

Key comparison CCQM-K57

MEASURAND : Mass fraction of Silicon (Si) as Silicon Oxide (SiO₂) in common clay

- x_i : result of measurement carried out by laboratory i
- $U_{\text{Lab } i}$: expanded uncertainty of x_i at a 95 % level of confidence
- u_i : standard uncertainty of x_i
- $U_{\text{Lab } i} = k_i u_i$ where k_i is the coverage factor

Lab i	x_i	$U_{\text{Lab } i}$	k_i	Date of measurement
	/ (mg/g)			
BAM	659.0	9.86	2	2007
CENAM	662.3	3.1	2.1	2007
NIST	665.6	13.2	2	2007
NMIJ	653.52	0.83	2	2007
SP	656.0	5.2	2	2007
VNIIM	657.08	3.81	2	2007

Key comparison CCQM-K57

MEASURAND : Mass fraction of Silicon (Si) as Silicon Oxide (SiO₂) in common clay

The key comparison reference value, x_R , is computed as the median of all results. Its standard uncertainty, u_R , is based on the estimation of the dispersion around the median (see Section 9 of the Final Report). Its expanded uncertainty, U_R , is estimated with a coverage factor of 2.57.

$$x_R = 658.04 \text{ mg/g}, u_R = 1.91 \text{ mg/g}, U_R = 4.90 \text{ mg/g}$$

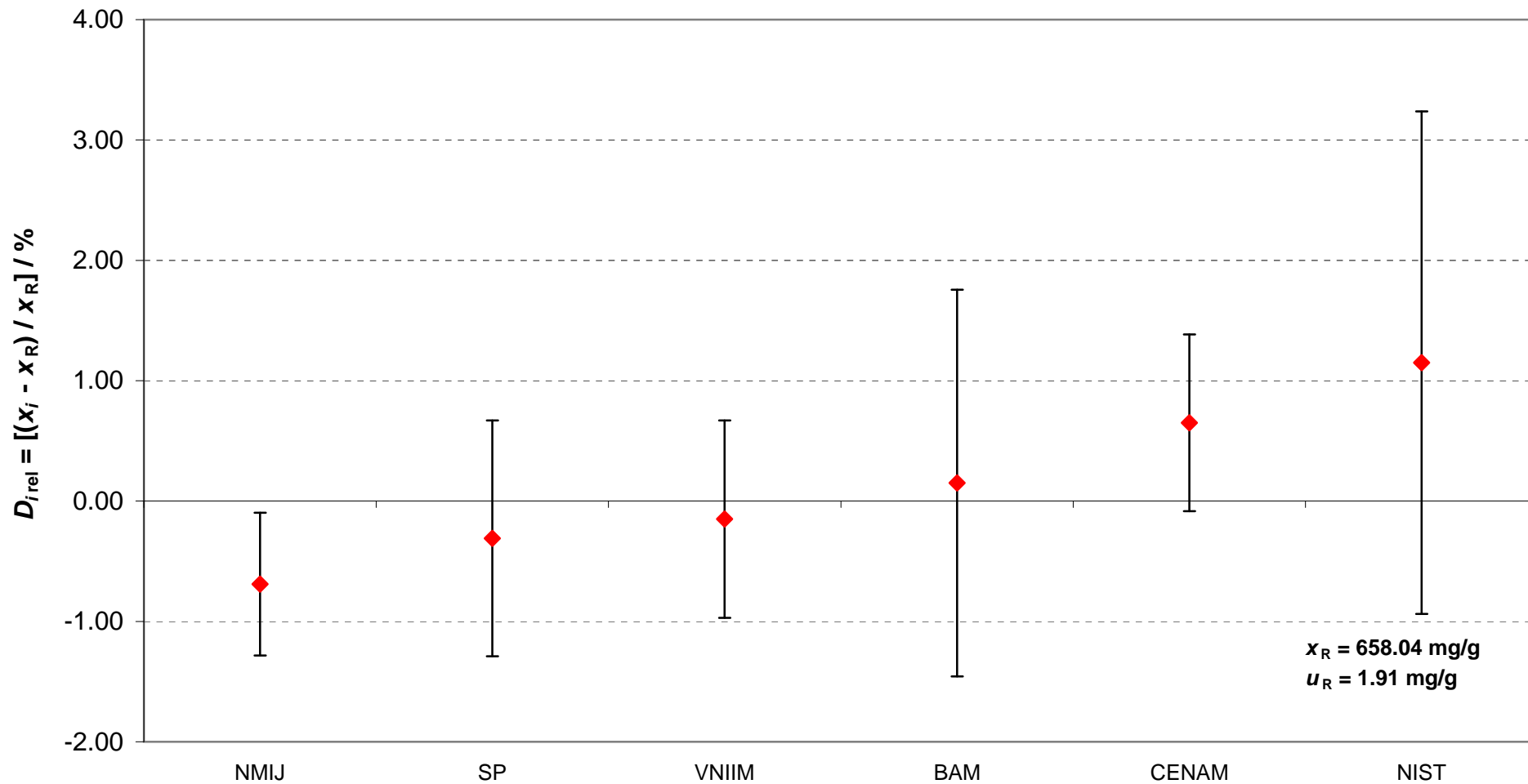
The degree of equivalence of laboratory i relative to the key comparison reference value is given by a pair of terms, both expressed in mg/g: $D_i = (x_i - x_R)$ and its expanded uncertainty U_i ($k = 2$), computed as explained in Section 10 of the Final Report. Relative values are also computed as $D_{i\text{rel}} = D_i/x_R$ and $U_{i\text{rel}} = U_i/x_R$.

