

# New Motorcycle Oils Offer Superior Transmission and Rust Protection

AMSOIL Synthetic Motorcycle Oils have been re-formulated with new high performance additive technology that provides even greater multi-functional benefits for the special requirements of motorcycle applications. These independent and exclusive new AMSOIL formulations provide second-to-none viscosity protection for hot-running American and foreign motorcycle engines, transmissions and primary chaincases.

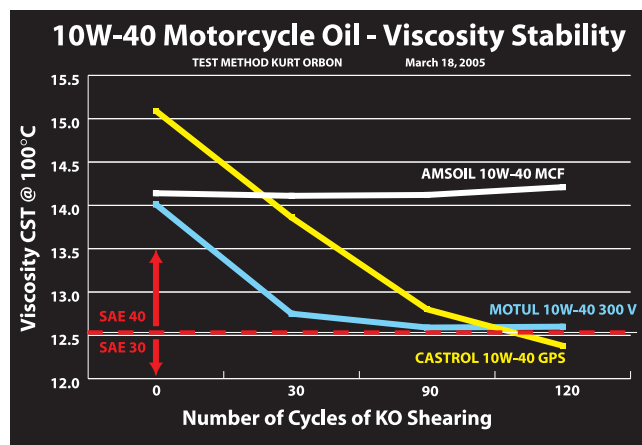
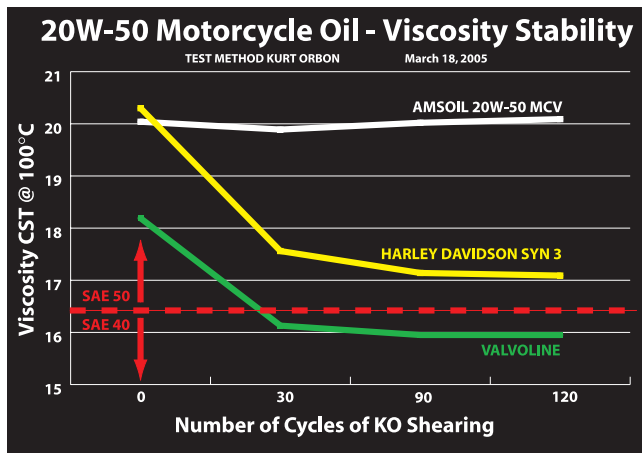
AMSOIL 20W-50 Synthetic Motorcycle Oil (MCV) is recommended for Harley-Davidson, Buell, Victory, Ducati, BMW, Aprilia and Triumph motorcycles calling for a 15W-50 or 20W-50 viscosity, providing superior protection in engines, transmissions and primary chaincases.

AMSOIL 10W-40 Synthetic Motorcycle Oil (MCF) is recommended for Honda, Kawasaki, Yamaha, Suzuki, BMW, Husqvarna and KTM motorcycles calling for a 10W-40 or 20W-40 viscosity, providing superior protection in engines and transmissions.

## Improved Transmission Protection

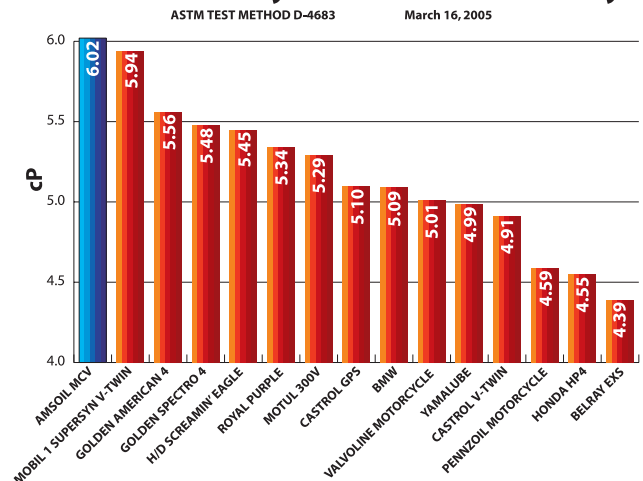
AMSOIL Synthetic Motorcycle Oils not only provide superior protection for motorcycle engines, they also provide superior gear protection, meeting API GL-1 gear lube viscosity requirements. AMSOIL Synthetic 10W-40 Motorcycle Oil (MCF) meets SAE 80W-90 gear lube requirements, while AMSOIL Synthetic 20W-50 Motorcycle Oil (MCV) meets SAE 90 gear lube viscosity requirements.

