



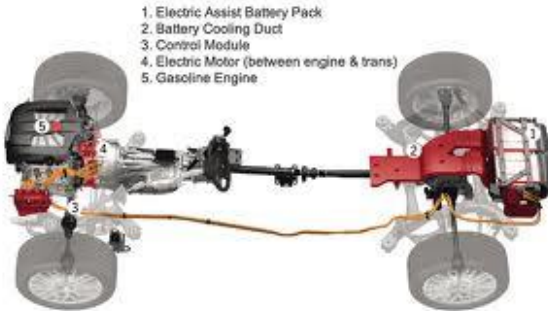
TECHNICAL BULLETIN

Hybrid Engine Oils

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What is "Hybrid"?

A "Hybrid" drive system is a power train that utilises a non-combustion engine i.e. Electric Motors to perform part or all of a vehicles system drive. Most "Hybrids" consist of electric engines powered by rechargeable batteries in conjunction with some type of internal combustion engine. These systems are referred to as "HEVs" (Hybrid Electric Vehicles). The combination allows the electric motor and batteries to help the conventional engine operate more efficiently, reducing fuel use. Meanwhile, the combustion engine overcomes the limited driving range of some full electric vehicles.



Most HEV's contain an internal combustion engine of similar size and performance to a standard combustion engine vehicle. This is needed for when rechargeable batteries that power the electric motors discharge. The combustion engine needs to be able to power the vehicle and recharge the battery packs for the electrical engine.

The question raised here, what type of oils are needed for Hybrid engine vehicles?

The internal combustion engines in these vehicles operate exactly the same as normal combustion driven vehicle except that they may need to cope with –

- 1) Extra load or drag from generators to charge battery packs
- 2) Heavier net vehicle weight (Due to batteries and electric drivetrain systems)
- 3) Stop / Start or "Idle Stop" technology that starts and stops the combustion engine.

Manufacturers generally have specifications and recommendations for these engines which are similar to standard production engines. Most are modern, fuel efficient power plants that require fuel efficient, late specification engine oils. These oils can be synthetic, semi synthetic or mineral based oils as long as they meet with the manufacturers specifications.

At Penrite we recommend that you follow the manufacturer's recommendations for each particular vehicle. Some oils are very much suited to the modern Hybrid vehicles and a list of these follows. The Penrite recommendation guide will assist you in finding the right oil for your Hybrid vehicle.

Recommended Hybrid Engine Oils

Synthetic

ENVIRO+ GF-5
 ENVIRO+ 5W-20
 ENVIRO+ 0W-20
 ENVIRO+ HYBRID 0W-16
 HPR 0 0W-30
 PRO 5 5W-30

Semi Synthetic

VANTAGE SEMI 5W-30
 PRO 10 10W-30
 VANTAGE SEMI 10W-30

Mineral

VANTAGE 5W-30
 VANTAGE 10W-30
 PREMIUM MINERAL 5W-30
 PREMIUM MINERAL 10W-30



Penrite recommend "The Right Oil for the Right Application"

[Click Here](#) to visit the Penrite Recommendation Guide, which will ensure you receive the correct oil for your application

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