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The Response of a Commercial Fluorinated Tripolymer to One-Dimensional Shock Loading GLENN WHITEMAN, JEREMY MILLETT, AWE plc, ERIC BROWN, Los Alamos National Laboratory, NEIL BOURNE, University of Manchester, GEORGE GRAY, Los Alamos National Laboratory — The response of simple polymers to shock loading is governed by a number of factors, such as the complexity of the polymer chain and the nature of the atoms attached to the main carbon-carbon backbone. In the case of polyethylene based materials such as polyethylene, polypropylene or polytetrafluoroethylene, the competing effects of inter chain tangling (tacticity) and electrostatic repulsion between adjacent polymer chains has been shown to have a profound effect on shock velocity, release velocity and shear strength development. In this work, we apply this knowledge to a commercially available fluorinated tripolymer, Viton-B, where all these molecular features are present.

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