

HEAT RELEASE CAPACITY

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ABSTRACT

The heat release capacity is a molecular-level fire response parameter that has many of the characteristics of an intrinsic material property: it is independent of sample mass (intensive quantity); it is independent of heating rate (pseudo-equilibrium); it is characteristic of, and calculable from, the chemical composition of the material, and; it is measurable by different techniques. Hundreds of materials have been measured for heat release capacity using the FAA pyrolysis-combustion flow calorimeter and the results correlate with bench and full scale flaming combustion test data. The physical basis for a heat release capacity, its measurement and calculation, and its relationship to fire and flammability are described.