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

Lab i ↓

	D_i I (mg/g)	U_i	$D_{i\text{rel}}$	$U_{i\text{rel}}$ I %
NMIJ	-4.52	3.90	-0.69	0.59
SP	-2.04	6.45	-0.31	0.98
VNIIM	-0.96	5.40	-0.15	0.82
BAM	0.96	10.57	0.15	1.61
CENAM	4.26	4.83	0.65	0.73
NIST	7.56	13.74	1.15	2.09

CCQM-K57 Silicon (Si) as Silicon Oxide (SiO₂) in common clay
Degrees of equivalence, D_i and expanded uncertainty U_i ($k = 2$)



Key comparison CCQM-K57

MEASURAND : Mass fraction of Aluminum (Al) as Aluminum Oxide (Al₂O₃) in common clay

- x_i : result of measurement carried out by laboratory i
- $U_{\text{Lab } i}$: expanded uncertainty of x_i at a 95 % level of confidence
- u_i : standard uncertainty of x_i
- $U_{\text{Lab } i} = k_i u_i$ where k_i is the coverage factor

Lab i	x_i	$U_{\text{Lab } i}$	k_i	Date of measurement
	/ (mg/g)			
BAM	147.3	1.3	2	2007
CENAM	150.22	1.29	2.1	2007
NIST	146.35	1.45	2	2007
NMIJ	148.34	2.74	2	2007
SP	145.9	2.1	2	2007
VNIIM	149.22	2.66	2	2007

Key comparison CCQM-K57

MEASURAND : Mass fraction of Aluminum (Al) as Aluminum Oxide (Al₂O₃) in common clay

The key comparison reference value, x_R , is computed as the median of all results. Its standard uncertainty, u_R , is based on the estimation of the dispersion around the median (see Section 9 of the Final Report). Its expanded uncertainty, U_R , is estimated with a coverage factor of 2.57.

