

# You Can Help the Environment and Yourself by Using Synthetic Oil

## Synthetic Motor Oil Facts

**Fact:** Using synthetic oil gives your engine a longer life.

- Lower engine wear from polyalphaolefin oil (PAO), or PAO blends, results in longer engine life and fewer oil changes.
- The thinner synthetic oil meets the new performance demands for engines that operate at higher temperatures and have tighter clearances between engine parts.

**Fact:** Using synthetic oil decreases maintenance costs and helps the environment by reducing the used oil waste stream.

- By using a full PAO synthetic oil, oil change intervals can be extended up to 25,000 miles. The difference in the oil change intervals for synthetic blends range from 7,500 miles to 25,000 miles. However, you should check your engine manufacturer's recommendations because they can vary.
- The cost of synthetic oil is typically \$6 per quart as compared to \$1 per quart for traditional motor oil. Balanced against the longer oil change interval, using synthetic oil becomes less expensive in the long term and more expensive in the short term.

**Fact:** Not all products labeled “synthetic” oil are the same. Following are three types of synthetic oil:

- Full PAO synthetics.
- Synthetic oil derived from extensively processing petroleum oil basestock.

- Synthetic blends derived from blending traditional petroleum-based oil with extensively processed petroleum oil basestock or PAO.<sup>1</sup>

One of the few true PAO motor oils is Mobil 1. Most manufacturers now use a petroleum oil basestock and market the product as synthetic motor oil. Consumers now cannot easily distinguish a full PAO synthetic from a synthetic blend.

## Auto Manufacturers Take Action

Engine manufacturers are being required to meet cleaner air emission standards and higher fuel efficiency standards. Because synthetic motor oils offer the qualities to meet these new performance demands, engine manufacturers either require or allow the use of synthetic oil. Synthetic oil reduces engine maintenance costs without reducing engine performance.

## Labeling Requirements Allow Broad Definition for Synthetic Oil Labels

The U.S. labeling rights to use the term “synthetic oil” were given exclusively to lubricants formulated with polyalphaolefin. The term “synthetic” was expanded to include extensively treated petroleum-based oil.<sup>2</sup> Currently, the oil industry has developed three methods to develop a synthetic oil product that meets the “synthetic” definition: 1) full PAO synthetics, 2) extensively processed petroleum oil basestock, and 3) blending traditional petroleum-based oil with extensively processed petroleum oil basestock or PAO.

### **Extensively Treated Petroleum Oil Base Stock**

Synthetic oil is derived from a crude oil source, as is allowed under current labeling. The use of the improved petroleum base oil is now increasing among lubricant suppliers that market the product as synthetic engine oils. Promoted as equivalent to PAO synthetic oils, these extensively treated mineral base oils will likely gain major inroads as automobile manufacturers strive for higher efficient engines with reduced maintenance and longer oil change intervals.

### **Full PAO Synthetics**

PAO synthetic oils are a special class of basestock. The raw product is decene, a linear molecule with 10 carbons. It is produced through a chemical process using ethylene that links additional carbon molecules together to produce decene. By adjusting the manufacturing process, PAOs can be made in a wide range of viscosities. PAOs are the most widely-used synthetic industrial lubricants available today.<sup>3</sup>

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<sup>1</sup>“New Lubes Last Longer,”

[www.machinerylubrication.com/article\\_detail.asp?articleid=618&relatedbookgroup=Lubrication2](http://www.machinerylubrication.com/article_detail.asp?articleid=618&relatedbookgroup=Lubrication2), Sept. 30, 2004.

<sup>2</sup> “Selecting Synthetics for Off-Highway Crankcase Applications,”

[www.machinerylubrication.com/article\\_detail.asp?articleid=311&relatedbookgroup=Lubrication](http://www.machinerylubrication.com/article_detail.asp?articleid=311&relatedbookgroup=Lubrication), Sept. 30, 2004.

<sup>3</sup> Ibid.

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