



*The First in Synthetics*®

# Comparative Motor Oil Testing

Updated Edition



## AMSOIL VS.

**Castrol GTX**

**Chevron Supreme**

**Shell Formula**

**Valvoline SynPower**

**Mobil 1 Extended Performance**

**Motorcraft Synthetic Blend**

**Kendall GT-1 High Performance**

**Pennzoil Platinum**

**Quaker State Horse Power**

**Trop Artic Synthetic Blend**



## MOTOR OILS TESTED

AMSOIL Synthetic  
Castrol GTX  
Chevron Supreme  
Shell Formula  
Valvoline SynPower  
Mobil 1 Extended Performance  
Motorcraft Synthetic Blend  
Kendall GT-1 High Performance  
Pennzoil Platinum  
Quaker State Horse Power  
Trop Artic Synthetic Blend

## TEST AREAS

Thin Film Oxygen Uptake (ASTM D-4742)  
NOACK Volatility (ASTM D-5800)  
Pour Point (ASTM D-97)  
Total Base Number (ASTM D-2896)  
Cold Cranking Simulator (ASTM D-5293)  
Four-Ball Wear (ASTM D-4172)

November 2008 test results

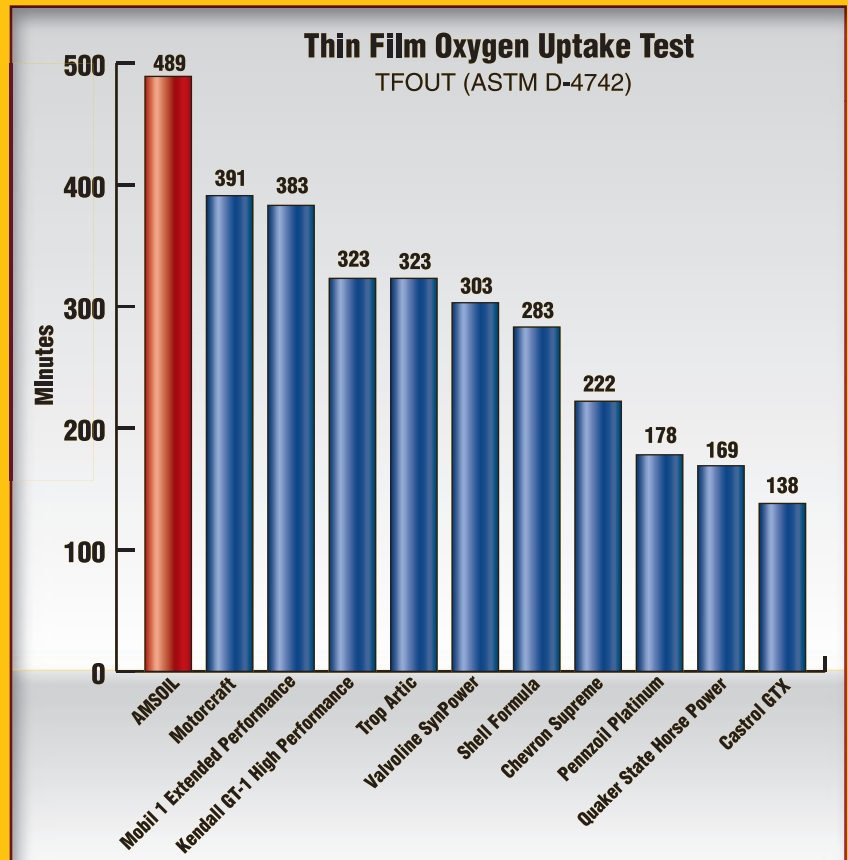
AMSOIL Synthetic 10W-30 Motor Oil (ATM) and 10 competing conventional, synthetic and synthetic blend 10W-30 motor oils were subjected to a series of motor oil tests. All six tests were completed in accordance with American Society of Testing and Materials (ASTM) test procedures, with the results directly indicating the level of protection and performance provided by each

of the tested oils. When testing concluded, AMSOIL Synthetic Motor Oil overwhelmingly emerged as the top-performing oil in the group. No oil outperformed AMSOIL in any of the tests. A comparison also reveals the total cost of using AMSOIL Synthetic Motor Oil is less over 25,000 miles than all the competing motor oils.