$$x_R = 147.82 \text{ mg/g}, u_R = 0.87 \text{ mg/g}, U_R = 2.23 \text{ mg/g}$$

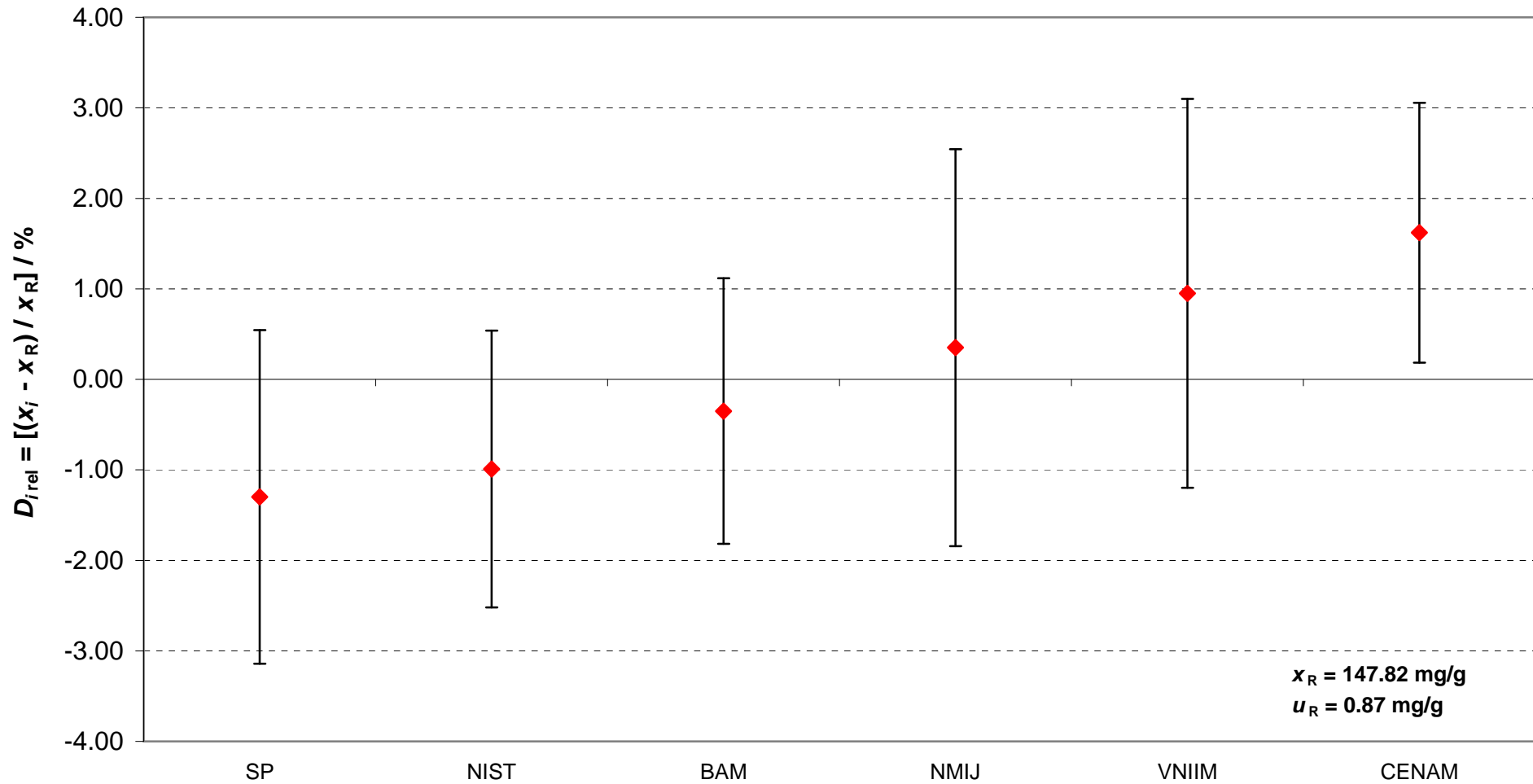
The degree of equivalence of laboratory i relative to the key comparison reference value is given by a pair of terms, both expressed in mg/g: $D_i = (x_i - x_R)$ and its expanded uncertainty U_i ($k = 2$), computed as explained in Section 10 of the Final Report. Relative values are also computed as $D_{i\text{rel}} = D_i/x_R$ and $U_{i\text{rel}} = U_i/x_R$.

