.com)
- Alberta – [www.usedoilrecyclingab.com](http://www.usedoilrecyclingab.com)
- British Columbia – [www.bcusedoil.com](http://www.bcusedoil.com)
- Manitoba – [www.usedoilrecycling.com/en/mb](http://www.usedoilrecycling.com/en/mb)

## CONTACT INFO

For more information on this or any other CO-OP® lubricant product, please contact your local retail co-operative or Federated Co-operatives Limited.

[petroadmin@fc.crs](mailto:petroadmin@fc.crs) • [www.fuel.crs](http://www.fuel.crs) • [www.agro.crs](http://www.agro.crs)

CO-OP® and D-MO® \*Registered trademark of Federated Co-operatives Limited, Saskatoon S7K 3M9





# D-MO®

10W-30, 15W-40

## PRODUCT DESCRIPTION

D-MO® (Diesel Motor Oil) is designed to exceed the tests required for the new API CK-4 specification for all naturally aspirated and high-output turbo-charged, four-stroke diesel engines. These products are formulated to outperform standard CJ-4 oils in the areas of fuel economy, wear protection and oxidative stability. They are designed for low-emission engines using advanced exhaust after-treatment devices such as diesel particulate filters (DPFs) and selective catalytic reduction (SCR) systems.

## PERFORMANCE FEATURES

- Higher level of performance than CJ-4 oils
- Enhanced wear protection
- Reduces oxidative thickening
- Greater viscosity retention
- Improved injector screw wear protection
- Extended oil-drain intervals with oil analysis
- Deposit formation reduction
- Increased fuel economy
- Greater contaminate handling
- Oil durability

## APPLICATIONS

D-MO® is recommended for both on- and off-highway applications, including agriculture, trucking, construction, mining and the oilfield. Both are fully backwards compatible with previous API specifications and can also be in used in hydraulic applications when an SAE multi-grade oil is required.

## TECHNICAL PROPERTIES

The values listed below are typical of current production. As variations may occur, these numbers do not constitute a specification.

PROPERTIES	TEST METHODS	D-MO®	
		10W-30	15W-40
Kinematic Viscosity cSt @ 40°C	ASTM D445	79.4	108.5
Kinematic Viscosity cSt @ 100°C	ASTM D445	11.6	15.3
Viscosity Index	ASTM D2270	138	148
CCS (Cold Cranking) cP @ °C	ASTM D5293	6,069 @ -25°	3,952 @ -20°
MRV (Mini Rotary Visc.) cP @ °C	ASTM D4684	19,300 @ -30°	14,100 @ -25°
HTHS (High Temp/High Shear) cP @150 °C	ASTM D4683	3.6	4.2
Pour Point, °C	ASTM D97	-39°	-39°
TBN	ASTM D2896	9.7	9.3
Sulphated Ash wt. %	ASTM D874	0.9	1.0

# D-MO®

10W-30, 15W-40

## PERFORMANCE SPECIFICATIONS

D-MO® is approved and/or recommended and backed by Federated Co-operatives Limited guarantee for use in the following applications:

INDUSTRY/OEM	SPECIFICATIONS
API	CK-4/CJ-4/CI-4+/CI-4/CH-4
	SN, SM, SL, SJ, SH (15W-40) SH (10W-30)
ACEA	*E9-16/E7-16/E7-12
CATERPILLAR	ECF-3/ECF-2/ECF-1
CUMMINS	CES 20086/CES 20081/CES 20078/ CES 20076/CES 20072
DETROIT DIESEL	DFS 93K222/DFS 93K218
DEUTZ	DQC III-10 LA
FORD	WSS-M2C171-F1
JASO	*DH2
MACK	EOS-4.5/EO-O PREMIUM PLUS
MAN	3575
MERCEDES BENZ	MB 228.31
MTU	Type 2.1
RENAULT	VI RLD-4/VI RLD-3
VOLVO	VDS 4.5/VDS 4/VDS 3/VDS 2

\*Meets requirements of

## SAFETY DATA SHEETS

Product-specific safety data sheets (SDS) can be obtained by contacting your local retail Co-op or Federated Co-operatives Limited (see contact information below) or by going online at [www.fuel.crs](http://www.fuel.crs)

## PRODUCT SELECTION

Product availability can vary by location. Please contact your local retail Co-op for further details.

PRODUCT SIZES	D-MO®	
	10W-30	15W-40
1 L Bottle	✓	✓
5 L Bottle	✓	✓
10 L Bottle		✓
20 L Pail	✓	✓
110 L Drum		✓
205 L Drum	✓	✓
1000 L Tote	✓	✓
Bulk	✓	✓

## RECYCLING OF USED LUBRICANTS AND CONTAINERS

Please protect the environment when disposing of petroleum products. All products should be taken to an authorized collection facility or picked up by a qualified organization. This ensures the products will be disposed of in an environmentally sensitive manner. For additional information on used-oil recycling programs, please see the following:

- Saskatchewan – [www.usedoilrecyclingsk.com](http://www.usedoilrecyclingsk.com)
- Alberta – [www.usedoilrecyclingab.com](http://www.usedoilrecyclingab.com)
- British Columbia – [www.bcusedoil.com](http://www.bcusedoil.com)
- Manitoba – [www.usedoilrecycling.com/en/mb](http://www.usedoilrecycling.com/en/mb)

## CONTACT INFO

For more information on this or any other CO-OP® lubricant product, please contact your local retail co-operative or Federated Co-operatives Limited.

