

# Industry News

## Missing the Oil Quality Target

*In the early 1980s, General Motors quietly collected 104 samples of engine oil from the U.S. marketplace — and found more than 20 percent of the samples were out of specification in one way or another.*



In 1987, funded first by the U.S. Army and then by oil and auto companies, SAE International began collecting and testing engine oil samples. Its Oil Labeling and Assessment Program collected around 1,800 samples over a six-year

period and reported that questionably labeled products ranged from 7 percent to 17 percent of the pool each year.

Over the program's life, the off spec average was 11 percent.

### Engine Oil Monitoring Results

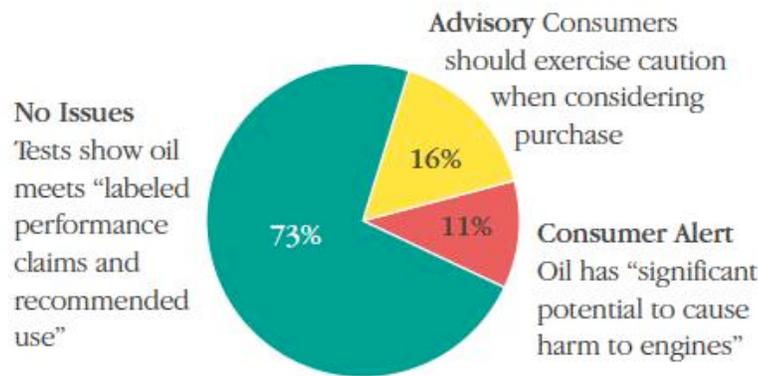
(Combined Packaged and Bulk Samples)

| Year  | API       |             | ILMA      |             | N.C.      |             |
|-------|-----------|-------------|-----------|-------------|-----------|-------------|
|       | # Samples | Out-of-Spec | # Samples | Out-of-Spec | # Samples | Out-of-Spec |
| 2009  | 621       | 14.6%       | 16        | 40%         | 1,563     | 2.6%        |
| 2010  | 636       | 14.7%       | 10        | 25%         | 2,036     | 4.3%        |
| 2011* | 358       | 12.8%       | 75        | 28%         | 2,314     | 7.3%        |

\*through November 2011

### Engine Oil Test Results from PQIA

Total: 126 Samples\*



\*Through April 2012

In 1994, the American Petroleum Institute took up the testing baton with its Aftermarket Audit Program. In 2010, 14 percent of the packaged oil samples it tested did not meet the quality claimed on the label, nor did 16 percent of the samples taken from bulk tanks at distributors and installer outlets. Test results for 2011, while not fully compiled yet, seem to be running in the same groove.

Others monitor quality as well, including regulators in the states of California and North Carolina, the Independent Lubricant Manufacturers Association (since 2007), and the Petroleum Quality Institute of America (since 2009). There's also the privately owned Institute of Materials, which has tested more than 15,000 marketplace samples since 1984.

All together, these organizations paint a picture of off-spec oil that seems perpetually stuck well above 10 percent of what's sold to U.S. consumers.

To be sure, it's no easy task to make oil that's on-spec, points out Ted Selby, technical director of IOM and founder and president of its parent company, Savant Group. "While an oil may be out of spec in only one relatively minor criterion, others may have several out-of-spec areas and thus may have several ways in which they may adversely affect the engine and its use. And some specifications grow more important as the oil is used, while others may be more important when the oil is freshly changed."

He added, "Different sources of specifications such as API, Europe's ACEA, ILSAC in North America and Japan, as well as individual vehicle manufacturer's specifications, can have different criteria and severity levels — sometimes for the same property. Further, different world locations have different levels of need or importance for certain specifications. For example the Middle East and Canada have considerably different needs for low-temperature performance."

## **OEM's Are Watching**

That many U.S. marketplace oils fail to deliver their promised quality is a strong concern for automakers, who follow the testing programs intently, they told Lubes'n'Greases.

"We believe these monitoring programs are very beneficial," stated Ron Romano, Ford's service lubricants technical expert in Allen Park, Mich. "While most look only at physical and chemical parameters, they provide valuable product information and can evaluate manufacturing variability, indicate levels of contamination, etc.

***Physical and chemical tests don't indicate the 'performance' of a product (i.e., deposits, wear control, fuel economy), but we know that an out-of-spec parameter like viscosity can affect the durability and function of an engine.***

Honda R&D Americas' principal chemist Jeff Jetter, in Torrance, Calif., stated, "We build tolerance into our vehicles to accommodate oils that are slightly off-spec. However, oils that are purposely mislabeled are a problem. Ridding the market of such oils will be tough. It would be best to rely on 'natural' market forces to purge such products, but that might prove ineffective."

Diesel engine builders are also alert to marketplace oil quality. "Engine oil performance requirements for advanced engine technology are very demanding," said Shawn Whitacre, chemical technology director for Cummins Inc. in Columbus, Ind. "As such, OEMs and end users have an understandable expectation that the fluid products perform as advertised.

***Even subtle deviations can have significant consequences, especially when they are left unmonitored and when the same out-of-spec fluid is used in a large number of engines, vehicles, or machines.***

"Multiple parties are affected when you consider OEM warranty cost, oil supplier liability, and downtime and lost revenue for the end user," Whitacre went on. "For every component in the system, quality matters."

Bengt Otterholm, lubricants coordinator in Goteborg, Sweden, for Volvo Group's truck technology, which includes Volvo and Mack trucks, echoed that opinion.

***"The margins under which modern heavy diesel engines operate are continuously decreasing due to many factors, e.g. extended drain intervals, increased power density, higher operating temperatures, etc., and it has become increasingly important that engine oils in the marketplace meet the intended specifications."***

## **Pass, Fail, Maybe?**