Recent Additions to the KCDB

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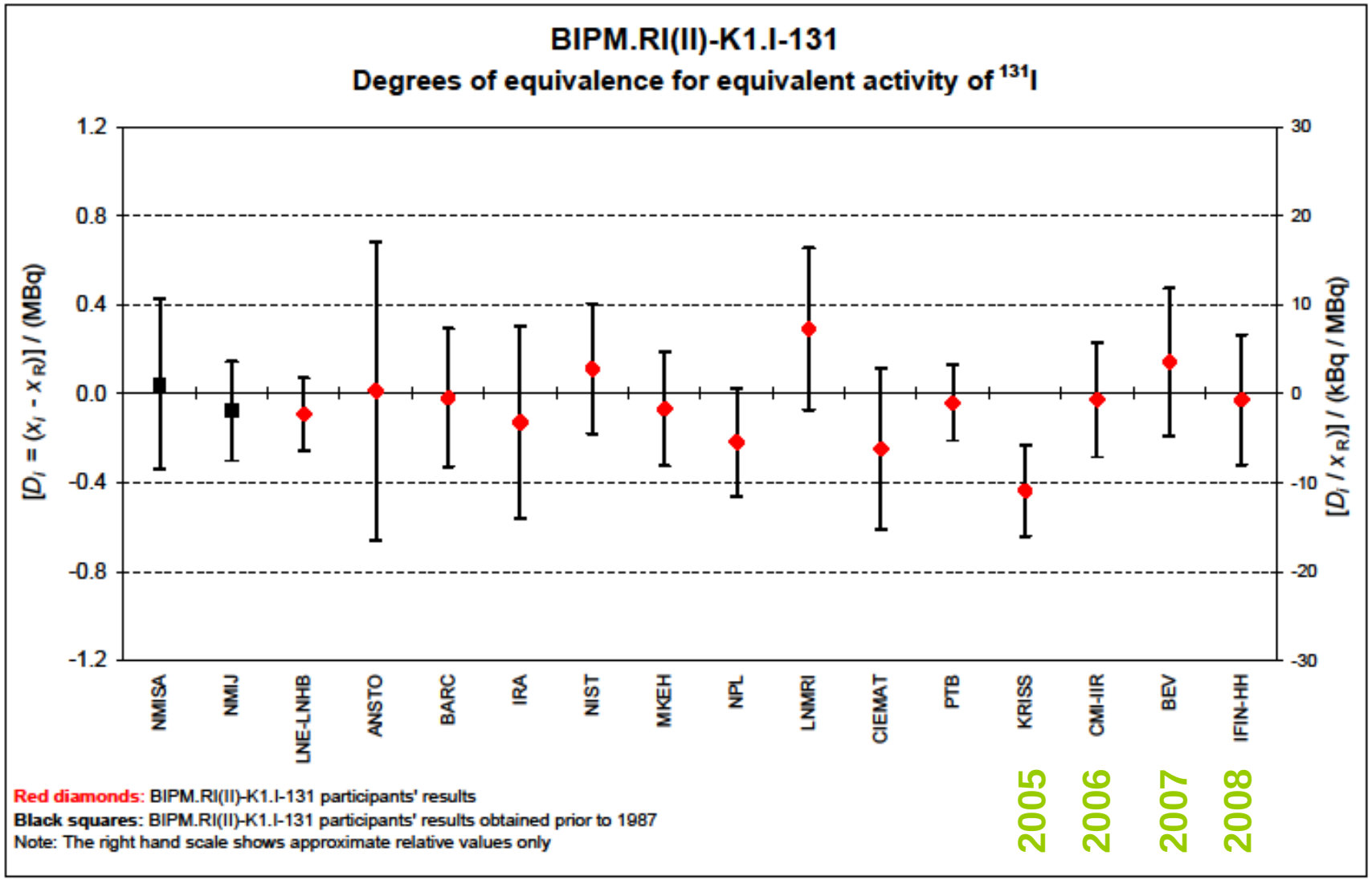

The BIPM key comparison database, May 2008

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Key comparison BIPM.RI(II)-K1.I-131

MEASURAND : Equivalent activity of ^{131}I

Key comparison reference value: the SIR reference value for this radionuclide is x_R = 40400 kBq with a standard uncertainty u_R = 40 kBq (see Section 4.1 of the Final Report dated 23 April 2008)

The degree of equivalence of each laboratory with respect to the reference value is given by a pair of terms:
$D_i = (x_i - x_R)$ and U_i, its expanded uncertainty (k = 2), both expressed in MBq, and with n the number of laboratories
$U_i = 2((1 - 2/n)u_i^2 + (1/n^2)\Sigma u_i^2)^{1/2}$ when each laboratory has contributed to the the calculation of x_R.