Viscosity is the most important characteristic of a lubricant. Motorcycle gears create a shearing effect that causes permanent oil viscosity loss. This thinning effect reduces the oil's ability to prevent metal-to-metal contact and wear. The stability and natural operating temperature ranges of the premium synthetic base stocks used to formulate AMSOIL Synthetic Motorcycle Oils eliminate

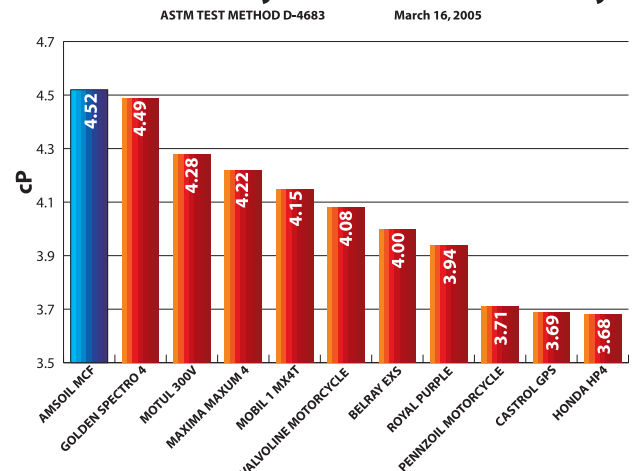


AMSOIL Motorcycle Oil viscosity remained stable throughout the duration of the test, while the competitors' oils showed quick and dramatic viscosity breakdown.

## 20W-50 Motorcycle Oil - Shear Stability



## 10W-40 Motorcycle Oil - Shear Stability



shear and reduce wear. AMSOIL Synthetic Motorcycle Oils exhibit absolute shear stability as measured by the Kurt Orbon shear stability test.

The high temperatures and tight tolerances common to motorcycle applications also affect viscosity. The High Temperature/High Shear (HTHS) Test (ASTM D-4683) measures a lubricant's viscosity under severe high temperature and shear conditions. The more resistant an oil is to high temperature viscosity loss, the better it protects, and even a HTHS difference of 0.1 cP makes a significant difference.

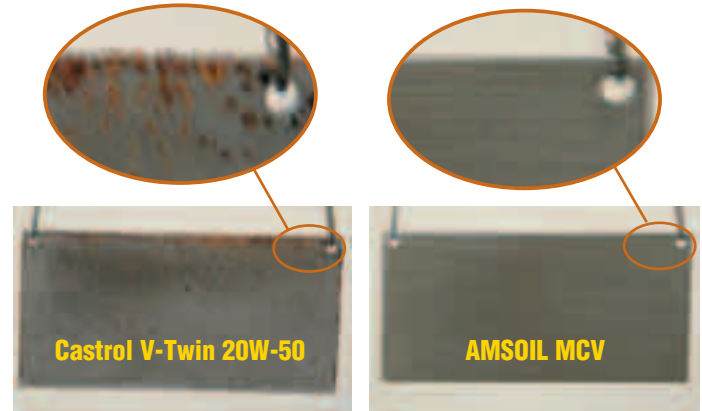
AMSOIL Synthetic Motorcycle Oils exhibit higher HTHS viscosities than competing conventional and synthetic motorcycle oils. As seen in the graphs, AMSOIL Synthetic 20W-50 and 10W-40 Motorcycle Oils displayed the highest High Temperature/High Shear viscosities in their respective test groups, providing motorcycle engines and transmissions operating in the harshest conditions with superior protection against wear and viscosity loss and eliminating the need for separate gear case oils as recommended by some competitors. Synthetic 10W-40 may also be used in two-cycle transmissions.

