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The effects of gas on ejecta particle size distributions for shock loaded Sn DANNY SORENSON, PETER PAZUCHANICS, Los Alamos National Laboratory, ROBERT MALONE, ARIC TIBBITTS, MORRIS KAUFMAN, TOM TUNNELL, National Security Technologies, LLC, Los Alamos Operations, GENE CAPELLE, MIKE GROVER, GUY LEACH, BRUCE MARSHALL, GERALD STEVENS, WILLIAM TURLEY, National Security Technologies, LLC, Special Technologies Laboratory — A strong shock wave reflecting from a metal surface can lead to "ejected matter" which are metal/liquid particles emitted from the metal gas/vacuum interface. The mass, size and velocity distributions will depend on a variety of conditions including the material properties of the metal under investigation as well as the shock loading conditions. Furthermore, if the particles are produced in a gas environment the particles can undergo further fragmentation due to the interactions the particles have with the gas. This can result in a size distribution that can vary significantly from that measured in a vacuum environment. We will present particle size distributions from shock loaded Sn samples that were measured in a vacuum and He gas environments. The measurements were conducted using a new high-resolution in-line Fraunhofer holography measurement technique.

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