Key comparison CCQM-K26.a

MEASURAND : **Amount-of-substance fraction of Nitrogen monoxide (NO) in Nitrogen (N_2)**
NOMINAL VALUE : **720 nmol/mol**

x_i result of measurement carried out by laboratory *i*
u_i combined standard uncertainty of x_i

Lab *i*	Cylinder number	x_i / (nmol/mol)	u_i / (nmol/mol)	Date of measurement
CENAM	22402	727.00	3.00	29 Sep 2004
NMIJ	22492	717.70	2.30	22 Jul 2004
CHMI	22418	715.80	3.75	16 Jul 2004
FMI	22416	721.10	5.77	09 Sep 2004
JRC	22496	727.80	1.45	25 Jun 2004
KRISS	22423	713.20	4.35	27 Aug 2004
LNE	22422	725.70	2.90	30 Jun 2004
NIST	22396	715.00	3.50	30 Jun 2004
VSL	22414	718.10	4.00	26 Aug 2004
NPL	22412	722.27	1.30	31 Aug 2004
UBA	22411	713.80	2.91	22 Jul 2004
VNIIM	22403	711.30	4.62	14 Oct 2004

Key comparison EURAMET.QM-K26.a

MEASURAND : **Amount-of-substance fraction of Nitrogen monoxide (NO) in Nitrogen (N_2)**
NOMINAL VALUE : **450 nmol/mol**

Laboratories' measurements are given in Table 3 on page 9 of the EURAMET.QM-K26.a Final Report. Measurements were carried out in 2012.

Key comparison CCQM-K26.a

MEASURAND : Amount-of-substance fraction of Nitrogen monoxide (NO) in Nitrogen (N_2)
NOMINAL VALUE : 720 nmol/mol

In order to eliminate any effects of drift due to instability in the amount fraction in the travelling cylinders, the drift of each travelling cylinder was determined individually by the Pilot Laboratory, the NPL, as explained on page 7 and in Annex B of the Final Report. Then, the amount fraction in the cylinder sent to laboratory i, $x_{i\,R}$, was calculated at the time when it was analyzed by this laboratory, together with the corresponding standard uncertainty, $u_{i\,R}$ (see on page 11 of the Final Report). One component of the uncertainty $u_{i\,R}$ corresponds to the preparation by gravimetry and is estimated to be equal to 0.1 nmol/mol for all cylinders.

There is no single key comparison reference value for this comparison. The reference value for laboratory i is $x_{i\,R}$ with standard uncertainty $u_{i\,R}$.

The degree of equivalence of each laboratory i with respect to the reference value is given by a pair of terms: $D_i = x_i - x_{i\,R}$ and U_i, its expanded uncertainty ($k = 2$), with $U_i = 2(u_i^2 + u_{i\,R}^2)^{1/2}$.

No pair-wise degrees of equivalence are computed for this key comparison.

Key comparison EURAMET.QM-K26.a

MEASURAND : Amount-of-substance fraction of Nitrogen monoxide (NO) in Nitrogen (N_2)
NOMINAL VALUE : 450 nmol/mol

The EURAMET.QM-K26.a data are treated in a similar way, which makes it possible to extend the CCQM-K26.a graph of equivalence with results of participants in the EURAMET.QM-K26.a key comparison.