### ***Excellent Wet Clutch Performance***

Many motorcycles utilize a clutch that is immersed in the motor oil. The friction modifiers present in many automotive motor oils and the extreme pressure additives present in EP gear lubricants produce a low coefficient of friction between the clutch discs and plates, resulting in clutch slippage and glazing. Slippage leads to increased operating temperatures and reduced clutch life. AMSOIL Synthetic Motorcycle Oils are formulated without friction modifiers, providing positive clutch engagement, longer equipment life and reduced temperatures. AMSOIL Synthetic Motorcycle Oils meet the clutch compatibility requirements mandated by JASO MA.

### ***Excellent Corrosion Protection***

Most motorcycles spend the majority of their lives either parked or in storage, but most motorcycle oils fail to address corrosion problems. Corrosion protection during storage and in humid conditions is essential to extending equipment life. AMSOIL Synthetic Motorcycle Oils are formulated with specialized additive technology that not only protect against corrosion and acids during operation, but also provide exceptional protection during storage. The ASTM D-1748 Rust Test measures a lubricant's



ability to protect against rust and corrosion. A standard metal reference coupon is immersed in the test oil before being placed in a humidity cabinet for 24 hours at 120 degrees F. As seen in the photos, the reference coupon treated with AMSOIL 20W-50 Synthetic Motorcycle Oil showed no signs of rust and corrosion, while the competitor failed the test.

### ***Outstanding Heat Resistance***

Motorcycles operate in demanding, high heat conditions that require robust high temperature deposit control additives. While many conventional oils break down and oxidize when faced with high temperatures, causing formation of carbon and sludge deposits, AMSOIL Synthetic Motorcycle Oils effectively withstand oil breakdown and oxidation, keeping equipment running cooler and minimizing oil consumption, thickening and emissions. Air-cooled engines get especially hot while idling in traffic, commonly reaching temperatures up to 240 degrees Fahrenheit. The extra margin of protection provided by AMSOIL Synthetic Motorcycle Oils is especially important for hot running air cooled motorcycle engines.

### ***Foam Control***

High engine speeds and transmission gears in motorcycles churn the oil, suspending air and causing foam. When this oil and air mixture is drawn into a loaded area, the air compresses and decreases the thickness of the oil film, compromising wear protection. In addition, suspended air promotes oil oxidation, reducing its service life. AMSOIL Synthetic Motorcycle Oils greatly reduce foaming to provide long term lubricating protection in high speed, high RPM conditions.

## Robust Additive Levels

Recent automotive motor oil regulations have limited certain additive levels, including the anti-wear additive known as ZDDP. ZDDP is an extremely effective anti-wear, anti-oxidant additive, and reducing its level results in compromised wear control and shortened service life. Because motorcycle applications require robust additive systems to control wear and oxidation, use of an automotive motor oil or an automotive motor oil re-labeled as a motorcycle oil compromises protection and performance. AMSOIL Synthetic Motorcycle Oils are overtreated with robust additive packages, including high levels of calcium, phosphorus, zinc and additional oxidation inhibitors, to extend oil life expectancy, provide unmatched engine cleanliness and greatly reduce wear.

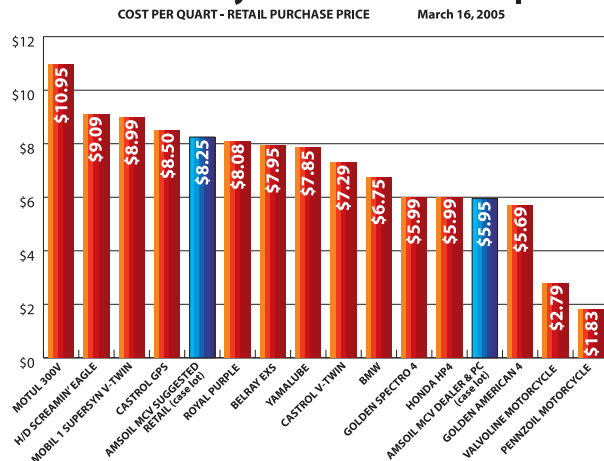
AMSOIL Synthetic Motorcycle Oils are recommended for twice the manufacturer's recommended drain interval for on-road motorcycles.

The Four Ball Wear Test (ASTM D-4172) determines the wear protection properties of a lubricant. The smaller the average wear scar, the better the wear protection provided by the lubricant. AMSOIL Synthetic Motorcycle Oils produce significantly smaller wear scars than competing motorcycle oils, providing unsurpassed protection against engine wear, reducing maintenance costs and extending equipment life.

