

Oil analysis is a key part of my vehicle's maintenance. For the last 105,000 miles I've pulled an oil sample and changed the filter about every 5000 miles adding in the 2 quarts I lose with the filter. My oil analysis show I'm good to continue and I see no reason to change: I'm shooting for 250,000 miles. I bought my 2000 Ford super duty new and it was changed over to Conklin Vehicle Products at 1000 miles. I have a little over 200,000 on it now and haven't had any major repairs. You need to know this truck isn't babied and it doesn't see any special treatment besides the Conklin products. When a new truck cost \$45K why not give your truck a longer life & protect it with quality Conklin products?

- Michael Rockhold Sr., KS



Your oil analysis reports contain various measurements, and correctly interpreting these results can be critical to the health of your equipment. The following information is provided to assist you in interpreting your oil analysis reports.

WEAR ELEMENTS:

These metals indicate wear on particular components of an individual unit. The particles of these metals will indicate a wear problem on the microscopic level before the problem can be detected by conventional means. The existence of a wear problem is determined not only by absolute values of metals, but—more importantly—also by a relative increase or trend in one or more of these metals.

WEAR METAL SOURCES:

- Iron cylinders, gears, rings crankshafts, liners, bearings, housings, rust
- Chromium rings, roller/taper bearing, rods and platings
- Lead bearing overlays, additive in gear oil and gasoline
- Copper bushings, bearings, thrust-washers, friction plates, copper heat exchangers and oil additive
- Tin bearings, bushings, piston platings
- Aluminum pistons, bearings, pumps, blowers, rotors and thrust-washer
- Nickel valves
- Silver bearings, bushings and platings
- Manganese trace elements in liners and rings, additive in gasoline
- Titanium trace element
- Vanadium trace element

ADDITIVES:

These elements are blended into the oil in different forms and quantities by the manufacturer. The additive package in an oil will vary, depending upon the type of oil.

- Magnesium dispersant/detergent additive
- Calcium dispersant/detergent additive
- Barium dispersant/detergent additive
- Phosphorus anti-wear additive
- Zinc anti-wear additive
- Molybdenum anti-wear additive

WATER BY KARL FISCHER:

Reports percent water (ASTM D-1744 or D-6304)

GLYCOL:

A specific test for the presences of glycol (anti-freeze) in an oil (ASTM D-2982)

PARTICLE COUNT:

Determines the level of cleanliness in hydraulic fluids

FUEL DILUTION:

Unburned fuel in the oil may signal fuel system leaks or incomplete combustion.

FUEL SOOT:

A result of blow-by or incomplete combustion. High levels may indicate combustion problems or overextended drain intervals.

CONTAMINANTS:

These elements can be an indication of contamination from outside the system. The source and amount of contamination can be determined by comparison to a previous, non-contaminated sample of the same unit. Specific tests for some contaminants can supplement the analysis.

CONTAMINANT SOURCES:

- Silicon element used to determine the levels of airborne dirt and abrasives in the oil (sometimes used as an anti-foam agent)
- Boron present in most permanent anti-freeze systems (sometimes used as an oil additive)
- Sodium present in most permanent anti-freeze systems (sometimes used as an oil additive)
- Potassium present in most permanent anti-freeze systems

TOTAL BASE NUMBER:

Measures the level of alkalinity in an oil. Decreasing total base number signals the need to change oil (ASTM D-4739).

VISCOSITY:

The kinematic viscosity (ASTM D-445) determined at 40°C and/or 100°C is a measure of the flow rate of an oil in relation to time. This data is used to assign an SAE grade to an oil.

Engine Oil Viscosity Classification Chart

SAE Grade	MIN-cSt-100°	C-MAX-cSt
10W	4.10	
20	5.60	9.29
30	9.30	12.49
40	12.50	16.29
50	16.30	21.89

Part Numbers

- #78604 Prepaid oil sample bottle
- #78892 Prepaid oil sample bottle 10/cs.
- #78617 Pump with 3 foot tubing
- #39164 Oil sample plastic tubing (per foot)



Tribology

THE FOLLOWING INFORMATION HAS BEEN PROVIDED TO ASSIST IN THE INTERPRETATION OF YOUR OIL ANALYSIS.