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

Lab i ↓

	D_i I (mg/g)	U_i	$D_{i\text{rel}}$	$U_{i\text{rel}}$ I %
SP	-1.92	2.72	-1.30	1.84
NIST	-1.47	2.26	-0.99	1.53
BAM	-0.52	2.17	-0.35	1.47
NMIJ	0.52	3.24	0.35	2.19
VNIIM	1.40	3.18	0.95	2.15
CENAM	2.40	2.12	1.62	1.44

CCQM-K57 Aluminum (Al) as Aluminum Oxide (Al₂O₃) in common clay
Degrees of equivalence, D_i and expanded uncertainty U_i ($k = 2$)



Key comparison CCQM-K57

MEASURAND : Mass fraction of Iron (Fe) as Iron Oxide (Fe₂O₃) in common clay

x_i : result of measurement carried out by laboratory i

$U_{\text{Lab } i}$: expanded uncertainty of x_i at a 95 % level of confidence

u_i : standard uncertainty of x_i

$U_{\text{Lab } i} = k_i u_i$ where k_i is the coverage factor

Lab i	x_i	$U_{\text{Lab } i}$	k_i	Date of measurement
	/ (mg/g)			
BAM	56.3	2.8	2	2007
CENAM	55.89	0.32	2.1	2007
NIST	55.98	0.36	2	2007
NMIJ	54.54	0.59	2	2007
SP	56.6	1.2	2	2007
VNIIM	59.54	1.94	2	2007

Key comparison CCQM-K57

MEASURAND : Mass fraction of Iron (Fe) as Iron Oxide (Fe₂O₃) in common clay

The key comparison reference value, x_R , is computed as the median of all results. Its standard uncertainty, u_R , is based on the estimation of the dispersion around the median (see Section 9 of the Final Report). Its expanded uncertainty, U_R , is estimated with a coverage factor of 2.57.