## EXTENDS OIL LIFE

The Thin Film Oxygen Uptake Test (TFOUT) is used to evaluate an engine oil's ability to resist heat and oxygen breakdown when contaminated with oxidized/nitrated fuel, water and soluble metals such as lead, copper, iron, manganese and silicon. The higher the number, the better the resistance to chemical breakdown.

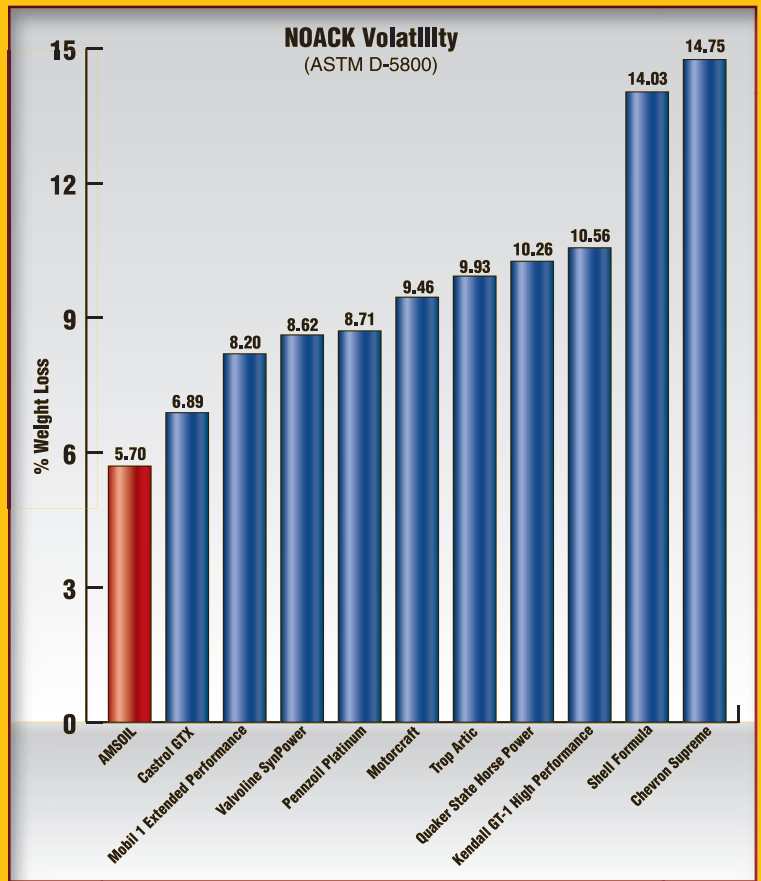
AMSOIL Synthetic Motor Oil has superior heat and oxidation resistance to control sludge deposits and extend oil life. Engines stay clean for maximum protection and oil changes are reduced, saving time and money.



# MAXIMIZES FUEL ECONOMY, REDUCES OIL CONSUMPTION AND EMISSIONS

The NOACK Volatility Test determines the evaporation loss of lubricants in high-temperature service. The more motor oils vaporize, the thicker and heavier they become, contributing to poor circulation, reduced fuel economy and increased oil consumption, wear and emissions. The lower the number, the better the resistance to vaporization.

