

Many different factors must be considered when choosing a lubricant for a particular application, amongst these is the minimum, maximum & nominal temperature of the environment in which it is expected to work.

Often lubricants are expected to work continuously at a level too close to their maximum or minimum temperature capabilities. This can lead to inefficient operation, premature wear, component failure and expensive repairs and downtime.

If we consider an oil as a fluid and a grease as an oil or fluid within a thickener (which acts like a sponge) It is easy to understand that the viscosity or 'thickness' of the oil at the operating temperature becomes critical to the correct operation of the film of lubricant.



If it is too thin at higher temperatures then it will not provide an adequate lubricating film under load, however if at lower temperatures it becomes too thick or even freezes then it will make it more difficult or impossible to shear the film. In some cases it can seize the component solid.

It is also necessary to consider the other operating parameters of the application when choosing a suitable product. For example the speed, loads, materials employed, sealing system design, moisture, chemicals & other factors are equally important.



## Cryogenic Gas Tanks

IKV Group offer a full range of low temperature lubricants including oils, greases and dry film coatings, specifically developed for applications in cryogenic and extreme low temperature environments. Often the lubricant, whether oil grease or dry film is expected to operate in a wide operating temperature range, including extreme high and low temperatures. In these situations which are often even more demanding of the lubricant, IKV can offer fluorinated (PFPE) oils and greases for operating temperatures from  $-90$  to  $300^{\circ}\text{C}$ .

IKV also offer dry film coatings which will work at much even more extreme temperatures.

Please don't hesitate to [contact us](#) should you wish to discuss your prospective application or problem, we offer a full service and can perform testing relative to your operating parameters.