$$x_R = 56.14 \text{ mg/g}, u_R = 0.21 \text{ mg/g}, U_R = 0.55 \text{ mg/g}$$

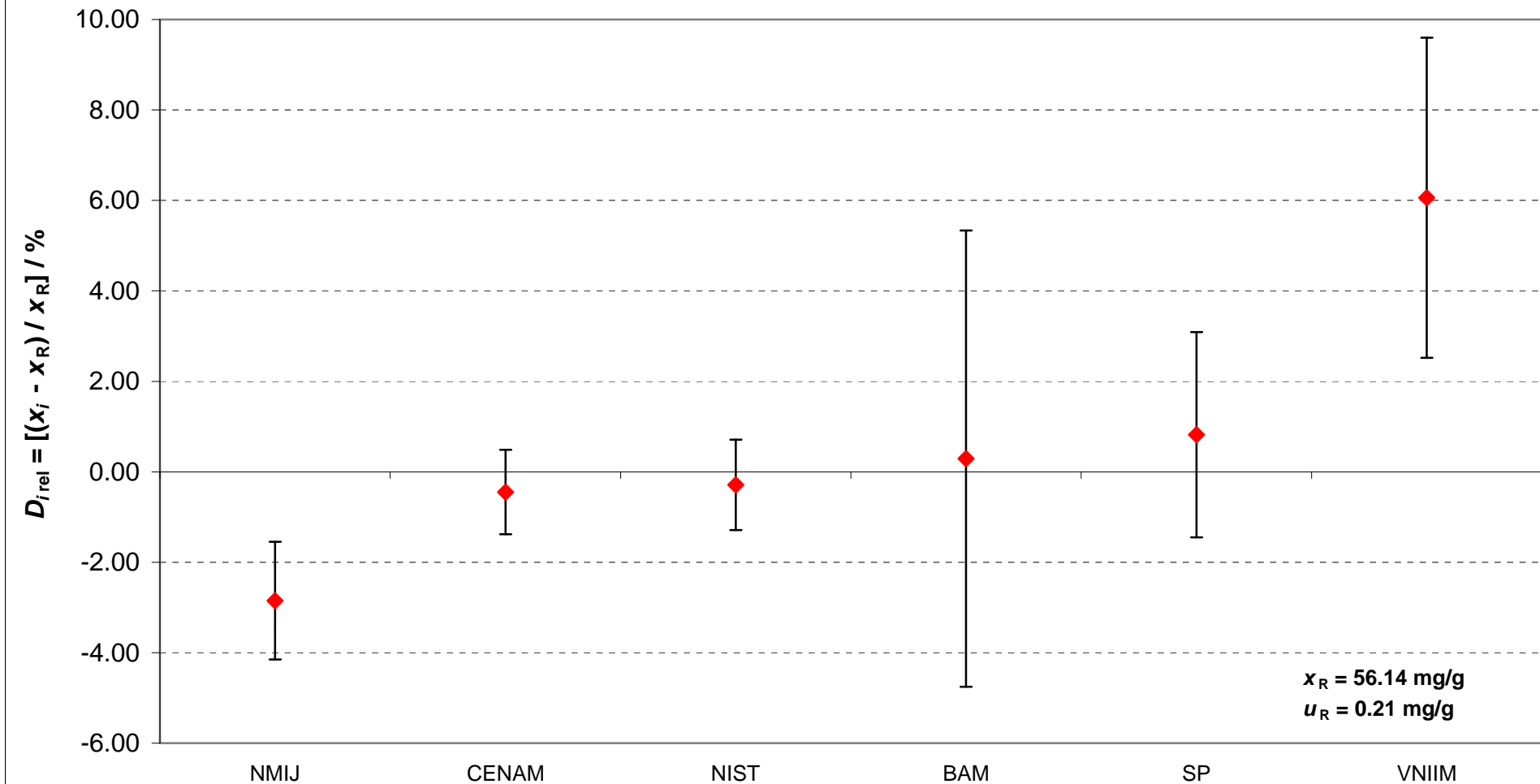
The degree of equivalence of laboratory i relative to the key comparison reference value is given by a pair of terms, both expressed in mg/g: $D_i = (x_i - x_R)$ and its expanded uncertainty U_i ($k = 2$), computed as explained in Section 10 of the Final Report. Relative values are also computed as $D_{i\text{rel}} = D_i/x_R$ and $U_{i\text{rel}} = U_i/x_R$.

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

Lab i ↓

	D_i I (mg/g)	U_i	$D_{i\text{rel}}$ I %	$U_{i\text{rel}}$
NMIJ	-1.60	0.73	-2.85	1.30
CENAM	-0.25	0.52	-0.45	0.93
NIST	-0.16	0.56	-0.29	1.00
BAM	0.16	2.83	0.29	5.05
SP	0.46	1.27	0.82	2.27
VNIIM	3.40	1.99	6.06	3.54

CCQM-K57 Iron (Fe) as Iron Oxide (Fe₂O₃) in common clay
Degrees of equivalence, D_i , and expanded uncertainty U_i ($k = 2$)



Key comparison CCQM-K57

MEASURAND : Mass fraction of Calcium (Ca) as Calcium Oxide (CaO) in common clay

- x_i : result of measurement carried out by laboratory i
 $U_{\text{Lab } i}$: expanded uncertainty of x_i at a 95 % level of confidence
 u_i : standard uncertainty of x_i
 $U_{\text{Lab } i} = k_i u_i$ where k_i is the coverage factor

Lab i	x_i	$U_{\text{Lab } i}$	k_i	Date of measurement
	/ (mg/g)			
BAM	24.42	0.64	2	2007
CENAM	24.58	0.23	2.3	2007
NIST	24.19	0.69	2	2007
NMIJ	24.23	1.37	2	2007
SP	24.7	0.8	2	2007
VNIIM	23.138	0.926	2	2007