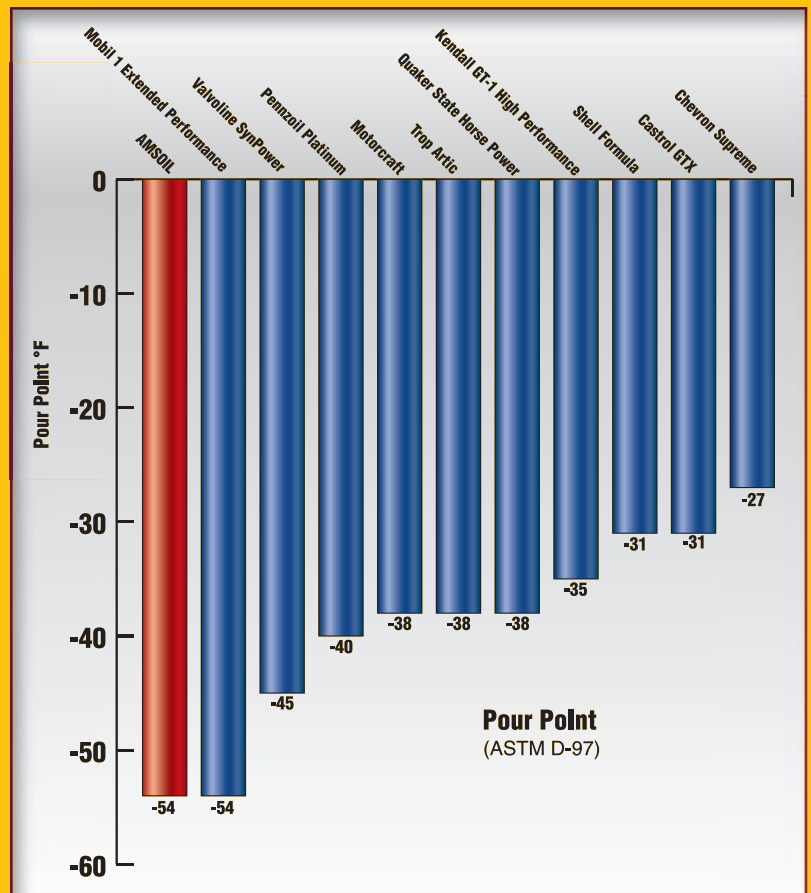
AMSOIL Synthetic Motor Oil resists high-temperature volatilization (evaporation) better than other motor oils. AMSOIL Synthetic Motor Oil maintains peak fuel efficiency and reduces oil consumption and emissions.



# IMPROVES COLD-TEMPERATURE PERFORMANCE

The Pour Point Test determines the lowest temperature at which a lubricant will flow. The lower a lubricant's pour point, the better protection it provides in low-temperature service.

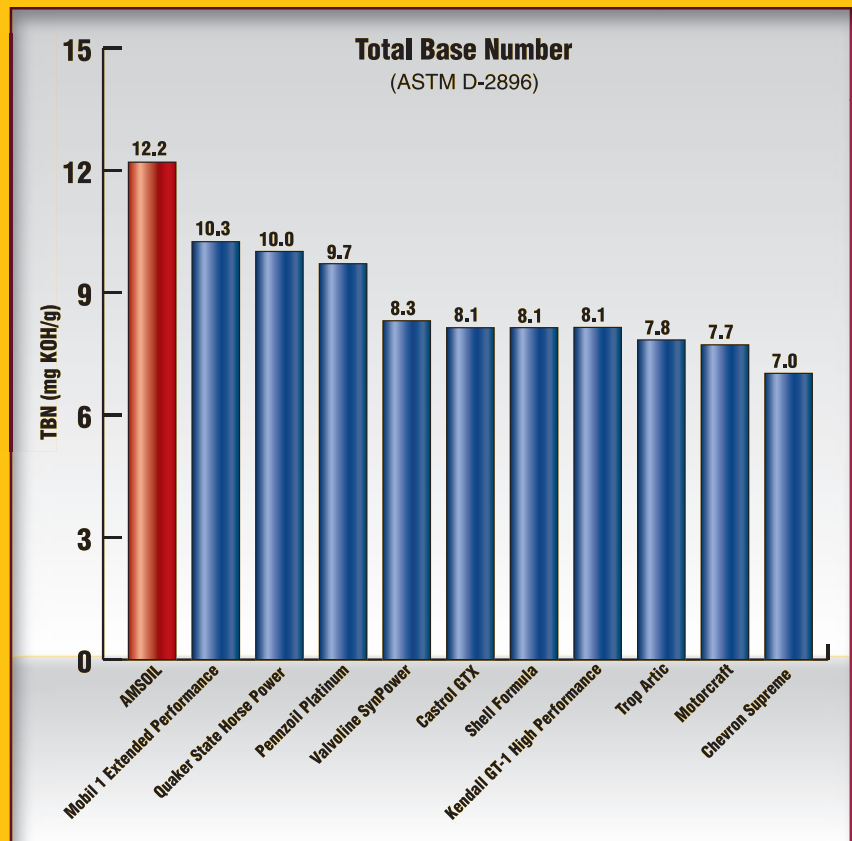
Unlike conventional oils that solidify in cold temperatures, AMSOIL Synthetic Motor Oil remains fluid down to -54° F. AMSOIL Synthetic Motor Oil helps engines turn over easier and flows quickly to engine parts for critical start-up protection. Engines start faster and wear is greatly reduced for extended engine life.



