



T5X[®] Heavy Duty Motor Oil

T5X Heavy Duty Motor Oil is a high-quality diesel engine oil designed for use in a wide variety of applications, including off-highway diesel equipment, farm machinery, marine engines, 2-stroke cycle diesel engines (in the appropriate viscosity grades) and mixed commercial fleets. It also may be used in some heavy-duty manual transmissions in trucks and buses.

T5X Heavy Duty is formulated to provide excellent wear protection, to minimize the formation of sludge and varnish, to protect against rust and bearing corrosion, and to resist foaming. It has excellent soot dispersancy to protect against abrasive wear and soot-induced oil thickening, and excellent oxidation resistance to help minimize deposit formation. The SAE 30 & 40 grades have low ash content to help minimize ash deposits and keep intake ports clear to maintain good power output in 2-stroke cycle applications.

T5X Heavy Duty SAE 30 and 40 meet or exceed the performance requirements of API Service Categories CF-2 and CF, and also may be used in applications where API CD quality oils are specified. They are particularly recommended for use in 2-stroke cycle diesel engines in transit buses and marine fleets running on low-sulfur diesel fuel.

T5X Heavy Duty SAE 50 meets or exceeds the performance requirements of API Service Categories CF and SL. It is primarily recommended for use in off-highway diesel equipment and mixed commercial fleets with both diesel and gasoline vehicles.

T5X Heavy Duty SAE 10W is intended for use in the hydraulic systems and hydrostatic transmissions of Caterpillar and other off-highway construction equipment. It is **not** recommended for use in engines.

Applications

- 2-stroke cycle diesel engines in bus fleets and marine fleets (SAE 30, 40)
- Off-highway trucks, heavy equipment and farm equipment
- Light trucks and farm equipment with gasoline engines (SAE 50)
- Heavy-duty manual transmissions in trucks and buses where the OEM specifies engine oil (SAE 30, 40, 50)
- Hydraulic systems and some hydrostatic transmissions on Caterpillar and other off-highway equipment

**Heavy-Duty
Monograde
Diesel Engine Oil**

CONTACT INFORMATION

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T5X Heavy Duty meets or exceeds the requirements of:

- API Service CF-2⁽¹⁾, CF⁽¹⁾ (SAE 30, 40)
- API Service CF⁽¹⁾, SL (SAE 50)
- U.S. Military MIL-PRF-2104G, for engines (SAE 30, 40)
- Detroit Diesel 2-stroke cycle engines, Oil Type 1 (1.0% max. SASH) (SAE 40)

⁽¹⁾ *Obsolete service category.*

Features/Benefits

- Excellent soot control for protection against abrasive wear and soot-induced oil thickening
- Protects against sludge and varnish formation
- Protects against scuffing and wear
- Protects against rust and bearing corrosion
- Good resistance to foaming and aeration
- Low-ash content to minimize ash deposits and help keep intake ports clean (SAE 30 & 40)

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Typical Properties

SAE Grade	10W	30	40	50
Specific Gravity @ 60°F	0.872	0.879	0.882	0.892
Density, lbs/gal @ 60°F	7.26	7.32	7.35	7.43
Color, ASTM D1500	L 2.5	4.0	4.0	4.0
Flash Point (COC), °C (°F)	218 (424)	240 (464)	240 (464)	240 (464)
Pour Point, °C (°F)	-39 (-38)	-33 (-27)	-33 (-27)	-30 (-22)
Viscosity, Kinematic				
cSt @ 40°C	48.0	88.0	149	217
cSt @ 100°C	7.5	11.0	15.4	18.2
Viscosity Index	120	111	105	92
Cold Cranking Viscosity, cP	5,900	—	—	—
@ °C	(-25)			
High-Temp/High-Shear Viscosity, cP @ 150°C	—	3.4	4.2	5.7
Sulfated Ash, ASTM D874, wt %	0.94	1.0	1.0	1.18
Total Base Number (TBN), ASTM D2896	7.5	8.1	8.1	9.5
Zinc, wt %	0.103	0.109	0.109	0.133

Health and Safety Information

For recommendations on safe handling and use of this product, please refer to the Material Safety Data Sheet via <http://w3apps.phillips66.com/NetMSDS>.

Typical properties are average values only and do not constitute a specification. Minor variations that do not affect product performance are to be expected during normal manufacture, and at different blending locations. Product formulations are subject to change without notification.

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