Recommended Nuclear Decay Data

U-238

Decay Mode: α		Half-Life:(4.470E09 ± 2.0E07) y			[2]
Radiation Type		**Energy (keV)**	**Intensity (%)**		**Ref.**
α		4038	0.078	12	[7]
α		4151	20.9	27	[7]
α		4198	79.0	27	[7]
X-ray L	Σ	15.9	128	11	[2]
X-ray Kα2		94.65	15.7	10	[2]
X-ray Kα1		98.43	25.3	16	[2]
X-ray Kβ1		111.0	9.2	6	[2]
X-ray Kβ2		114.9	3.11	21	[2]
γ	Th-234	63.28	4.1	7	[2]
γ	Th-234	92.37	2.42	15	[2]
γ	Th-234	92.79	2.39	15	[2]
γ	Th-234	112.81	0.24	6	[2]
γ		113.5	0.0102	15	[2]
γ	Pa-234m	258.19	0.0754	26	[2]
γ	Pa-234m	742.81	0.096	6	[2]
γ	Pa-234m	766.37	0.316	6	[2]
γ	Pa-234m	1001.0	0.839	12	[2]

U-238 in equilibrium with Th-234, Pa-234m and U-234

Recommended Nuclear Decay Data

Decay Mode

α	Alpha
β-, β+	Beta
EC	Electron capture
IT	Isomeric transition

Half-Life

s	Seconds
m	Minutes
h	Hours
d	Days
y	Years

Energy

All energies are given in keV. Normally there are energies listed with an intensity ≥ 1 %.

Radiation Type

Auger-L/K	L or K-shell auger electron
ce-K-1	K-shell conversion electron transition 1
ce-L-2	L-shell conversion electron transition 2
α	Alpha particle
β^- max, β^+ max	Beta particle (maximal energy)
β^- av, β^+ av	Beta particle (average energy)
X-ray L	L X-ray
X-ray Kα, Kβ	K X-rays
γ	Gamma ray
γ Annih.	Annihilation radiation
Σ	Signifies weighted mean energies and intensities

Intensity

Values are given in percent. The format used for the uncertainties in the listed values can be illustrated by the following examples:

1.2	56	=	1.2	±	5.6
1.23	56	=	1.23	±	0.56

References

[1] PTB-6.11-97-1, Braunschweig, Oktober 1997
[2] PTB-Ra-16/5, Braunschweig, Mai 2000
[3] LMRI. Table de radionuclides. 1982 ff
[4] NCRP Report No.58, 2nd Edition, February 1985
[5] Table de Radionuclidés, BNM-CEA/DTA/LPRI Commissariat à l´Énergie Atomique – France 1999
[6] National Nuclear Data Center USA, Brookhaven National Laboratory Upton N.Y.
[7] Table of Isotopes, 8th Edition, 1996
[8] BNM-CEA/DTA/DAMRI Nuclear and Atomic Decay Data ; 19/12/98

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