

19 August 2015
Press Release

Choosing the correct engine oil

When choosing engine oil it is vital to fully understand the engine and the oil best suited to it, otherwise you may not get ideal performance or even cause costly damage. Independent, innovative condition monitoring and fluid management expert Techenomics provides tools to help determine the best oil to use.

Techenomics' CEO Chris Adsett says oil must always reduce friction and not waste useful power from conversion of kinetic energy into heat. "Oil reduces wear by protecting internal engine parts and lack of oil or incorrect oil leads to lower efficiency and engine degradation, which can lead to higher fuel consumption, decreased power and engine failure."



Chris Adsett, CEO of
Techenomics International

Vehicles have an owner's manual providing information on manufacturer specifications required for oil used in that vehicle. Chris Adsett says this should be followed and it is inadvisable to go against the recommendations by choosing different oil.

He says many older vehicles have push-rod engines with flat tappet camshafts and these need oil that contains ZDDP (Zinc Dialkyl Dithio Phosphate), a zinc additive that provides ant-scuff wear protection. "Most of today's oils do not contain adequate ZDDP levels for these engines, so owners need to look for oil that contains this additive, or use racing engine oil with this additive."

Engine oils are certified by up to three different organisations which ensure they meet certain specifications such as quality, viscosity, operating temperatures, energy conservation and fuel economy tests. The organisations are the American Petroleum Institute (API), International Lubricant Standardization and Approval Committee (ILSAC) and European Automotive Manufacturers Association (ACEA).



SOLVE YOUR LUBRICATION PROBLEMS

Click here to get a free consultation from expert Techenomics staff on the most suitable lubricants for your application

Chris Adsett says an important consideration in choosing oil is viscosity which depends largely on where the engine operates. "Temperatures play a large part in viscosity as oil thins when heated and thickens when cooled. Engine start-ups are extremely important as oil must be thin enough when cold to flow through thin gaps, minimising metal to metal contact. It must be able to flow adequately at its expected lowest temperature.

"In oil with a viscosity grade of 10W-30, the W indicates what the viscosity grade will be in winter or when the oil is cold and in this example it is 10 degrees and in summer, or at operating temperatures, it will be



30 degrees.” Most commonly used oils are 5W-20, 5W-30, 10W-30 and 10W-40 which cover most light-duty vehicles on the road today.

Chris Adsett advises to always check the owner’s manual to get the API rating, viscosity grade and whether to use mineral, semi-synthetic or full synthetic oil. The qualities are:

- **Mineral oil** - A cheaper alternative containing many variations of additives and a lot of VI improver. They consist of group I and II base stock oil.
- **Semi-Synthetic** - Contain a mixture of mineral and full synthetic base stock oil. Most have added VI improvers, which allow the oil to have the designated base oil viscosity when cold and second grade viscosity when hot.
- **Synthetic oil** - Superior enhanced performance oils which protect against deposit formation, have superior lubricity at high temperatures and better, more even flow at low temperatures. They are made up of either group III, IV and V base stock oils which are higher in purity and gain better property control over lower base stocks. With higher VI they do not need much VI improver additive added which allows greater control over thermal and mechanical degradation as oil ages.

Techenomics can provide the information needed to select engine oil that provides high performance, low fuel consumption, good start-up capabilities, low wear and stable viscosity. Techenomics has no control over the price paid for oil and suggests the best idea after identifying the most suitable oil, is to shop around and don’t be afraid to ask questions.

Further information about engine oil is available from Chris Adsett – c.adsett@techenomics.com or Sam Kurup – sreejith.b@techenomics.com