

## **ACEA C1 TO C4 AND ENVIRO+ APPLICATIONS**

We have received some enquiries from customers regarding the use of **ENVIRO+** in older engines on the basis that it is a synthetic oil.

**ENVIRO+** must not be used in older engines unless the handbook specifies API SM or ILSAC GF-4 or ACEA C1/C2/C3/C4. Under no circumstances should **ENVIRO+** be used in motorcycles, small engines (mowers etc) or marine outboard engines.

This is because these specifications are all low SAPS specifications – the key being the “P” which is phosphorus. The low phosphorus levels translate to low zinc levels and the levels are low enough that they may lead to wear in flat tappet cam engines and even in roller cam engines of earlier vintages.

ACEA “C” explained.

The “C” stands for “catalyst compatible”. These oils are designed for light duty petrol and diesel engines fitted with the latest generation of emissions systems such as long-life catalysts and/or exhaust particulate filters (DPFs).

ACEA C1 has phosphorus levels of 0.05% maximum (or about 0.055% zinc). These oils should not be used even where API SM or ACEA C2/C3 oils are required as they may not adequately protect the engine. Mainly for Mazda and Ford diesel engines.

ACEA C2 and C3 have phosphorus levels of 0.07% to 0.09% and most oils tend to meet API SM as well. (API SM is 0.06% to 0.08% phosphorus).

ACEA C4 is similar to ACEA C1 but with some changes to limits required by Renault. Like C1, C4 cannot meet API SM.

For all these grades, the oxidation, deposits and oil life parameters are similar to A3/B4 but special tests are added for wear protection using different engines.

So unless our Recommendations Book actually lists **ENVIRO+** as an option, **ENVIRO+** is **not** to be used if a synthetic oil is required. The Penrite **SIN** range or **Everyday Synthetic** range must be used to ensure complete protection of the customer’s engine.