

ELASTIC SCATTERING AND CHARGE TRANSFER IN SLOW COLLISIONS: ISOTOPES OF H AND H⁺ COLLIDING WITH ISOTOPES OF H AND WITH He¹

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Differential and integral cross sections are calculated in the center of mass energy range of 0.1 to 100 eV for elastic scattering of protons (H⁺, D⁺, T⁺) and hydrogen atoms (H, D, T) by hydrogen atoms (H, D, T). In addition, we derive from the elastic differential cross sections the momentum transfer and viscosity cross sections of use in the study of plasma transport, and compute the charge transfer cross section. Fully quantal and semiclassical approaches are utilized in these calculations, as are very accurate electronic potential energy curves. The results are compared with available data.

1. Abstract of paper to be published in *Journal of Physics B*.