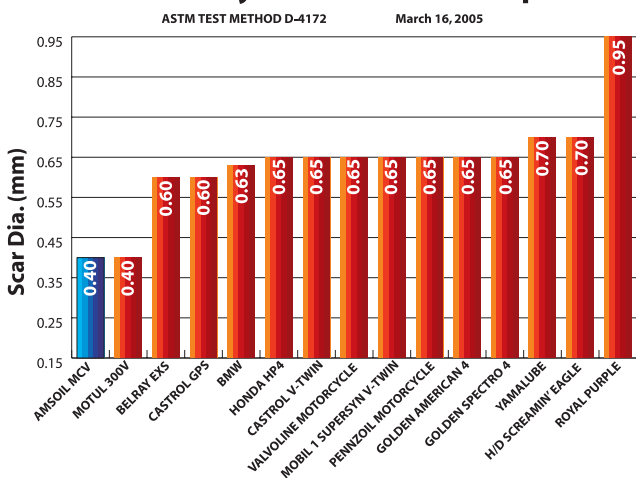
## Cost Effective

AMSOIL Synthetic Motorcycle Oils provide excellent cost effectiveness and are cost competitive with competing high end motorcycle oils. The unmatched protection and performance provided by AMSOIL Synthetic Motorcycle Oils is excellent insurance for today's expensive motorcycles and custom bikes.

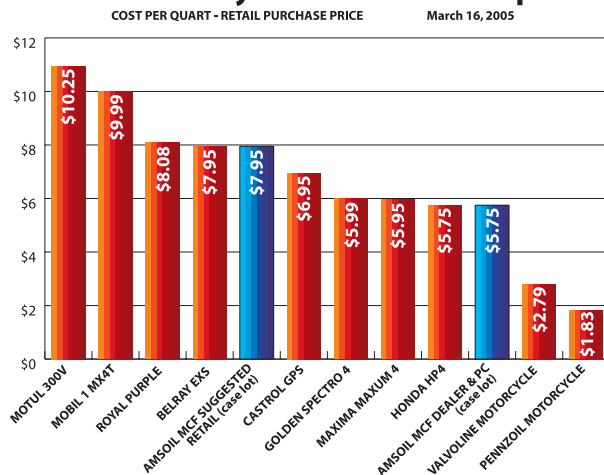
### 20W-50 Motorcycle Oil - Price Comparison



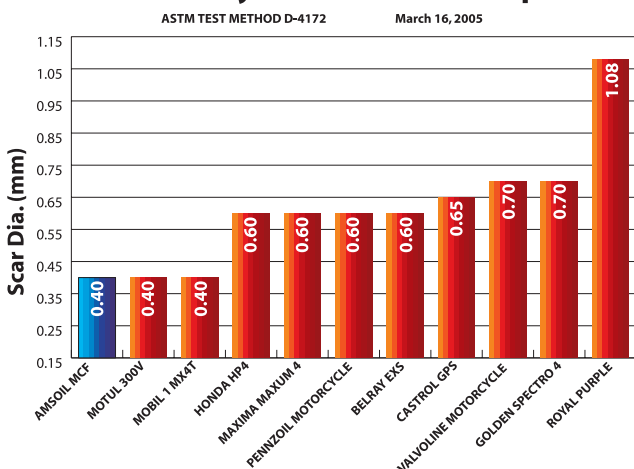
### 20W-50 Motorcycle Oil - Wear Comparison



### 10W-40 Motorcycle Oil - Price Comparison



### 10W-40 Motorcycle Oil - Wear Comparison



## AMSOIL Synthetic Motorcycle Oils

- Excellent for roller bearings and does not cause "skate" or "float" in V-Twin Engines
- Prevents foaming in high-RPM engines
- Eliminates the need for multiple lubricants
- Absolute shear stability maintains protective viscosity in high heat, high shear conditions
- Better performance and price than competitive motorcycle oils
- Recommended for twice the manufacturer's recommended drain interval for on-road motorcycles
- Provide exceptional protection against rust and corrosion during storage
- Robust anti-wear additive packages provide superior wear protection and longer equipment life