# CONTROLS ACID FORMATION

Total Base Number (TBN) is the measurement of a lubricant's reserve alkalinity, which aids in the control of acids formed during the combustion process. The higher a motor oil's TBN, the more effective it is in suspending wear-causing contaminants and reducing the corrosive effects of acids over an extended period of time.

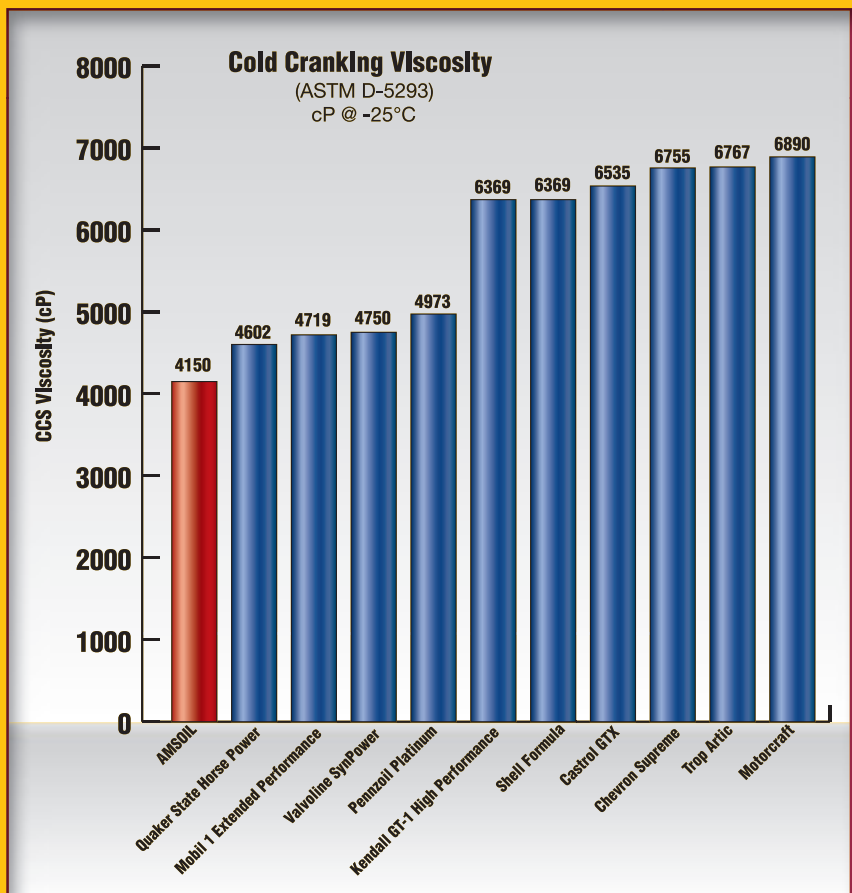
The high TBN of AMSOIL Synthetic Motor Oil allows it to effectively combat wear-causing contaminants and acids, providing superior protection and performance over extended drain intervals.



