

Comparison of activity between fallout Pu particle and Fukushima origin Pu particle for an idea of atom ratio

- An example calculation in case of Pu particle containing 1 ng Pu -

Pu particle containing 1 ng Pu

Atmospheric-fallout Pu atom-ratio in Japan (2000)#

	240/239	241/239
Atom ratio	0.19	0.00287

An example calculation with the atom ratios above

Pu	[g]	[Bq]
Pu239	8.32E-10	1.91
Pu240	1.66E-10	1.39
Pu241	2.39E-12	9.15
Total		12.4

Fukushima Pu atom ratio found in our study [Shinonata et al. 2014]*

	240/239	241/239
Atom ratio	0.33	0.16

An example calculation with the atom ratios above

Pu	[g]	[Bq]
Pu239	6.70E-10	1.54
Pu240	2.22E-10	1.86
Pu241	1.096E-10	417
Total		420

Factor of

Fuku/Fallout
[Bq]/[Bq]

Pu239 0.81

Pu240 1.34

Pu241 45.6

Total 33.8

*: Shinonaga T, Steier P, Lagos, M, Ohkura T. Airborne Plutonium and Non-Natural Uranium from the Fukushima DNPP Found at 120 km

Distance a Few Days after Reactor Hydrogen Explosions. *Environmental Science & Technology*, 48, 3808-3814 (2014)

#: Zheng J, et al. Isotopic evidence of plutonium release into the environment from the Fukushima DNPP accident.

Sci.Rep. 2. 302 (2012)