

High Temperature Performance

15th June 2021

To Whom It May Concern:

Silicones have extraordinary properties when exposed to extreme temperatures. Standard General-Purpose grades can withstand -60°C to $+200^{\circ}\text{C}$. With the addition of a heat stabilizer this can be increased to $+250^{\circ}\text{C}$ and with special grades up to $+300^{\circ}\text{C}$ is possible.

Designers and Engineers are reminded that Silicone requires the presence of oxygen to achieve such extremes. In the absence of Oxygen, Silicones will suffer reversion and deteriorate at a much lower temperature.

Using Silicones at the extremes of their capabilities will naturally limit the life of the product through heat ageing and application performance can vary depending on the stresses applied at the time.

As an example, customers that want to use a Silicone product for long periods at $+240/+250^{\circ}\text{C}$ will benefit from using a $+300^{\circ}\text{C}$ Silicone rather than one for $+250^{\circ}\text{C}$.

It should also be said, that in presence of Steam Silicones can deteriorate much quicker and at much lower temperatures than their initial given figures. They might get brittle, especially when combined with high pressures.