

PHOTOS



[\(Enlarge photo\)](#)

Ever wonder if you're changing the oil after the right number of miles? Try having the oil analyzed to see how much life is left in it. (Photo courtesy of iStockPhoto)



[\(Enlarge photo\)](#)

The engine oil analysis will tell you if certain metal parts in the motor are wearing too rapidly and headed for a breakdown. (Photo courtesy of Blackstone Laboratories)



[\(Enlarge photo\)](#)

Mechanics have traditionally recommended oil changes at 3,000 miles. But after analyzing their oil, some drivers have extended the life of their oil to 10,000 miles. (Photo by Mark Takahashi)

Maintenance Articles

[Corner Garage vs. Dealer Service Department](#)

[Don't Be Stranded by a Missed Recall Notice](#)

[Interior Motives — The Basics of Interior Detailing](#)

[Is Your Car a Mess? Organize It In Five Easy Steps](#)

[Keep Your Car Looking Its Best](#)

New Car Pricing

Browse By:

[Hybrid](#)

[SUV](#)

[Truck](#)

[Sedan](#)

[More Types >>](#)

Incentives & Rebates

[Latest Incentives](#)

[Deals of the Month](#)

2010 Buying Guides

[Hybrid](#)

[SUV](#)

[Truck](#)

[Sedan](#)

Maintenance Tips

What's Your Engine Oil Telling You?

Like Blood Work, Engine Oil Analysis Can Reveal Looming Maintenance Issues

By Philip Reed, Senior Consumer Advice Editor
[Email](#)

Analyzing the oil in your car is like sending a sample of your blood to the lab — it reveals an astonishing amount of information about the inner workings of your engine without invasive surgery. By reading the results of the analysis, you can fine-tune the intervals between oil changes and discover problems — such as a leaking head gasket — before they cause more expensive damage.

You might even consider analyzing the oil from a car you are considering buying. Currently this is popular with airplane, boat and heavy equipment buyers, but at least one company may soon offer this as an option for used car shoppers as well.

Test-Driving Oil Analysis

We sent two samples of engine oil to [Blackstone Laboratories](#) in Fort Wayne, Indiana, to see what we could learn about a 2000 Mitsubishi Galant with 80,000 miles on its four-cylinder engine. The first sample was oil that had been used for 3,000 miles. The second sample was taken right after an oil change at a Jiffy Lube.

The 3,000-mile oil still had plenty of life left in it, according to the lab results. Blackstone recommended we try increasing the oil change interval to 5,000 miles and send another sample for analysis at that point. Furthermore, the report said the wear metals in the oil were within normal levels, meaning that the engine was not in immediate danger of breaking down. By detecting specific wear metals in the oil, experts can tell which engine parts might be in danger of malfunctioning.

Since the purpose of oil is to lubricate, clean and cool the engine, a TBN (total base number) is used to measure the deterioration of the oil by assigning a number that is usually between 0 and 8. The TBN of the 3,000-mile oil was 3.7. The Jiffy Lube oil was 7.6 indicating it had been barely used.

"Even if the TBN is 1, it doesn't mean the oil isn't doing its job," said Ryan Stark, president of Blackstone Laboratories. "But it does reveal the rate at which the additives are being used up."

Oil Analysis, a Growing Business

Stark said that his company, which employs six analysts, gets about 20 new customers a day and does between 40,000 and 50,000 reports per year. A single analysis costs \$22.50 but discounts are available for multiple analyses. Blackstone can also analyze transmission fluid and other engine fluids to look for possible problems.

Many other laboratories offer engine oil analysis, but Blackstone's reports are user-friendly, and the turnaround is quick. Within days of our mailing in two 4-ounce samples, the results were e-mailed to us.

"We've had customers who were changing their oil every 3,000 miles and now they've gone to every 10,000 miles because of our reports," said Stark. "But we're conservative. If the oil looks good at 3,000 miles we recommend increasing the frequency by 2,000 miles and taking another look at it."

A Used-Car Buying Tool?

A Long Beach, California, company that provides pre-purchase inspections for private parties is breaking new ground by planning to offer engine oil analysis to private-party used car buyers.

