CEN France

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More than 45 publications in Nuclear Data sheets

Status since the last meeting (2011)

Mass	NDS	**Dat--ENSDF**	**Comments**
113	NDS 111, 1471(2010)	**201006**	
114	NDS 113, 515 (2012)	**201203**	
115	NDS 113,2391 (2012)	**201210**	
116	NDS 111, 717 (2010)	**201004**	**Mo (10)**
117	NDS 95, 679 (2002) ENSDF (2011)	**201101**	

Participation to NUBASE

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The NUBASE2012

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Abstract This paper presents the NUBASE2012 evaluation that contains the recommended values for nuclear and decayproperties of nuclides in their ground and excited isomeric (T1=2_100 ns) states. All nuclides for which some experimentalinformation is known are considered. NUBASE2012 covers all up to date experimental data published in primary (journalarticles) and secondary (mainly laboratory reports and conference proceedings) references, together with the correspondingbibliographical information. During the development of NUBASE2012, the data available in the “Evaluated Nuclear StructureData File” (ENSDF) database were consulted, and critically assessed of their

validity and completeness. Furthermore,a large amount of new and somewhat older experimental results that were missing in ENSDF were compiled, evaluated andincluded in NUBASE2012. The atomic mass values were taken from the “Atomic Mass Evaluation” (AME2012, second and third parts of the present issue). In cases where no experimental data were available for a particular nuclide, trends in the behavior of specific properties in neighboring nuclei (TNN) were examined. This approach allowed to estimate, when ever possible, values for a range of properties, and are labeled in NUBASE2012 as “non-experimental” (flagged “#”). Evaluationprocedures and policies that were used during the development of this database are presented, together with a detailed table of recommended values and their uncertainties.

AMDC: http://amdc.in2p3.fr/ and http://amdc.impcas.ac.cn/

Table I. The NUBASE2012 table (continued, Explanation of Table on page 1176)

Nuclide	Mass excess (keV)		Excitation energy (keV)		Half-life			J^π	Ens	Reference		Year of discovery	Decay modes and intensities (%)	
^{113}Nb	−40510#	400#			20#	ms	(>300 ns)	5/2+#	10	97Be70	I	1997	β^- ?; β^-n ?; β^-2n ?	
^{113}Mo	−52770#	300#			79	ms	6	3/2+#	10	11Ni01	TD	1994	β^-=100; β^-n ?	*
^{113}Tc	−62812	3			169	ms	18	5/2+#	10	09Pe06	T	1992	β^-=100; β^-n=2.1 3	*
^{113}Tc^m	−62698	3	114.4	0.5	527	ns	16	(5/2−)		12KaJB	ET	2010	IT=100	*
^{113}Ru	−71870	40			800	ms	50	(1/2+)	10			1988	β^-=100	
^{113}Ru^m	−71740	40	130	18	510	ms	30	(7/2−)	10	98Ku17	E	1998	IT=?, β^-=?	*
^{113}Rh	−78768	7			2.80	s	0.12	(7/2+)	10	93Pa11	J	1971	β^-=100	
^{113}Pd	−83591	7			93	s	5	(5/2+)	10			1954	β^-=100	
^{113}Pd^m	−83510	7	81.1	0.3	300	ms	100	(9/2−)	10			1993	IT=100	
^{113}Ag	−87027	17			5.37	h	0.05	1/2−	10			1949	β^-=100	
^{113}Ag^m	−86984	17	43.50	0.10	68.7	s	1.6	7/2+	10			1958	IT=64 7; β^-=36 7	
^{113}Cd	−89043.3	0.4			8.04	Py	0.05	1/2+	10			1925	IS=12.22 12; β^-=100	*
^{113}Cd^m	−88779.8	0.4	263.54	0.03	13.89	y	0.11	11/2−	10	11Ko01	TD	1965	β^-=99.9036 19; IT=0.0964 19	*
^{113}In	−89365.8	0.9			STABLE			9/2+	10			1934	IS=4.29 5	
^{113}In^m	−88974.1	0.9	391.699	0.003	1.6579	h	0.0004	1/2−	10			1939	IT=100	*
^{113}Sn	−88328.2	1.6			115.09	d	0.03	1/2+	10			1939	β^+=100	
^{113}Sn^m	−88250.8	1.6	77.389	0.019	21.4	m	0.4	7/2+	10			1961	IT=91.1 23; β^+=8.9 23	
^{113}Sb	−84417	17			6.67	m	0.07	5/2+	10			1958	β^+=100	
^{113}Te	−78347	28			1.7	m	0.2	(7/2+)	10			1974	β^+=100	
^{113}I	−71120	8			6.6	s	0.2	5/2+#	10			1977	β^+=100; α=3.310e−7; …	*
^{113}Xe	−62204	7			2.74	s	0.08	5/2+#	10			1973	$\beta^+\approx$100; $\alpha\approx$0.011; …	*
^{113}Cs	−51764	9			16.7	μs	0.7	(3/2+)	10			1984	p=100	
*^{113}Mo	T : symmetrized from 11Ni01=78(+6−5)													**
*^{113}Tc	T : average 09Pe06=160(+50−40) 99Wa09=170(20) J : 07Ku23 > 5/2													**
*^{113}Tc^m	T : other recent 10Br15=500(100) E : other 10Br15=114(1)													**
*^{113}Ru^m	E : above the 99 keV level and below 160 keV													**
*^{113}Cd	T : from 07Ba61=8.037(0.005)(0.05 systematics);													**
*^{113}Cd	T : other 09Da03=8.00(0.11)(syst 0.24) outweighed													**
*^{113}Cd^m	T : average 11Ko01=13.97(0.13) 72Wa11=14.6(0.5) 65Fl02=13.6(0.2)													**
*^{113}In^m	T : 99.476 m 23													**
*^{113}I	D : … ; $\beta^+\alpha$?													**
*^{113}Xe	D : … ; β^+p=7 4; $\beta^+\alpha\approx$0.007 4													**
*^{113}Xe	D : α=0.0024-0.0 204 % from estimated limit for the reduced width, see 85Ti02													**
*^{113}Xe	D : β^+p and $\beta^+\alpha$ derived from β^+p/α=605(35) and β^+p/$\beta^+\alpha$=500-1500 in 85Ti02													**