Key comparison CCQM-K57

MEASURAND : Mass fraction of Calcium (Ca) as Calcium Oxide (CaO) in common clay

The key comparison reference value, x_R , is computed as the median of all results. Its standard uncertainty, u_R , is based on the estimation of the dispersion around the median (see Section 9 of the Final Report). Its expanded uncertainty, U_R , is estimated with a coverage factor of 2.57.

$$x_R = 24.325 \text{ mg/g}, u_R = 0.12 \text{ mg/g}, U_R = 0.30 \text{ mg/g}$$

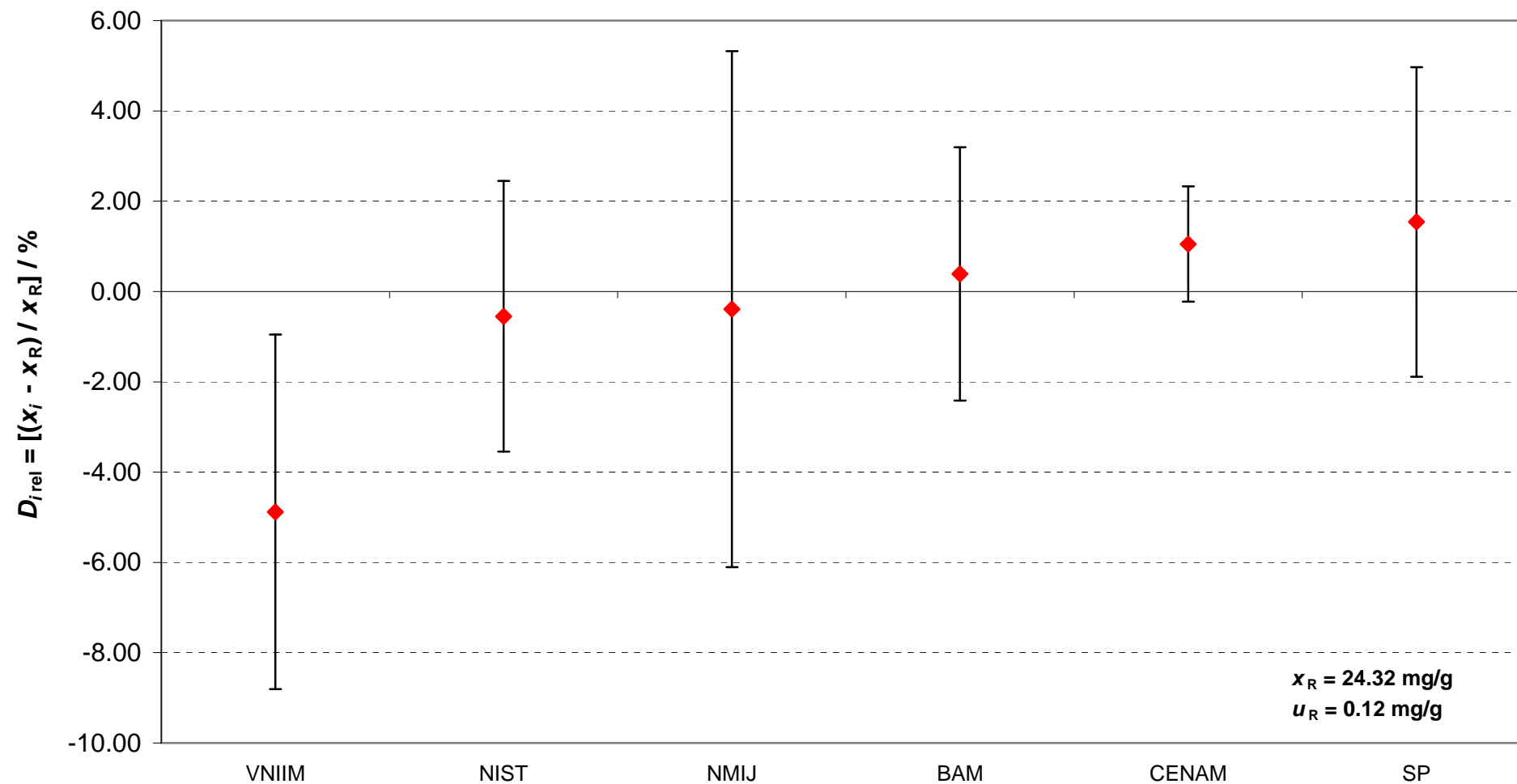
The degree of equivalence of laboratory i relative to the key comparison reference value is given by a pair of terms, both expressed in mg/g: $D_i = (x_i - x_R)$ and its expanded uncertainty U_i ($k = 2$), computed as explained in Section 10 of the Final Report. Relative values are also computed as $D_{i\text{rel}} = D_i/x_R$ and $U_{i\text{rel}} = U_i/x_R$.