Key comparisons CCQM-K26.a and EURAMET.QM-K26.a

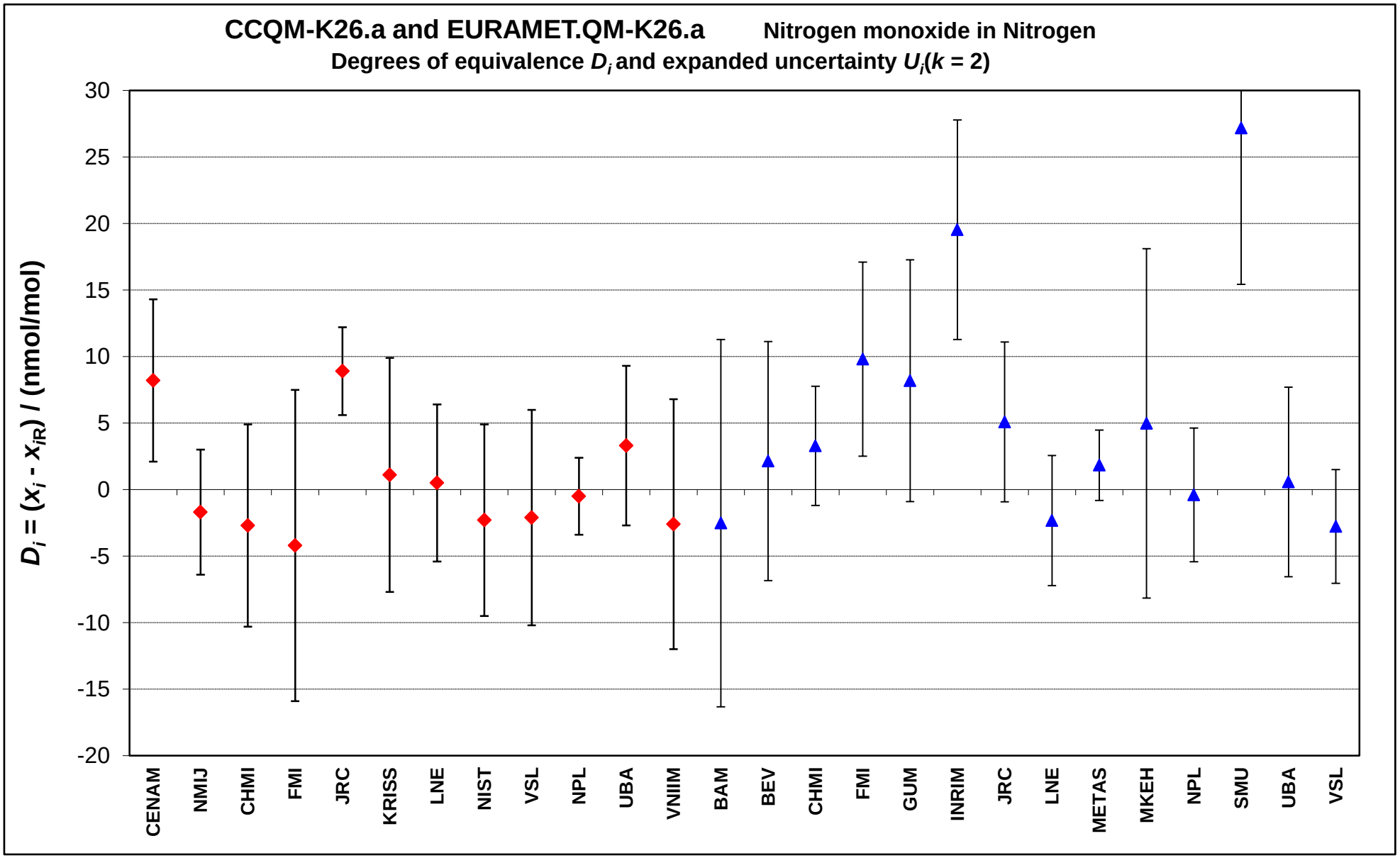
MEASURAND : **Amount-of-substance fraction of Nitrogen monoxide (NO) in Nitrogen (N_2)**

Degrees of equivalence relative to the key comparison reference values

Lab *i* ⇩	Cylinder number	x_{iR} / (nmol/mol)	u_{iR} / (nmol/mol)	D_i / (nmol/mol)	U_i / (nmol/mol)
CENAM	22402	718.8	0.57	8.2	6.1
NMIJ	22492	719.4	0.56	-1.7	4.7
CHMI	22418	718.5	0.69	-2.7	7.6
FMI	22416	725.3	0.94	-4.2	11.7
JRC	22496	718.9	0.75	8.9	3.3
KRISS	22423	712.1	0.69	1.1	8.8
LNE	22422	725.2	0.60	0.5	5.9
NIST	22396	717.3	0.84	-2.3	7.2
VSL	22414	720.2	0.64	-2.1	8.1
NPL	22412	722.7	0.61	-0.5	2.9
UBA	22411	710.5	0.63	3.3	6.0
VNIIM	22403	713.9	0.72	-2.6	9.4

Lab *i* ⇩	D_i / (nmol/mol)	U_i / (nmol/mol)
BAM	-2.52	13.81
BEV	2.14	8.99
CHMI	3.29	4.48
FMI	9.81	7.29
GUM	8.19	9.10
INRIM	19.54	8.25
JRC	5.09	6.01
LNE	-2.33	4.89
METAS	1.83	2.64
MKEH	4.98	13.13
NPL	-0.40	5.02
SMU	27.19	11.76
UBA	0.58	7.12
VSL	-2.78	4.28

Red: key comparison reference values in CCQM-K26.a
For the key comparison reference values in EURAMET.QM-K26.a, see Section 8 of the Final Report
Black: participants in CCQM-K26.a
Blue: participants in EURAMET.QM-K26.a



Red diamonds: participants in CCQM-K26.a
Blue triangles: participants in EURAMET.QM-K26.a