Sludge Series Part I: What Causes Sludge in Your System?

You may have seen it before; that thick, black stuff at the bottom of your tanks and reservoirs and on the pipe walls. It's sludge and it's one of the most preventable issues with heat transfer fluids. In this 3-part series we're going to tackle what causes sludge, how to avoid it and how to clean it up.

Sludge is usually the result of oxidation and one of the main causes of fluid degradation in industries like plastics extrusion, die casting, blow molding or any other application where a system is exposed to the atmosphere (oxygen).

In simple terms, oxidation is a reaction that occurs when hot fluid comes into contact with air. Most fluids will experience oxidation above 200°F, but for every 15° increase in temperature above that, the rate of oxidation typically doubles.

So what does it do to the fluid?

During the process of oxidation larger molecules are formed in the fluid. These molecules eventually combine to form what's commonly referred to as sludge. The result is a thicker, more viscous fluid that's harder to pump. It will also have poorer heat transfer characteristics and elevated acidity (TAN).

All told, sludge can seriously impair your productivity and cost you money. So how do you avoid it? We'll tell you in our next installment.

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