

DETERMINATION OF COPPER STRIP CORROSION OF BIODIESEL AND DIESEL FUEL

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C rude petroleum contains sulphur compounds and most of them are removed during the refining process. The presence of some sulphur compounds remaining in the diesel fuel can have a corroding effect on various metal parts of the diesel fuel engine. As copper is susceptible to corrosion, it is used as an indicator of the corrosiveness of a fuel.

PRINCIPLE

The copper strip corrosion test covers the detection of the corrosiveness of the fuel on copper. This test is based on the effect of the test sample on a polished copper strip. The polished copper strip is immersed in a specific volume of the sample being tested, and heated under conditions of temperature and time that are specific to the class of material being tested. At the end of heating period, the copper strip is removed and washed. The colour and tarnish level are assessed against the corrosion standards according to EN ISO 2160 (1998) and ASTM D 130 (2004).



Figure 1. Copper corrosion tester.

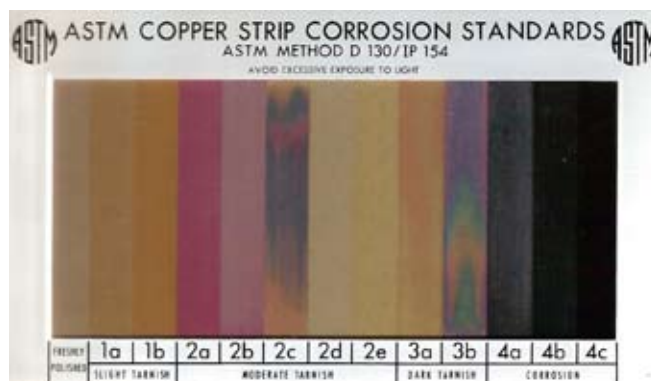


Figure 2. Copper strip corrosion standards.

Amount of sample : 30 ml
required

Cost of analysis : RM 100 per sample*
(*as at June 2009; subject to change).

REFERENCES

EN ISO 2160 (1998). *Petroleum Products – Corrosiveness to Copper - Copper Strip Test*. European Committee for Standardization.

ASTM D 130 (2004). *Standard Test Method for Corrosiveness to Copper from Petroleum Products by Copper Strip Test*. American Society for Testing and Materials.



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