

Abstract Submitted
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Preheat Effect on Macro-Pore MARBLE Foams YONGHO KIM, CARLOS DI STEFANO, TOM MURPHY, TOM DAY, PAWEL KOZLOWSKI, BRIAN HAINES, DANIEL BARNAK, BRIAN ALBRIGHT, Los Alamos National Laboratory, MARBLE TEAM — The Marble capsules consist of deuterated foam whose pores are filled with tritium gas. Initial pore sizes are varied to adjust mix morphology. During the capsule implosion, hohlraum-drive X-rays may increase foam temperature, and thereby reduce pore size. Quantifying the amount of preheat will reduce uncertainty in the Marble macro-pore simulations. An indirectly-driven preheat platform was developed at the Omega laser facility. The platform measures the expansion of a thin plastic disk using point-projection x-ray radiography as a measure of preheat. Experimental data shows that hohlraum-driven X-ray preheat is on the order of a few eV, however shock-driven heating can be stronger than X-ray preheat. Based on this result, high-Z Argon gas was added to the NIF Marble capsule to reduce shock-driven heating.

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