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Chemical model compositions of Air and Lexan at intermediate temperatures and densities ANN E. MATTSSON, MICHAEL P. DESJARLAIS, Sandia National Laboratories — The generation of wide range electrical conductivity models requires accurate modeling of the ionization equilibrium. At lower temperatures the free electrons contributing to the conductivity can result from the ionization of molecules, such as NO ionizing into NO+ in Air. At higher temperatures the electrons result from full ionization of single atoms. We will describe a scheme for modeling the composition of a gas, including the number of free electrons. As an example the composition of Air through the ionization part of the principal Hugoniot will be discussed. Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energyi's National Nuclear Security Administration under Contract DE- AC04-94AL85000.

Ann E. Mattsson
Sandia National Laboratories

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