# HELPS ENGINES START EASIER

The Cold Crank Simulator Test determines the apparent viscosity of lubricants at low temperatures and high shear rates. Viscosity of lubricants under these conditions is directly related to engine cranking and startability. The lower a lubricant's cold crank viscosity, the easier an engine will turn over in cold temperatures.

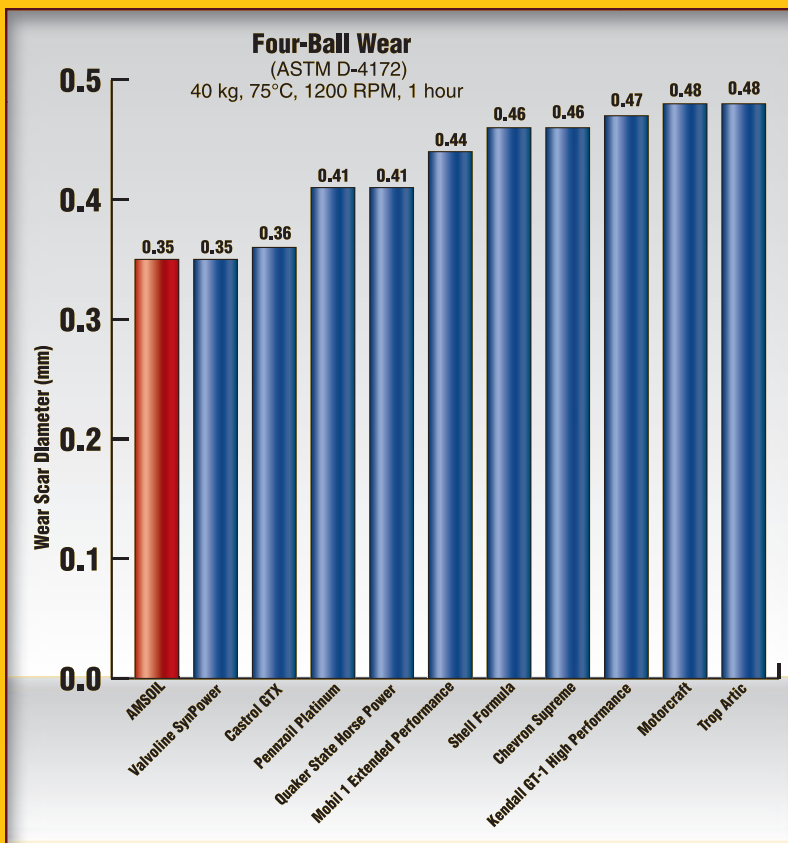
The low cold-crank viscosity of AMSOIL Synthetic Motor Oil reduces drag on moving engine parts and allows engines to achieve critical cranking speed in frigid temperatures. Engines turn over quickly and dependably in the coldest winter temperatures and motor oil flows to critical areas requiring immediate lubrication, protecting against wear at start-up.



# PROTECTS AGAINST WEAR

The Four-Ball Wear Test evaluates the protection provided by engine oil under conditions of pressure and sliding motion. The size of the scar left as a result of the test determines the amount of wear protection the lubricant provides. The smaller the wear scar, the better the protection.

