Explosion Limits of iso-Propyl Alcohol

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Explosion limit and flash point are the major combustion properties used to determine the fire and explosion hazards of the flammable substances. Explosion limits refer to the range of flammable gas or vapor concentrations between which ignition will occur if an ignition source is present. Under various conditions of temperature and pressure, liquids will evolve a certain quantity of vapor. For pure substances, the concentration of this vapor can be easily determined using the vapor pressure of the substance and the system pressure. n this study, in order to predict lower explosion limits(LEL) and upper explosion limits(UEL), the lower flash point and upper flash point of iso propyl alcohol were measured under the VLE(vapor-liquid equilibrium) state by using Setaflash closed cup tester(ASTM D3278). The LEL and UEL calculated by Antoine equation and stoichiometric coefficients using the experimental the lower and upper flash point for iso propyl alcohol are compared with reported data. The proposed experimental and predicted method are possible to research the upper explosion limits of the other flammable substances.