"With an oil sample test, which essentially is the DNA of a car's engine and transmission, we can detect any excessive conditions that can lead to serious mechanical problems down the road," said [Alliance Inspection Management](#) Vice President of Sales Eric Widmer.

If the oil sample result meets industry standards, a limited warranty will be offered to the buyer. Edmer said this was the first time an inspection service has used this method to qualify a buyer for a warranty. It would, Edmer points out, provide a level of confidence for used-car buyers shopping for a reliable car.

Stark said that some of Blackstone's customers have sent samples from cars they were considering buying but it's far more common practice with buyers of airplanes, boats, motorcycles or even jet skis.

How To Take an Engine Oil Sample

We took the Mitsubishi samples by sliding under the car, unscrewing the oil filter and draining the oil into a glass jar. The jar was sealed securely, wrapped in padding and FedExed to Blackstone.

Taking a sample in this manner is messy, and you can burn your hand on the hot oil filter. Instead, you'll want to use a vacuum pump that takes a sample through the dipstick opening. Such a pump is available from Blackstone or other oil analysis labs.

ADVERTISEMENT

[Edmunds 2010 Buying Guides](#) [See what's new >>](#)

Ownership & Maintenance

[Where to Find Your Car Owner's Manual Online](#)
[Manufacturer Maintenance Schedules](#)
[Tire Safety](#)
[Technical Service Bulletin \(TSB\)](#)
[Organize Your Car in Five Steps](#)
[More Car Ownership & Maintenance Articles](#)

ADVERTISEMENT

New Is Cheaper Than Used?

Yes, it's true!
Some NEW cars cost less than last year's USED cars.



[See the complete list >>](#)

[More Buying Guides >>](#)

Edmunds Newsletter

Subscribe to the Edmunds Automotive Network Newsletter and enter the \$500 Gas Card Sweepstakes. [Sign up now](#) and enter for your chance to win a **\$500 Gas Card!** [Official Rules](#)

Oil Analysis for Do-It-Yourselfers

Car owners who enjoy [changing their own oil](#) will find oil analysis an inexpensive test and easy to perform as part of engine maintenance. It helps consumers tailor their oil change intervals and experiment with the benefits of [different oils](#) such as synthetic blends. Furthermore, some people might try it as a used car shopping tool next time they are looking for a reliable car.

Then again, there is the pure love of knowledge that such a test provides. For a gearhead, that's an end in itself. "For years and years no one knew when to change the oil, so they went with three months and 3,000 miles," Stark said. "Now, we can provide a service that's a good value to people so they really know what's best for their engine."

More Maintenance Articles



[Corner Garage vs. Dealer Service Department](#)

Your car needs service. How do you choose between independent garages and the dealership? It's a David-versus-Goliath battle in a billion-dollar industry. Here's what you need to know to decide.



[Don't Be Stranded by a Missed Recall Notice](#)

It is important to address any recalls issued for your vehicle. But if the recall notification process breaks down you could be left stranded.



[Interior Motives - The Basics of Interior Detailing](#)

In our second of three installments, we're going to take care of your vehicle's living room -- the interior.



[Is Your Car a Mess? Organize Your Car in Five Steps](#)

Frustrated or embarrassed by the mess in your car? You can organize your car in five simple steps.



[It Takes More Than the Occasional Wash and Wax to Keep Your Car Looking its Best](#)

Like it or not, winter is bearing down upon us and La Nina is promising another round in the welterweight-winter ring. Which means it's also time to get your car ready for the season.

[Home](#) | [New Cars](#) | [Certified Cars](#) | [Used Cars](#) | [Car Reviews](#) | [Tips & Advice](#) | [Car Loans](#) | [Auto Insurance](#) | [Forums](#) | [Inside Line](#) | [Industry News](#) | [Auto Shows](#) | [Your Account](#) | [About Us](#) | [Affiliate Program](#) | [Dealer Inquiries](#) | [Search](#) | [Car Dealers](#) | [Auto Repair Shops](#) | [Glossary](#) | [Directory](#) | [Help](#) | [Contact Us](#)

Edmunds Inc. is hiring! [Employment Opportunities](#)

© 1995-2009 Edmunds Inc.
[Privacy Statement](#) | [Visitor Agreement](#)