

As part of a two year project supported by the Swedish Council for Work Life Research, two methods for the determination of the fire characteristics have been applied to a series of 8 hydraulic fluids in order to obtain data about the fire behaviour of these fluids. The results of this comparison show that both methods give a good indication of the fire behaviour of the fluids but that the small scale method (ISO 15029-2) is less dependent on the viscosity of the fluid than the large scale method (ISO 15029-3). This is due to the method of creating the spray of fluid for ignition. In the small scale test a very well defined, pre-mixed, spray of small droplets (with a narrow distribution of diameters) is created using an aspiration method with a flow of air pushing the fluid through the nozzle. This spray gives a worst case burning behaviour with even relatively inflammable fluids burning. In the large scale method a well defined spray of fluid is created using a swirl nozzle. The spray is not premixed and the distribution of droplet sizes is broader. This method is more sensitive to the viscosity of the fluid with highly viscous fluids producing larger droplets.