The degree of equivalence between two laboratories is given by a pair of terms:
$D_{ij} = D_i - D_j = (x_i - x_j)$ and U_{ij}, its expanded uncertainty (k = 2), both expressed in MBq.
The approximation $U_{ij} \sim 2(u_i^2 + u_j^2)^{1/2}$ is used in the following table.

Lab j ⟹

Lab i ⇩

	D_i / MBq	U_i / MBq	NMISA D_{ij} / MBq	NMISA U_{ij} / MBq	NMIJ D_{ij} / MBq	NMIJ U_{ij} / MBq	LNE-LNHB D_{ij} / MBq	LNE-LNHB U_{ij} / MBq	ANSTO D_{ij} / MBq	ANSTO U_{ij} / MBq	BARC D_{ij} / MBq	BARC U_{ij} / MBq	IRA D_{ij} / MBq	IRA U_{ij} / MBq	NIST D_{ij} / MBq	NIST U_{ij} / MBq	MKEH D_{ij} / MBq	MKEH U_{ij} / MBq
NMISA	0.04	0.38			0.12	0.46	0.13	0.43	0.03	0.82	0.06	0.51	0.17	0.58	-0.07	0.50	0.11	0.48
NMIJ	-0.08	0.22	-0.12	0.46			0.01	0.26	-0.09	0.75	-0.06	0.39	0.05	0.47	-0.19	0.37	-0.01	0.34
LNE-LNHB	-0.09	0.16	-0.13	0.43	-0.01	0.26			-0.10	0.73	-0.07	0.35	0.04	0.44	-0.20	0.33	-0.02	0.30
ANSTO	0.01	0.67	-0.03	0.82	0.09	0.75	0.10	0.73			0.03	0.79	0.14	0.83	-0.10	0.78	0.08	0.77
BARC	-0.02	0.31	-0.06	0.51	0.06	0.39	0.07	0.35	-0.03	0.79			0.11	0.53	-0.13	0.44	0.05	0.41
IRA	-0.13	0.43	-0.17	0.58	-0.05	0.47	-0.04	0.44	-0.14	0.83	-0.11	0.53			-0.24	0.52	-0.06	0.49
NIST	0.11	0.29	0.07	0.50	0.19	0.37	0.20	0.33	0.10	0.78	0.13	0.44	0.24	0.52			0.18	0.40
MKEH	-0.07	0.26	-0.11	0.48	0.01	0.34	0.02	0.30	-0.08	0.77	-0.05	0.41	0.06	0.49	-0.18	0.40		
NPL	-0.22	0.24	-0.26	0.47	-0.14	0.33	-0.13	0.28	-0.23	0.76	-0.20	0.40	-0.09	0.48	-0.33	0.38	-0.15	0.35
LNMRI	0.29	0.36	0.25	0.55	0.37	0.44	0.38	0.41	0.28	0.81	0.31	0.50	0.42	0.57	0.18	0.48	0.36	0.46
CIEMAT	-0.25	0.36	-0.29	0.55	-0.17	0.44	-0.16	0.41	-0.26	0.81	-0.23	0.50	-0.12	0.57	-0.36	0.48	-0.18	0.46
PTB	-0.04	0.17	-0.08	0.43	0.04	0.27	0.05	0.21	-0.05	0.74	-0.02	0.36	0.09	0.45	-0.15	0.34	0.03	0.30
KRISS	-0.44	0.20	-0.48	0.44	-0.36	0.29	-0.34	0.23	-0.45	0.74	-0.42	0.37	-0.31	0.46	-0.55	0.35	-0.37	0.32
CMI-IIR	-0.03	0.26	-0.07	0.47	0.05	0.33	0.06	0.28	-0.04	0.76	-0.01	0.40	0.10	0.48	-0.14	0.38	0.04	0.35
BEV	0.14	0.33	0.10	0.51	0.22	0.39	0.23	0.35	0.13	0.79	0.16	0.45	0.27	0.53	0.03	0.44	0.21	0.41
IFIN-HH	-0.03	0.29	-0.07	0.49	0.05	0.35	0.07	0.31	-0.04	0.77	-0.01	0.42	0.10	0.50	-0.14	0.41	0.04	0.38

