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High accuracy hugoniot measurements of tin ARNON YOSEF-HAI, GABI BIALOLENKER, EITAN EIDELSTEIN, RAFI HEVRONI, DANIELA KARTOON, Nuclear Research Center Negev, ELA MOSHE, MEIR WERDIGER, YOSSEF HOROVITZ, MORIS SUDAI, LIOR PERLMUTER, ELKANA PORAT, Soreq Nuclear Research Center — The principal Hugoniot of tin was methodically investigated in more than 50 new plate impact experiments at pressures ranging from 18 GPa to 70 GPa. The aim of the research is to achieve a better empirically calibrated Hugoniot EOS for tin than currently available. Shock velocity was measured using an array of 19 electric pins pressed to the two surfaces of a top-hat shaped target [1], thus allowing to correct deviations from ideal planarity. Impact velocity was measured using a separate array of 6 electric pins aligned perpendicular to the impact axis. Different pressures in the tin targets were achieved using several impact velocities and a selection of standard materials used as impactors. The results are presented along with rigorous error calculations, and compared to previous data [2]. Careful attention has been given in order to identify possible effects of dynamic liquidation [3] along the shock Hugoniot. [1]A.C. Mitchel et al. JAP 52 3363 (1981) [2]T.J. Ahrens et al. A Handbook of Physical Constants, pp.143-183, Amer Geophysical Union (1995) [3]P.Song et al., JAP 120 195101 (2016)

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