

# Recommended Nuclear Decay Data

Eu-152

Decay Mode: EC, $\beta^-$ , ( $\beta^+$ )		Half-Life: (4943 $\pm$ 5) d			[2]		
Radiation Type		Energy (keV)			Intensity (%)		Ref.
Auger-L	$\Sigma$	3.2	-	8.3	75	9	[3]
Auger-K	$\Sigma$	33.1	-	50.2	6	2	[3]
ce-K-1	EC	74.95			19.2	2	[3]
ce-L-1	EC	114.05			10.7	1	[3]
$\beta^-$ max		178.7			1.826	11	[3]
$\beta^-$ max		388.1			2.436	15	[3]
$\beta^-$ max		698.9			13.78	8	[3]
$\beta^-$ max		1066.7			0.96	3	[3]
$\beta^-$ max		1477.8			8.0	3	[3]
X-ray L	$\Sigma$	6.0			12.9	7	[2]
X-ray K $\alpha$	$\Sigma$ EC	39.91			59.1	12	[2]
	$\Sigma\beta^-$	42.75			6.48	22	[2]
X-ray K $\beta$	$\Sigma$ EC	45.7			14.9	3	[2]
	$\Sigma\beta^-$	49.0			0.176	18	[2]
$\gamma$		121.78			28.58	9	[2]
$\gamma$		244.70			7.580	30	[2]
$\gamma$		295.94			0.447	6	[2]
$\gamma$		344.28			26.5	6	[2]
$\gamma$		411.12			2.234	25	[2]
$\gamma$		443.96			3.148	20	[2]
$\gamma$	$\Sigma$	678.0			1.98	7	[2]
$\gamma$		688.67			0.857	9	[2]
$\gamma$		778.90			12.94	15	[2]
$\gamma$		867.37			4.245	21	[2]
$\gamma$		964.08			14.60	4	[2]
$\gamma$		1005.3			0.646	5	[2]
$\gamma$		1085.9			10.21	4	[2]
$\gamma$		1089.7			1.727	20	[2]
$\gamma$		1112.1			13.64	4	[2]
$\gamma$		1299.1			1.623	20	[2]
$\gamma$		1408.0			21.00	6	[2]
$\gamma$		1457.6			0.502	5	[2]

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## ■ Decay Mode

$\alpha$	Alpha
$\beta^-$ , $\beta^+$	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  $\geq 1\%$ .

## ■ 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
$\alpha$	Alpha particle
$\beta^-$ max, $\beta^+$ max	Beta particle (maximal energy)
$\beta^-$ av, $\beta^+$ av	Beta particle (average energy)
X-ray L	L X-ray
X-ray $K\alpha$ , $K\beta$	K X-rays
$\gamma$	Gamma ray
$\gamma$ Annih.	Annihilation radiation
$\Sigma$	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:

$$1.2 \quad 56 \quad = \quad 1.2 \pm 5.6$$
$$1.23 \quad 56 \quad = \quad 1.23 \pm 0.56$$

## ■ 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 Radionuclides, 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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