Matrix of equivalence - continued

Lab *j* ⟹

Lab *i* ⇩

	D_i / MBq	U_i / MBq	NPL D_{ij} / MBq	NPL U_{ij} / MBq	LNMRI D_{ij} / MBq	LNMRI U_{ij} / MBq	CIEMAT D_{ij} / MBq	CIEMAT U_{ij} / MBq	PTB D_{ij} / MBq	PTB U_{ij} / MBq	KRISS D_{ij} / MBq	KRISS U_{ij} / MBq	CMI-IIR D_{ij} / MBq	CMI-IIR U_{ij} / MBq	BEV D_{ij} / MBq	BEV U_{ij} / MBq	IFIN-HH D_{ij} / MBq	IFIN-HH U_{ij} / MBq
NMISA	0.04	0.38	0.26	0.47	-0.25	0.55	0.29	0.55	0.08	0.43	0.48	0.44	0.07	0.47	-0.10	0.51	0.07	0.49
NMIJ	-0.08	0.22	0.14	0.33	-0.37	0.44	0.17	0.44	-0.04	0.27	0.36	0.29	-0.05	0.33	-0.22	0.39	-0.05	0.35
LNE-LNHB	-0.09	0.16	0.13	0.28	-0.38	0.41	0.16	0.41	-0.05	0.21	0.34	0.23	-0.06	0.28	-0.23	0.35	-0.07	0.31
ANSTO	0.01	0.67	0.23	0.76	-0.28	0.81	0.26	0.81	0.05	0.74	0.45	0.74	0.04	0.76	-0.13	0.79	0.04	0.77
BARC	-0.02	0.31	0.20	0.40	-0.31	0.50	0.23	0.50	0.02	0.36	0.42	0.37	0.01	0.40	-0.16	0.45	0.01	0.42
IRA	-0.13	0.43	0.09	0.48	-0.42	0.57	0.12	0.57	-0.09	0.45	0.31	0.46	-0.10	0.48	-0.27	0.53	-0.10	0.50
NIST	0.11	0.29	0.33	0.38	-0.18	0.48	0.36	0.48	0.15	0.34	0.55	0.35	0.14	0.38	-0.03	0.44	0.14	0.41
MKEH	-0.07	0.26	0.15	0.35	-0.36	0.46	0.18	0.46	-0.03	0.30	0.37	0.32	-0.04	0.35	-0.21	0.41	-0.04	0.38
NPL	-0.22	0.24			-0.51	0.45	0.03	0.45	-0.18	0.29	0.22	0.30	-0.19	0.34	-0.36	0.25	-0.19	0.37
LNMRI	0.29	0.36	0.51	0.45			0.54	0.54	0.33	0.41	0.73	0.42	0.32	0.45	0.15	0.50	0.32	0.47
CIEMAT	-0.25	0.36	-0.03	0.45	-0.54	0.54			-0.21	0.41	0.19	0.42	-0.22	0.45	-0.39	0.50	-0.22	0.47
PTB	-0.04	0.17	0.18	0.29	-0.33	0.41	0.21	0.41			0.40	0.24	-0.01	0.29	-0.18	0.36	-0.01	0.32
KRISS	-0.44	0.20	-0.22	0.30	-0.73	0.42	-0.19	0.42	-0.40	0.24			-0.41	0.30	-0.58	0.37	-0.41	0.33
CMI-IIR	-0.03	0.26	0.19	0.34	-0.32	0.45	0.22	0.45	0.01	0.29	0.41	0.30			-0.17	0.40	0.00	0.37
BEV	0.14	0.33	0.36	0.25	-0.15	0.50	0.39	0.50	0.18	0.36	0.58	0.37	0.17	0.40			0.17	0.42
IFIN-HH	-0.03	0.29	0.19	0.37	-0.32	0.47	0.22	0.47	0.01	0.32	0.41	0.33	0.00	0.37	-0.17	0.42		

In Progress

- ^{177}Lu
  - Samples in Late Feb/early March 2009

Proposed

- ^{68}Ge submission to SIR by NIST
- ^{223}Ra submission to SIR by NIST
- Request others who have standardized these radionuclides to submit as well, especially ^{68}Ge