



# TECHNICAL BULLETIN

## What is Extra 10?

Issue: November 2014

### What is "Extra 10"?

Every multigrade engine oil has two numbers in its SAE Viscosity. Examples of this are 5W-30, 10W-40 & 20W-50. The first number in the sequence followed by the "W" is the oils cold starting viscosity eg (5W-?) where the "W" stands for "Winter".

The second and higher number in the sequence is the oils operating temperature eg (?W-40). The second number in the SAE viscosity sequence is measured at 100<sup>0</sup> Centigrade. The higher the second number, the less the oil thins out when the engine gets to operating temperature.

The Penrite "Extra 10" increases the operating temperature of the oil from the normal SAE ratings to a higher level. Where 5W-30 is normal, Penrite will make a 5W-40, 10W-40 will become 10W-50 on so on. This is the **Penrite Extra 10!**

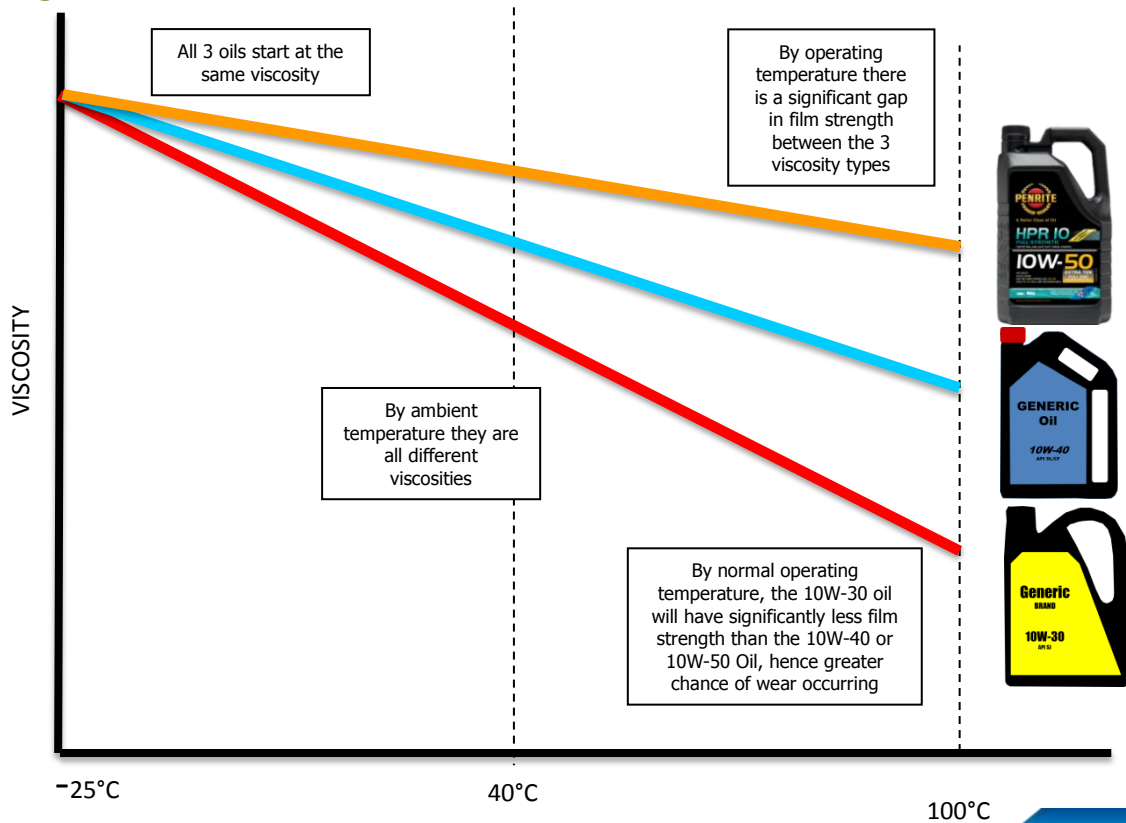
### Why do we do this?

With all engine oils, as the engine warms up, the oil gets thinner as it gets hotter. The thinner it gets, the less film strength there is between moving parts. To protect the engine from wear, the less the oil thins out, the better the film strength and hence less chance of wear on the internal engine parts. This is particularly important if the engine is placed under severe operating conditions such as towing, competition, stop/start conditions, heavy traffic or operates in high ambient temperature conditions such as we experience in Australia and the Asia Pacific region.

### Is Extra 10 New?

No, Extra 10 is not new. In fact Penrite developed "Extra 10" back in the early 1980's when developing oils that were suitable to the warmer climatic conditions found in the Asia Pacific region. Oils suitable for the colder European and North American conditions were not suitable for vehicles running in Australia and were the cause of many problems in some engines. HPR 50 developed by Penrite owner John Dymond, was the first product to have the "Extra 10" to greatly increase the life span of engines during this period. HPR 50 was followed by HPR 40, the HPR 30, that all featured this extra protection.

Figure 1



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Figure 1 below shows how 3 different oils operate. They all start off at the same viscosity but as they heat, they have all thin out at different rates. The less the oil thins out as it heats, the less chance of wear occurring due to low oil pressure and film strength.

Figure 2 shows how the "Extra 10" in the oils heat range improves the film strength of the oil at operating temperature. As the oil heats up and thins out, the heat build up can cause a breakdown of the oil. This results in increased friction, increased temperatures and oil breakdown that can that can be the cause of unwanted engine damage. Penrite products with the 'Extra 10" and superior heat range are not as likely to break down and cause friction due to heat build up as do lower rated oils.

A video on this can be seen on the Penrite Web site – <http://www.youtube.com/watch?v=5oHiykx54Y&feature=youtu.be>

Figure 2



**What Penrite products feature the "Extra 10"?**

The HPR Engine range features Extra 10 Technology. This is exclusive to this range of products

Oil Type	Product Name	Specifications	Penrite Viscosity	Replaces Viscosities
Synthetic	HPR 0	API SL/CF ACEA A3/B3	0W-30	0W-20, 5W-20
Synthetic	HPR 5	API SN/CF ACEA A3/B4 JASO MA	5W-40	5W-30, 10W-30
Synthetic	HPR 10	API SN/CF ACEA A3/B4	10W-50	10W-40, 10W-30, 15W-40
Synthetic	HPR 15	API SN/CF ACEA A3/B4	15W-60	15W-40, 20W-40, 20W-50
Mineral	HPR 30	API SM/CF ACEA A3/B3	20W-60	20W-50
Mineral	HPR 40	API SL	25W-70	25W-40, 25W-50, 25W-60
Mineral	HPR 50	API SL	40-70	25W-60
Mineral	HPR Gas	API CG-4/SL, JASO MA	20W-60	20W-50
Semi Synthetic	HPR Gas 10	API CI-4/SL ACEA A3/B3, JASO MA	10W-50	10W-40, 10W-30, 15W-40
Mineral	HPR Diesel	API CH-4/SJ A3/B3/E7, JASO MA	20W-60	20W-50
Semi Synthetic	HPR Diesel 15	API CI-4 PLUS/SL ACEA A3/B4/E7, JASO MA	15W-50	15W-40, 20W-40, 20W-50
Semi Synthetic	HPR Diesel 10	API CI-4 PLUS/SL ACEA A3/B4/E7, JASO MA	10W-40	10W-30
Semi Synthetic	HPR Diesel 5	API CI-4 PLUS/SL ACEA A3/B4/E7, JASO MA	5W-40	5W-30



Further details on these products are available on their respective product information sheets found on the Penrite web site: [www.penriteoil.com.au/products](http://www.penriteoil.com.au/products)

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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