# Modeling Cookoff of a Melt-castable Explosive in Several Geometries

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## *Abstract*

Modeling cookoff of melt-castable explosives Comp-B is difficult due to complex phenomena such as melting of TNT, dissolution of RDX in hot liquid TNT creating an RDX suspension, decomposition gas bubble formation, and bubbly flow leading to ignition. We have attempted to simplify this problem by using a Boussinesq approximation to model the flow as a single phase. In the current work, we will show simulations of several cookoff experiments ranging in size from a few grams to about 5 kilograms. Our simulations give support to the hypothesis that Comp-B can be modeled using simple melting and flow approximations.