

## CASE STUDY

### PREVENT THERMAL OIL SYSTEM ADHESION (CARBON BUILD-UP) AND STABILIZE OIL ACIDIFICATION ON THERMIC OIL SYSTEM AT AVEBE TER APELKANAAL

#### PARTIES & INDIVIDUALS:

Avebe Ter Apelkanaal, Hans Stuuat, Site Project Manager  
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#### PERIOD:

March 2012 - Present.

#### BACKGROUND:

Avebe uses thermal oil in a closed system for one of its manufacturing processes. Thermic oil is used to maintain temperature of molten media, such as plastics or similar. Due to the high temperature of the thermal oil (more than 200 degrees Celsius), carbonaceous deposits are formed. These deposits adhere to the inside of the piping inhibiting fluid flow and can eventually lead to a complete blockage in the system. These blockages cause considerable downtime and disruption in the production process, resulting in excessive yet unnecessary expenses. Furthermore, the carbon build-up and contamination causes excessive wear to the fluid pumps.

#### OBJECTIVES:

To remove existing and prevent further carbon build up.

#### PRODUCTS USED:

After cleaning out the system with AR2300, 160 litres of Archoil AR2100 Nanoborate Thermic Fluid Treatment was added to 2000 litres of thermal oil and mixed together before being added to the system.

#### ACTION:

Nanoborate AR2100 effectively removes existing carbonaceous deposits whilst reacting with metal surfaces to reduce friction to a COF of <0.0375. This prevents future adhesion of carbon and varnish-formation inside the system. Flocculation in the oil is also prevented. The attached sludge layer in the ducts and pumping system is slowly released. The addition of the Nanoborate technology also provides substantial lubrication to protect the pumps and other components.

#### RESULT:

All blockages and deposits removed resulting in reduced maintenance. Zero clogging or unscheduled stops. Significant prolongation of the oil's standing time. Tested with low metallic PPM count and favourable TAN values when compared to the original fluid.

#### PRODUCTS TESTED

Archoil AR2300 Pro Fluid System Cleaner  
Archoil AR2100 Nanoborate Thermic Fluid Treatment