[petroadmin@fcl.crs](mailto:petroadmin@fcl.crs) • [www.fuel.crs](http://www.fuel.crs) • [www.agro.crs](http://www.agro.crs)

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# D-MO<sup>®</sup> SYNTHETIC BLEND

5W-30, 5W-40, 10W-30

## PRODUCT DESCRIPTION

D-MO<sup>®</sup> (Diesel Motor Oil) SYNTHETIC BLEND is an exclusive blend of synthetic Group IV polyalphaolephin (PAO) and conventional API Group II Plus base oils. These base oils are blended with a sophisticated additive package to create an advanced diesel engine oil. No matter the grade, you can expect the maximum level of oil protection in high-performance, heavy-duty engines, especially in cold temperature conditions.

## PERFORMANCE FEATURES

- Extended oil and engine life
- Low-temperature performance
- Oxidative stability
- Soot control
- Fuel economy
- Wet clutch compatible
- Reduces valve train wear
- Reduces engine deposits

## APPLICATIONS

D-MO<sup>®</sup> SYNTHETIC BLEND is designed to be used in both on- and off-road, four-stroke, heavy-duty diesel engines. Its use includes but is not limited to the following industries: agriculture, trucking, construction, forestry, oilfield and mining. It has been designed to be fully compatible with the latest emission systems featuring diesel particulate filters (DPFs) and selective catalytic reduction systems (SCRs). It can also be used in hydraulic applications where SAE multi-grade oil is recommended.

## TECHNICAL PROPERTIES

The values listed below are typical of current production. As variations may occur, these numbers do not constitute a specification.

PROPERTIES	TEST METHODS	D-MO <sup>®</sup> SYNTHETIC BLEND		
		5W-30	5W-40	10W-30
Kinematic Viscosity cSt @ 40°C	ASTM D445	75.5	98.3	80.17
Kinematic Viscosity cSt @ 100°C	ASTM D445	12.0	15.1	11.88
Viscosity Index	ASTM D2270	156	161	142
CCS (Cold Cranking) cP @ °C	ASTM D5293	6,369 @ -30°	5,790 @ -35°	5,540 @ -25°
MRV (Mini Rotary Visc.) cP @ °C	ASTM D4684	19,700 @ -35°	19,800 @ -40°	16,600 @ -30°
HTHS (High Temp/High Shear) cP @ 150°C	ASTM D4683	3.7	4.4	3.51
Pour Point, °C	ASTM D97	-45°	-45°	-43°
TBN	ASTM D2896	10.5	10.5	10.2
Sulphated Ash wt %	ASTM D874	0.9	0.9	1.0

# D-MO<sup>®</sup> SYNTHETIC BLEND

5W-30, 5W-40, 10W-30

## PERFORMANCE SPECIFICATIONS

D-MO<sup>®</sup> SYNTHETIC BLEND is recommended and backed by Federated Co-operatives Limited guarantee for use in the following applications:

INDUSTRY/OEM	SPECIFICATIONS
API	CK-4/CJ-4/CI-4+ CI-4/ CH-4
	SN, SM, SL, SJ, SH (5W-40)
	SH (5W-30, 10W-30)
ACEA	*E9-16/E7-16/E7-12
CATERPILLAR	ECF-3/ECF-2/ECF-1
CUMMINS	CES 20086/CES 20081/CES 20078/CES 20076/CES 20072
DETROIT DIESEL	DFS 93K222/DFS 93K218
DEUTZ	DQC III-10 LA
FORD	WSS-W2C171-F1 (10W-30)
JASO	*DH-2
MACK	EOS-4.5/EO-O PREMIUM PLUS
MERCEDES BENZ	MB 228.31
MTU	TYPE 2.1
RENAULT	VI RLD-4/RLD-3
VOLVO	VDS 4.5/VDS 4/VDS 3/VDS 2

\*Meet requirements of

## SAFETY DATA SHEETS

Product-specific safety data sheets (SDS) can be obtained by contacting your local retail Co-op or Federated Co-operatives Limited (see contact information below) or by going online at [www.fuel.crs](http://www.fuel.crs)

## PRODUCT SELECTION

Product availability can vary by location. Please contact your local retail Co-op for further details.

