

## Basic Considerations for Fluid Selection

There are many important factors to consider when selecting a thermal fluid. Beyond simply matching a fluid's performance to your needs, you'll need to weigh the following:

### Operating temperature range

It's essential to select a fluid that can handle your maximum operating temperature, but don't forget about low temperatures. A fluid will thicken as temperatures drop (viscosity increases,) so it's important to make sure your pump can move the fluid at the lowest temperature it might be used in. This is especially important for system start-ups and outdoor applications in cooler climates.

Also, if the application calls for any low-temperature cooling cycles, you should consider the thermal fluid's performance at those required temperatures as well.

Oxidation occurs when hot fluid (>200°F) reacts with oxygen. Some systems are more at risk of oxidation than others. Your chosen thermal fluid should offer protection from oxidation ([antioxidants](#)) if this is the case.

### Fluid cost vs. service life

Weigh your options based on the service life you need or expect vs. the cost of the fluid. This will help you find the fluid that fits your needs and your budget.

Consider the long-term value of selecting a thermal fluid with the longest possible service life. The costs of downtime, maintenance, labor and fluid disposal associated with short-lasting, cheaper fluids can be far more expensive than the cost of choosing a better fluid in the first place.

### Specific application requirements

Some applications have special requirements that will dictate the type of fluid to use such as:

- Food-grade applications that require fluids to meet USDA or other food ratings;
- High flash point fluids needed to meet fire safety or insurance regulations;
- Applications that require extreme oxidation resistance, such as [open baths](#).

This should cover the basics of fluid selection, but of course each application is unique so please [let us know](#) if you have any questions or need more detailed information.

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