Abstract Submitted
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Half-lives of ^{101}Rh, ^{102}Rh and ^{102m}Rh[1] HOWARD A. SHUGART, Dept. of Physics and LBNL, ERIC B. NORMAN, Dept. of Nuclear Engineering, and LBNL, EDGARDO BROWNE, Lawrence Berkeley National Laboratory, Univ. of California, Berkeley, 94720 — Although ^{102,102m}Rh half-lives are known,[2] the ^{101}Rh half-life was previously determined only to within 9%. A .5 x .5 x .050 in. rhodium piece was irradiated with 40 MeV protons at the LBNL 88-in. cyclotron producing the reactions ^{103}Rh(p,3n)^{101}Pd, which decays to ^{101}Rh, as well as ^{103}Rh(p,t)^{101}Rh, ^{103}Rh(p,pn) and (p,d)^{102,102m}Rh. Two- or three-day spectra of the foil were taken using a HPGe detector weekly or every two weeks. 66 days after bombardment the shorter-lived activities had mostly decayed leaving only ^{101,102,102m}Rhodium. The gamma spectra of three rhodium isotopes have, thus far, been followed for 475 days. Using the decay of the 127-, 198-, and 325-keV gammas for ^{101}Rh, 556-keV for ^{102}Rh, and 698- and 767-keV for ^{102}Rh, our preliminary, self-consistent, half-life results shown in **{ }** are compared with previous values shown in [ ]: [^{101}Rh ∼2.9y, 3.0(4)y, 3.3(3)y] **{**3.9(2)y**}** [^{102m}Rh 2.1(9)y, 3.742(10)y^{a}] **{**3.6(1)y**}** [^{102}Rh 210(6)d, 205(10)d, 207.3(17)d^{a}]**{**206.3(8)d**}**

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[2]Shibata M., et al., Appl. Radio. Isot. 49, No.12, 1481 (1998)

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