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

Lab i ↓

	D_i	U_i	$D_{i\text{rel}}$	$U_{i\text{rel}}$
	/ (mg/g)		/ %	
VNIIM	-1.19	0.96	-4.88	3.93
NIST	-0.13	0.73	-0.55	3.00
NMIJ	-0.095	1.39	-0.39	5.71
BAM	0.095	0.68	0.39	2.80
CENAM	0.25	0.31	1.05	1.28
SP	0.38	0.83	1.54	3.43

CCQM-K57 Calcium (Ca) as Calcium Oxide (CaO) in common clay
Degrees of equivalence, D_i and expanded uncertainty U_i ($k = 2$)



Key comparison CCQM-K57

MEASURAND : Mass fraction of Magnesium (Mg) as Magnesium Oxide (MgO) in common clay

- x_i : result of measurement carried out by laboratory i
- $U_{\text{Lab } i}$: expanded uncertainty of x_i at a 95 % level of confidence
- u_i : standard uncertainty of x_i
- $U_{\text{Lab } i} = k_i u_i$ where k_i is the coverage factor

Lab i	x_i	$U_{\text{Lab } i}$	k_i	Date of measurement
	/ (mg/g)			
BAM	7.91	0.12	2	2007
CENAM	7.75	0.24	2.8	2007
NIST	7.70	0.21	2	2007
NMIJ	7.460	0.145	2	2007
SP	7.6	0.7	2	2007
VNIIM	9.157	0.513	2	2007

Key comparison CCQM-K57

MEASURAND : Mass fraction of Magnesium (Mg) as Magnesium Oxide (MgO) in common clay

The key comparison reference value, x_R , is computed as the median of all results. Its standard uncertainty, u_R , is based on the estimation of the dispersion around the median (see Section 9 of the Final Report). Its expanded uncertainty, U_R , is estimated with a coverage factor of 2.57.

$$x_R = 7.72 \text{ mg/g}, u_R = 0.09 \text{ mg/g}, U_R = 0.24 \text{ mg/g}$$

The degree of equivalence of laboratory i relative to the key comparison reference value is given by a pair of terms, both expressed in mg/g: $D_i = (x_i - x_R)$ and its expanded uncertainty U_i ($k = 2$), computed as explained in Section 10 of the Final Report. Relative values are also computed as $D_{i\text{rel}} = D_i/x_R$ and $U_{i\text{rel}} = U_i/x_R$.

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

Lab i ↓

	D_i	U_i	$D_{i\text{rel}}$	$U_{i\text{rel}}$
	/ (mg/g)		/ %	
NMIJ	-0.26	0.24	-3.42	3.07
SP	-0.12	0.72	-1.61	9.38
NIST	-0.02	0.28	-0.31	3.65
CENAM	0.02	0.25	0.31	3.29
BAM	0.19	0.22	2.41	2.88
VNIIM	1.43	0.55	18.55	7.07

CCQM-K57 Magnesium (Mg) as Magnesium Oxide (MgO) in common clay
Degrees of equivalence, D_i and expanded uncertainty U_i ($k = 2$)

