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SP268-Q-Synthetic Motor Oils

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Small Engines

Synthetic Motor Oils

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Synthetic motor oils raise many questions of quality and price when compared to conventional petroleum-based motor oils. Synthetic motor oils are purported to be much better than petroleum-based oils and the price difference is substantial. Can engine owners justify the increased price for synthetic oils? The following facts and information may assist you in making decisions on selection and use of synthetic motor oils for your lubrication needs.

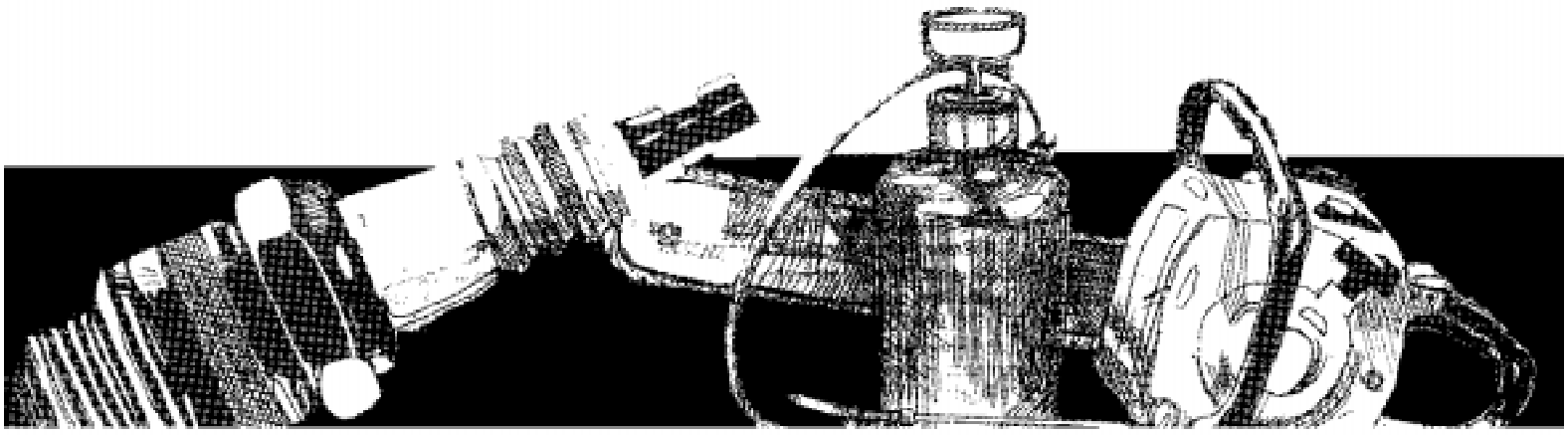
Synthetic oil is a product made by scientists under controlled conditions. Synthetic oil is a pure, idealized lubricant made from select chemical basestocks and additives. It is engineered to perform under rigorous conditions and extreme temperatures. The molecules in synthetic oil are all the same size and shape. Synthetic oil is blended with a higher degree of lubricity. It is slicker. It contains more cleaning agents to keep the inside of engines clean longer. It contains less additives that can break down under adverse conditions, such as excessive heat and pressure. It contains no waxy contaminants that reduce lubrication in cold temperatures.

Natural petroleum-based motor oils are found in nature and contain natural contaminants. Oil refineries take crude oil from an oil well and refine it by removing some of the contaminants and adding chemical additives to improve the performance and quality of the oil. However, some contaminants such as wax, which is difficult to remove in the refining process, remain in the oil. Natural oil is comprised of a mixture of hydrocarbons of assorted sizes and shapes.

Comparison of Synthetic Oil to Petroleum Oils

1. Synthetic motor oils will withstand higher engine temperatures than petroleum oils — 600 degrees F, as compared to 450 degrees for petroleum oils.

2. Synthetic oils will begin lubrication at lower temperatures than petroleum oils — about -35 degrees, compared to about -20 degrees for petroleum oils.



3. Synthetic oils contain molecules of the same size and shape, which reduces volatilization of molecules compared to petroleum oils.

4. Synthetic oils contain more detergent additives, which allows more cleaning of internal engine parts than petroleum oils.

5. Synthetic oils are slicker than petroleum oils, which means less wear and tear, cooler engine temperatures and better performance.

6. Synthetic oils are more resistant than petroleum oils to molecular chain shear, which reduces lubrication and cooling capability of the oil.

7. Synthetic oils form fewer deposits inside the engine than petroleum oils.

Precautions When Using Synthetic Oils

1. Break in new engines with petroleum-based oils to allow moving parts to fit together before using synthetic oil. Automobile engines should be operated at least 6,000 miles before changing over to synthetic oil. Small engines such as lawnmowers and garden tractors should be used a minimum of 50 hours before switching to synthetic oil.

2. Do not use synthetic oils in older engines that are known to have heavy sludge deposits on internal engine parts. The synthetic oil may clean up false seals and actually cause the engine to leak or start consuming oil.

3. Do not use synthetic oils in turbocharged engines unless specifically recommended by the engine manufacturer or the oil manufacturer.

4. Be sure to use the same viscosity synthetic oil as the petroleum oil recommended for your engine.

5. Use the same oil change interval for synthetic oil that you would use for petroleum oil, unless you have an oil analysis done at each oil change. If so, follow recommendations with the oil analysis results.

6. Do not use synthetic oil in diesel engines unless specifically recommended by the engine manufacturer.

Compatibility with Petroleum-based Oils

Synthetic oils are completely compatible with petroleum-based oils. You can mix at any ratio with no problem. In fact, many users blend their oil to offset the extra cost of fully synthetic oil and still get some benefits of synthetic oil. A blend of 50 percent synthetic oil and 50 percent petroleum oil is a common mixture, but any amount of synthetic in the blend will improve the overall quality of the mixture.

Synthetic oil is better than petroleum-based oils. The decision to pay the difference in price is yours. The application you have for the oil may help you make your decision. Hardworking engines under full load in hot temperatures will benefit most from synthetic oils. Those living in cold climates will also benefit from almost instantaneous lubrication in cold engine-starting temperatures.

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