PRODUCT SIZES	D-MO <sup>®</sup> SYNTHETIC BLEND		
	5W-30	5W-40	10W-30
1 L Bottle			
5 L Bottle	✓	✓	✓
10 L Bottle			
20 L Pail	✓	✓	✓
110 L Drum			
205 L Drum	✓	✓	✓
1000 L Tote	✓	✓	✓

## RECYCLING OF USED LUBRICANTS AND CONTAINERS

Please protect the environment when disposing of petroleum products. All products should be taken to an authorized collection facility or picked up by a qualified organization. This ensures the products will be disposed of in an environmentally sensitive manner. For additional information on used-oil recycling programs, please see the following:

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- Manitoba – [www.usedoilrecycling.com/en/mb](http://www.usedoilrecycling.com/en/mb)

## CONTACT INFO

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CO-OP<sup>®</sup> and D-MO<sup>®</sup> <sup>®</sup>Registered trademark of Federated Co-operatives Limited, Saskatoon S7K 3M9





# D-MO<sup>®</sup> SYNTHETIC

0W-40, 5W-40

## PRODUCT DESCRIPTION

D-MO<sup>®</sup> (Diesel Motor Oil) SYNTHETIC is 100% fully synthetic diesel engine oil. It is a combination of specially selected synthetic base oil and the industry's most advanced additives to create an outstanding premium-performing, heavy-duty diesel engine oil. Canada, one of the harshest cold temperature climates in the world, requires an engine oil that delivers exceptional cold temperature properties, such as cold-cranking and cold-pumping ability. Performance in these areas enable faster startup and wear protection when the engine is most vulnerable.

## PERFORMANCE FEATURES

- Low temperature performance
- Shear stability
- Oxidative stability
- Soot control
- Fuel economy
- Wet clutch compatible
- Reduces valve train wear
- Reduces engine deposits

## APPLICATIONS

D-MO<sup>®</sup> SYNTHETIC was designed for colder climates and can be used year round in both on- and off-road, four-stroke heavy-duty diesel engines. Its use includes, but is not limited to, the following industries: agriculture, trucking, construction, forestry, oilfield and mining. D-MO<sup>®</sup> SYNTHETIC is fully compatible with the latest emission systems featuring diesel particulate filters (DPFs) and selective catalytic reduction systems (SCRs). It can also be used in hydraulic applications where SAE multi-grade oil is recommended.

## TECHNICAL PROPERTIES

The values listed below are typical of current production. As variations may occur, these numbers do not constitute a specification.

PROPERTIES	TEST METHODS	D-MO <sup>®</sup> SYNTHETIC	
		0W-40	5W-40
Kinematic Viscosity cSt @ 40°C	ASTM D445	80.6	88.7
Kinematic Viscosity cSt @ 100°C	ASTM D445	13.8	14.4
Viscosity Index	ASTM D2270	176	169
CCS (Cold Cranking) cP @ °C	ASTM D5293	5,670 @ -35°	6,260 @ -30°
MRV (Mini Rotary Visc.) cP @ °C	ASTM D4684	26,300 @ -40°	31,300 @ -35°
HTHS (High Temp/High Shear) cP @ 150°C	ASTM D4683	3.9	3.9
Pour Point, °C	ASTM D97	-51°	-42°
TBN	ASTM D2896	10.6	11.0
Sulphated Ash wt %	ASTM D874	0.9	1.0



# D-MO<sup>®</sup> SYNTHETIC

0W-40, 5W-40

## PERFORMANCE SPECIFICATIONS

D-MO<sup>®</sup> SYNTHETIC is approved and/or recommended and backed by Federated Co-operatives Limited guarantee for use in the following applications:

INDUSTRY/OEM	SPECIFICATIONS
API	CK-4/CJ-4/CI-4+/CI-4/CH-4
	SN/SM/SL/SJ/SH
ACEA	*E9-16/E7-16/E7-12
CATERPILLAR	ECF-3/ECF-2/ECF-1
CUMMINS	CES 20086/CES 20081/CES 20078/CES 20076/CES 20072
DETROIT DIESEL	DFS 93K222/DFS 93K218
FCA	*MS-10902 (5W-40)
FORD	WSS-M2C171-F1 (5W-40)
MACK	EOS-4.5/EO-O PREMIUM PLUS
MAN	3575
MERCEDES BENZ	MB 228.31
MTU	TYPE 2.1
RENAULT	VI RLD-4/RLD-3
VOLVO	VDS 4.5/VDS

\*Meets requirements of

## SAFETY DATA SHEETS

Product-specific safety data sheets (SDS) can be obtained by contacting your local retail Co-op or Federated Co-operatives Limited (see contact information below) or by going online at [www.fuel.crs](http://www.fuel.crs)

## PRODUCT SELECTION

Product availability can vary by location. Please contact your local retail Co-op for further details.

PRODUCT SIZES	D-MO <sup>®</sup> SYNTHETIC	
	0W-40	5W-40
1 L Bottle	✓	
5 L Bottle	✓	✓
10 L Bottle		
20 L Pail	✓	✓
110 L Drum		
205 L Drum	✓	✓
1000 L Tote	✓	✓
Bulk		✓

## RECYCLING OF USED LUBRICANTS AND CONTAINERS

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- Alberta – [www.usedoilrecyclingab.com](http://www.usedoilrecyclingab.com)
- British Columbia – [www.bcusedoil.com](http://www.bcusedoil.com)
- Manitoba – [www.usedoilrecycling.com/en/mb](http://www.usedoilrecycling.com/en/mb)

## CONTACT INFO

For more information on this or any other CO-OP<sup>®</sup> lubricant product, please contact your local retail co-operative or Federated Co-operatives Limited.

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