

Paratherm™ AP

Antioxidant Protection

Hot-Oil System Additive

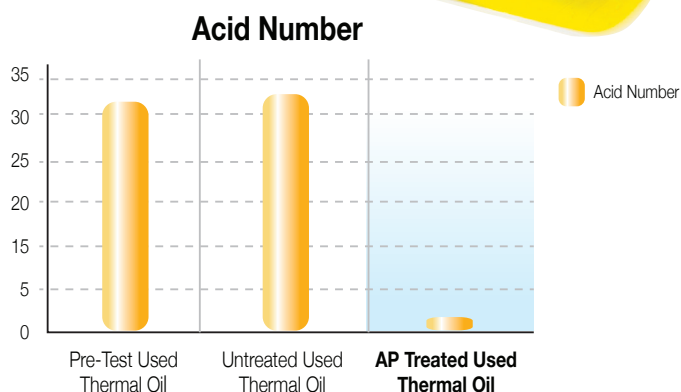
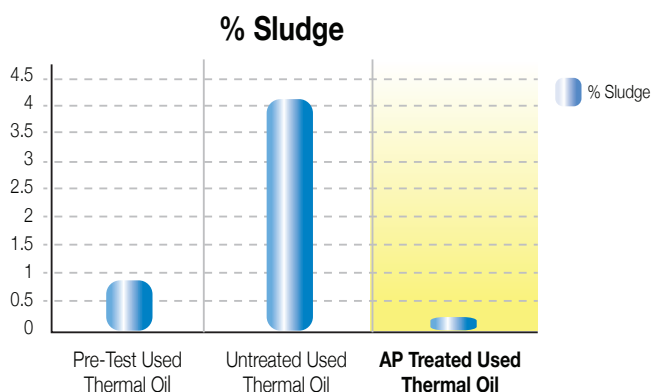
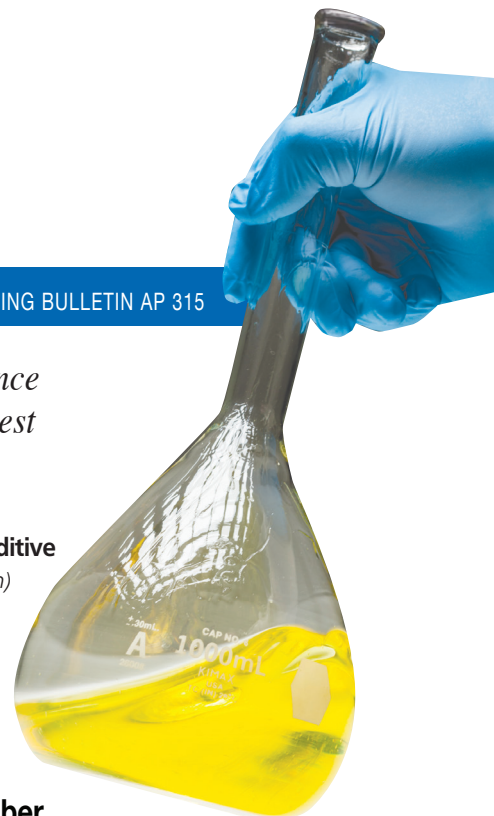
ENGINEERING BULLETIN AP 315

Oil oxidation is the leading cause of premature oil failure. Regular maintenance and monitoring can help prevent problems, but it's not always convenient to test your system and take necessary preventive action.

Extend Your Thermal Fluid's Life

Paratherm AP (Antioxidant Protection) can stop the sludge formation caused by acids (as measured by the Acid Number) in existing thermal oil. A sample of used thermal oil was spiked with 10% Paratherm AP and then subjected to accelerated oxidation testing to simulate long term exposure in hot expansion tanks (ASTM D2440-13**). The test results are shown in charts below.

Paratherm™ AP Additive
(Antioxidant Protection)



The test results show that the AP additive effectively stopped sludge generation dead in its tracks.

****The test protocol involves bubbling pure oxygen thru a sample maintained at 100°C with a copper coil inserted in it for 164 hours.**

Paratherm AP Additive Inhibits Acid and Sludge Formation

Acids are the raw materials for almost all thermal system hot oil problems. Produced in the expansion tank, they react in the heater to form carbon along with soluble polymers that cause the viscosity to increase. This carbon builds up in expansion tanks and also plugs small diameter tubing while the viscosity can increase to the point where the oil will gel when cooled.

The problems start when the thermal oil is heated and exposed to air inside the expansion tank. The heat can come from conduction through

connecting pipe that is insulated, warm-up valves that are left open or even exposure of the tank to direct sun light if it is painted a dark color. Once the Acid Numbers reaches 0.4, the acids begin to react.



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