Integrating Aerosol Formation, Flammability, and Explosion Information into Selection of Heat Transfer Fluids

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ABSTRACT

The devastating consequences of aerosol/mist explosions have been widely documented, and there are currently efforts to understand the mechanisms of the formation and explosion of such aerosols. Heat transfer fluids are particularly susceptible to these hazards, because they are utilized under high pressures and below their flash points, making them more prone to leaking as aerosols. However, there is a critical need during design stages for a perception of explosion risks associated with the selection of heat-transfer fluids. This paper discusses a novel scheme to integrate the knowledge of heat-transfer fluid aerosol formation from leaks in process equipment into the selection of heat-transfer fluids during the design process.