



## understanding-fluid-extruder



### MAXIMIZING SERVICE LIFE OF THERMAL OILS IN EXTRUDERS

All thermal oils have a limit as to how long they can be effectively utilized in an extruder. The key factor affecting service life is mainly the type of fluid being used; however, process temperatures and production rates also play a role in determining the optimal length of time between fluid changes.

Selecting the right thermal oil – one intended for an extrusion application – is always the best place to start when trying to achieve maximum service life. While there are a variety of fluids to choose from, only a few fluids contain the additives necessary for a fluid to be able to withstand the demanding thermal cycles and air contact an extruder is subjected to day-in and day-out.

To keep an extruder running at peak production rates, it is vital that a fluid analysis program be implemented to track the life cycle of the thermal oil and determine a change-out interval best suited to meet the application's demands. We encourage all our customers to take advantage of our no-charge fluid analysis program as a way to measure and interpret fluid performance over time.

#### Maximizing Fluid Life

All thermal oils degrade with time and if not changed at an appropriate interval, they will deteriorate to the point where they will start to leave deposits. The key is finding the right balance between maintenance schedules and production requirements.

To help understand the stress an extruder puts on a fluid consider this, the same fluid that would last possibly 3500 hours in an extruder application could last upwards of 12 to 15 years in a larger thermal oil system with no exposure to air.

There are a number of factors involved that lead to thermal oil breakdown but there are also some easy techniques that can be applied to maximize your fluid's in-service life.

#### Thermal Oils Generally Breakdown In Two Ways: Oxidation Or Thermal Degradation

**Oxidation** starts to take hold quite rapidly when the heated fluid – with a temperature in excess of 93°C (200°F) – comes into regular contact with air. While oxidation is nearly unavoidable, this can be a major problem in reservoirs where the thermal oil is not suitably cooled before it's returned to the tank.

Heat exchangers are an integral part of the system loop as they help to keep the fluid in the tank at a manageable temperature to minimize oxidation – under the 93°C (200°F) threshold. If for some reason they get fouled on either the water or fluid side, their reduced efficiency can have a substantial impact on the tank temperature and consequently the fluid's service life. Regularly checking the tank or reservoir temperature with a temperature probe is the easiest way to determine whether your system's heat exchanger is operating efficiently.

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Caption:

Description:

Dimensions: x