Studies of thermal dissolution of RDX in TNT melt

NATALYA SUVOROVA, VIRGINIA HAMILTON, DAVID OSCHWALD, LAURA SMILOWITZ, BRYAN HENSON, Los Alamos Natl Lab — The thermal response of energetic materials is studied due to its importance in issues of material safety and surety. Secondary high explosives which melt before they thermally decompose present challenging systems to model due to the addition of material flow. Composition B is a particularly challenging system due to its multiphase nature with a low melt component (TNT) and a high melt component (RDX). The dissolution of RDX crystals in molten TNT at the temperature below RDX melting point has been investigated using hot stage microscopy and Raman spectroscopy. In this paper, we will present data on the dissolution rate of RDX crystals in molten TNT as a function of temperature above the TNT melt.

Natalya Suvorova
Los Alamos Natl Lab

Date submitted: 04 Feb 2015

Electronic form version 1.4