



# NiMS

## Nickel Migration Proficiency Testing Scheme

## Scheme Description

### LGC

#### Proficiency Testing

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NiMS Scheme Description

Record of issue status and modifications

<b>ISSUE</b>	<b>ISSUE DATE</b>	<b>DETAILS</b>	<b>AUTHORISED BY</b>
1	Oct 2012	First issue.	M. Whetton
2	Mar 2013	Change to scheme year and potential materials which may be used as test samples.	M. Whetton
3	Sept 2013	Method section added on page 3.	M. Whetton
4	Dec 2013	Homogeneity details updated	W. Gaunt
5	Jan 2014	Homogeneity information updated	M. Whetton
6	Sept 2014	NiMS Scheme added to the UKAS schedule of accreditation; therefore, UKAS logo added on page 1. Amendment to subcontracting information in 'Test Materials' section.	M. Whetton
7	Sept 2015	Removed Hard copy report information.	A McCarthy
8	Sept 2016	Methods updated.	W. Gaunt
9	Aug 2019	SDPA updated.	W. Gaunt

Notes:

Where this document has been translated, the English version shall remain the definitive version

### **Scheme Aims and Organisation**

The primary aim of the Nickel Migration Scheme (NiMS) is to enable laboratories performing the determination of nickel release from appropriate articles to monitor their performance and compare it with that of their peers. The NiMS scheme also aims to provide information to participants on technical issues and methodologies relating to determination of nickel release.

The NiMS scheme year operates from January to December. Further information about NiMS, including test material availability, round despatch dates and reporting deadlines, are available on the current NiMS application form.

### **Test Materials**

Details of the test material available for the NiMS scheme are given in Appendix A. The test parameters are reviewed periodically to ensure that they meet the needs of current laboratory testing and regulatory requirements.

Each batch of materials used is tested for homogeneity by measurement of the surface area of the sample and by determination of the nickel release for a randomly selected group of test materials. In exceptional circumstances, where a test material is produced with 100% composition of a single element, homogeneity testing may not be required. Details of the homogeneity testing performed will be provided in the NiMS test reports.

Some aspects of the scheme, such as test material production, homogeneity testing and stability assessment, can from time to time be subcontracted. When subcontracting occurs, it is placed with a competent subcontractor and LGC is responsible for this work. The planning of the scheme, the evaluation of performance and the authorisation of the final report will never be subcontracted.

### **Statistical Analysis**

Information on the statistics used in NiMS can be found in the LGC Standards, proficiency testing general protocol and in the test reports for each round. Methods for determining analyte assigned values and the values of the SDPA used for individual samples are given in Appendix A.

### **Methods**

Methods are listed in PORTAL. Please select the most appropriate method from the list. If none of the methods are appropriate, then please report your method as 'Other' and record a brief description in the Comments Section in PORTAL.

### **Results and Reports**

NiMS results are returned via LGC Standards electronic reporting software, PORTAL, full instructions for which are provided by email. However, participants may request result submission forms on which to report and return results if they are unable to report via electronic means, although, this will incur an additional charge.

NiMS reports will be available on the website within 10 working days of round closure. Participants will be emailed a link to the report when it is available.

## APPENDIX A - Description of abbreviations used

**Assigned Value (AV)** - The assigned value may be derived in the following ways:

- From the robust mean (RMean). This is the median of participant results after the removal of test results that are inappropriate for statistical evaluation, e.g. miscalculations, transpositions and other gross errors. Generally, the assigned value will be set using results from all methods, unless the measurement is considered method-dependant, in which case the assigned value will be set by method as illustrated in the report tables.  
For some analytes, where there is a recognised reference method for that type of measurement, this may be used as the assigned value for a particular analyte i.e. it would be applied to results obtained by any method.

*Traceability: Assigned values which are derived from the participant results, or a sub-set of the results are not traceable to an international measurement standard. The uncertainty of assigned values derived in this way is estimated from the participant results, according to ISO 13528.*

- From a formulation value (Formulation). This denotes the use of an assigned value derived from sample preparation details, where known and exact quantities of analyte have been used to prepare the sample.

*Traceability: Assigned values calculated from the formulation of the test sample are traceable, via an unbroken metrological traceability chain, to an international measurement standard. The measurement uncertainty of the assigned value is calculated using the contributions from each calibration in the traceability chain.*

- From a qualitative formulation (Qual Form). This applies to qualitative tests where the assigned value is simply based on the presence/absence of the analyte in the test material.

*Traceability: Assigned values calculated from the qualitative formulation of the test sample are traceable to a certified reference standard or a microbiological reference strain.*

- From expert labs (Expert). The assigned value for the analyte is provided by an 'expert' laboratory.

*Traceability: Assigned values provided by an 'expert' laboratory may be traceable to an international measurement standard, according to the laboratory and the method used. The uncertainty of measurement for an assigned value produced in this way will be provided by the laboratory undertaking the analysis. Details of traceability and the associated uncertainty will be provided in the report for the scheme/round.*

### Range

This indicates the concentration range at which the analyte may be present in the test material.

### SDPA

SDPA represents the 'standard deviation for proficiency assessment' which is used to assess participant performance for the measurement of each analyte. This may be a fixed value (as stated), a percentage (%) of the assigned value or based on the robust standard deviation of the participant measurement results, either across all methods or by method depending on whether the measurement made is method dependent (see assigned value).

**Units**

This indicates the units used for the assessment of data. These are the units in which participants should report their results. For some analytes in some schemes participants may have a choice of which units to report their results, however, the units stipulated in this scheme description are the default units to which any results reported using allowable alternative results will be converted to.

**DP**

This indicates the number of decimal places to which participants should report their measurement results.

NiMS Scheme Description

**Sample 1**                      **Determination of Nickel Release (EN 1811:2011)**  
**Supplied as:**                3 x test articles\* (A, B and C)

Analyte	Method	AV	Range	SDPA	Units	DP
Surface area	Micrometer Digital calipers	RMean	All	Robust SD	cm <sup>2</sup>	2
Nickel release	ICP-MS ICP-OES GFAAS	RMean	All	33.3% of AV	µg/cm <sup>2</sup> /week	2

\*Test articles may be alloy disks, jewellery or other appropriate articles. Whole items or, where relevant, parts of items may be provided.