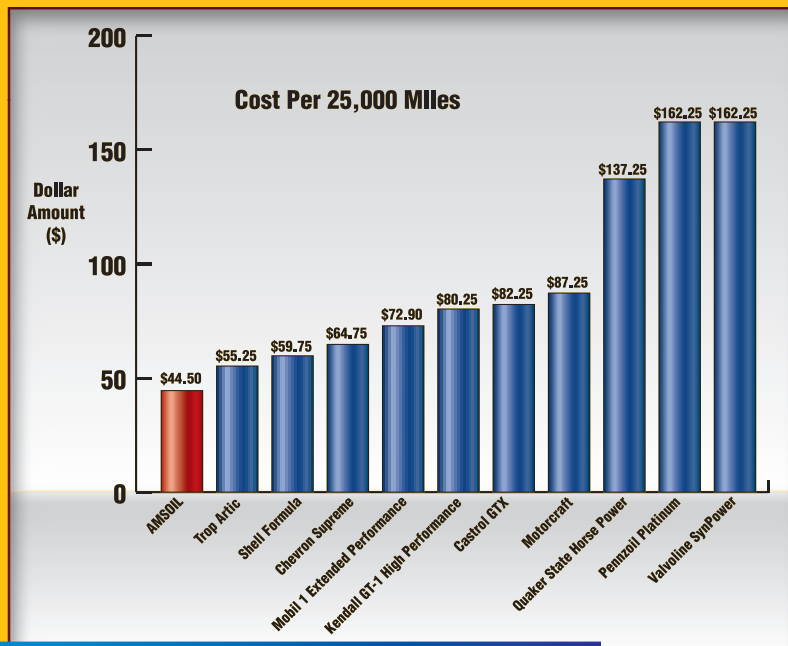
Tests show that no other motor oil demonstrates better anti-wear performance than AMSOIL Synthetic Motor Oil. With AMSOIL Synthetic Motor Oil, engine life can be extended and major repairs are often reduced.



# SAVES MONEY

By extending oil drain intervals through its premium formulation, AMSOIL Synthetic Motor Oil saves drivers money. A value comparison shows AMSOIL Synthetic Motor Oil costs less than competing motor oils over 25,000 miles.

While competing motor oils must be changed up to five times over 25,000 miles, AMSOIL Synthetic Motor Oil is only changed once, saving both time and money through reduced labor, oil and filter costs.



| Motor Oil                     | Price/Ql. (Retail) | Price/Oil Change (5 quarts) | Drain Interval (Miles) | No. of Oil Changes Over 25,000 Miles | Cost Per 25,000 Miles |
|-------------------------------|--------------------|-----------------------------|------------------------|--------------------------------------|-----------------------|
| AMSOIL                        | \$8.90             | \$44.50                     | 25,000                 | 1                                    | \$44.50               |
| Trop Artic                    | \$2.21             | \$11.05                     | 5,000                  | 5                                    | \$55.25               |
| Shell Formula                 | \$2.39             | \$11.95                     | 5,000                  | 5                                    | \$59.75               |
| Chevron Supreme               | \$2.59             | \$12.95                     | 5,000                  | 5                                    | \$64.75               |
| Mobil 1 Extended Performance  | \$7.29             | \$36.45                     | 15,000                 | 2                                    | \$72.90               |
| Kendall GT-1 High Performance | \$3.21             | \$16.05                     | 5,000                  | 5                                    | \$80.25               |
| Castrol GTX                   | \$3.29             | \$16.45                     | 5,000                  | 5                                    | \$82.25               |
| Motorcraft                    | \$3.49             | \$17.45                     | 5,000                  | 5                                    | \$87.25               |
| Quaker State Horse Power      | \$5.49             | \$27.45                     | 5,000                  | 5                                    | \$137.25              |
| Pennzoil Platinum             | \$6.49             | \$32.45                     | 5,000                  | 5                                    | \$162.25              |
| Valvoline SynPower            | \$6.49             | \$32.45                     | 5,000                  | 5                                    | \$162.25              |

November 2008 pricing. AMSOIL Dealers, Preferred Customers and accounts pay wholesale prices, saving even more.



# The Company of Firsts

## Over 35 Years of Innovation and Leadership

- **First** to develop an API-rated 100 percent synthetic motor oil.
- **First** to introduce the concept of “extended drain intervals” with a recommended 25,000-mile/12-month drain interval.
- **First** U.S. company to use the NOACK volatility test as a standard of performance excellence.
- **First** to produce synthetic motor oils for diesel engines, racing engines, turbos and marine engines.
- **First** to introduce synthetic oils that legitimately contribute to improving fuel efficiency.
- **First** to manufacture synthetic gear lube for automotive use.
- **First** to manufacture a 100:1 pre-mix synthetic 2-cycle oil.
- **First** to manufacture a synthetic automatic transmission fluid for automotive use.

*AMSOIL products and Dealership information are available from your local AMSOIL Dealer.*

