



Member of Cortec® Corporation Group



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Project # 23-010 Compatibility testing Petronas obz Hydra 46 oil with M-531

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Project #: 23-010.bis

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Background:

Customer is performing pressure tests on hydraulic cylinders used typically inside mills for the production of steel and aluminum coils. The test goal is to investigate the compatibility of M-531 mixed at 5% with the pressure test oil. The oil used for the pressure test is PETRONAS OBZ HYDRA 46, a sample was sent to Eco Cortec laboratory.

Sample Received:

Sample received in good condition (about 500 mL)
PETRONAS OBZ HYDRA 46

Method:

- Compatibility of Cortec Additives with test oils (CC-013)

Materials:

1. M-531 lot#029121

Procedure:

Testing was carried out according to the standard compatibility test procedure. M-531 was mixed at 5% with the submitted oil sample.

Two samples of the submitted oil were mixed with M-531 and inspected for any signs of incompatibility. One sample mixture was placed in an oven at 80 °C (± 2 °C) and the other was placed in a refrigerator at 5 °C (± 3 °C).

Samples were allowed to condition for 7 days. After the conditioning time, samples were removed from the oven/refrigerator and allowed to reach room temperature and again inspected for signs of incompatibility.

Fluid samples were placed back into the respective test conditions and the 7-day conditioning was repeated. After the two-week period, samples were removed from the oven/refrigerator and inspected one final time for signs of incompatibility.

Results:**Table 1:** Oil compatibility results

Additive	Oil Sample	Conditions	Observations	Compatibility
M-531	PETRONAS OBZ HYDRA 46	HOT	--	Compatible
		COLD	--	

Photos:

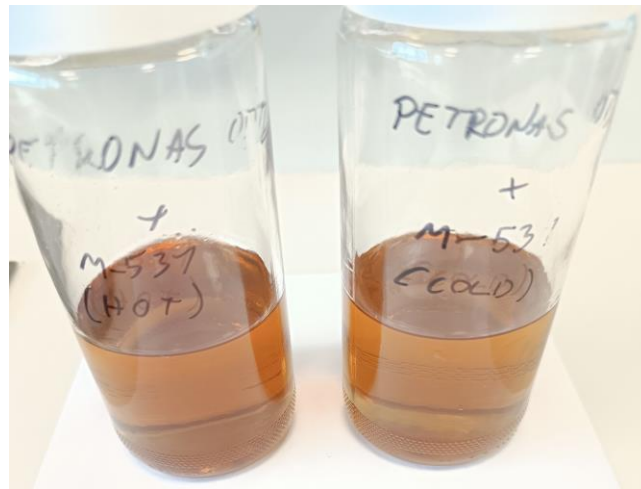


FIGURE 1: Petronas Obz Hydra 46 with the added M-531



FIGURE 2: Petronas Obz Hydra 46 with the added M-531 after conditioning for 1 week

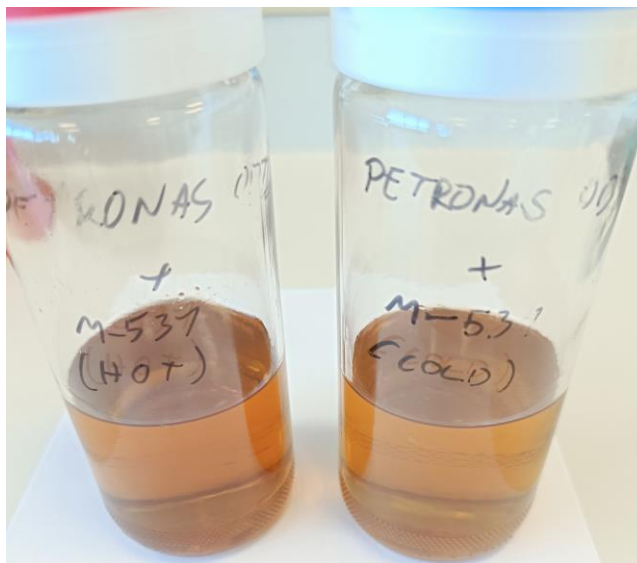


FIGURE 3: Petronas Obz Hydra 46 with the added M-531 after conditioning for 2 weeks

Interpretations:

After 14 days of testing in both hot (80°C) and cold (5°C) conditions, the submitted oil showed no signs of incompatibility with M-531 at 5%. No gelling, color change, or signs of reaction were observed in tested sample.