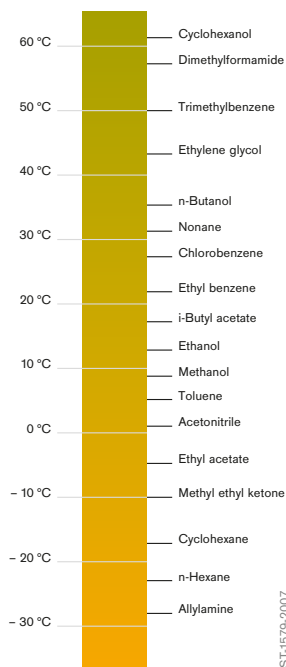


2.8 Flash point of flammable liquids

Although we speak of flammable liquids, in fact, the liquid state is not flammable. It is the vapor, which can form a flammable mixture together with the oxygen in the air. Both the volatility of this vapor and its lower explosion limit (LEL) comprise the measure of its potential danger. This is described by what is known as the flash point.

To be able to ignite at all, the concentration of vapor above the surface of the liquid must exceed the LEL. Whether it does so or not depends on how much vapor is produced. This, in turn, depends on what is known as the vapor pressure, which depends upon the temperature of the liquid. In safety terms, this is described by defining a flash point (F). The flash point is the temperature at which sufficient vapor forms to create a vapor-air mixture, which can be ignited in a standardized apparatus. If a flammable liquid's flash point is above 50°C (122° F), then it definitely cannot be ignited at a temperature of 30°C (86° F).

Therefore, the lower the flash point of a flammable liquid, the more dangerous it is. Because the vapor of a flammable liquid is not ignitable below its flash point, preventative explosion protection can consist of using liquids whose flash points are significantly higher than the ambient temperature. This is often done in practice, but it does have the disadvantage – when using such liquids as solvents – that large amounts of energy are required to evaporate them. Gases by definition do not have a flash point, because under normal conditions they do not exist in liquid form.



ST-1579-2007

You cannot ignite diesel ($F > 55^{\circ}\text{C}$) using a match, but you can ignite gasoline with one ($F < -20^{\circ}\text{C}$)!