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ISO 6486-1

CERAMIC WARE, GLASS-CERAMIC WARE AND GLASS DINNERWARE IN CONTACT WITH FOOD - RELEASE OF LEAD AND CADMIUM - TEST METHOD

Program: SQ-3515.V2

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1. FOREWORD

This report summarizes the results of the **SQ-3515.V2** proficiency testing program on the determination of the release of lead and cadmium from ceramic ware, glass ceramic ware and glass dinnerware. This program is conducted in a bilateral format, following the “split-sample” design described in clause A.4.2 of ISO/IEC 17043: 2023 (Alternative interlaboratory comparisons).

South Quality conducted the testing program in April 2026 with the aim of assessing the laboratory's ability to competently perform the designated tests.

2. ORGANIZATION

Program Coordinator: Eng. Erika Brest
 Assistant Technician: Mateo Giovanni
 Statistics: Lic. Manuel Tozaki
 Supervision: Eng. Emiliano Medina

3. OBJECTIVE

The objective of this proficiency testing program is the determination of the release of lead and cadmium from ceramic ware, glass ceramic ware and glass dinnerware, using the following standard:

Standard
ISO 6486-1: 2019

For verification, batches of dinnerware have been selected.

Participants in this program have not been previously informed about the expected behavior of the samples they receive.

4. PARTICIPANT

Company: **Bureau Veritas Consumer Products Services (Bangladesh) Ltd.**
 Laboratory: **Bureau Veritas Consumer Products Services (Bangladesh) Ltd.**
 Country: Bangladesh
 Client ID: S340
 Contact person: Dulaly Chowdhury
 Manager, Technical Service
dulaly.chowdhury@bureauveritas.com

5. HOMOGENEITY

Several batches were prepared identically by the staff at South Quality.

Subsequently, a homogeneity study was conducted with an ISO 17025 accredited laboratory.

The control process followed ISO 33405: 2024, clauses 7.4.1.1 / 7.4.1.2. Stratified random sampling was applied, and samples were selected using random number generation software.

The results of this test are presented below:

Size of each batch: **150 units**

Tested samples from each batch: **30 units**

DETERMINATION	HOMOGENEITY OF RESULTS IN THE ANALYZED SAMPLES - CERAMIC DINNERWARE -		
	BATCH: LGC3237	BATCH: LGC3238	BATCH: LGC3239
Release of lead	YES	YES	NO
Release of cadmium	YES	YES	NO

Size of each batch: **150 units**

Tested samples from each batch: **30 units**

DETERMINATION	HOMOGENEITY OF RESULTS IN THE ANALYZED SAMPLES - GLASS DINNERWARE -		
	BATCH: LGC3410	BATCH: LGC3411	BATCH: LGC3412
Release of lead	YES	YES	YES
Release of cadmium	NO	YES	YES

Samples for this program are taken from selected batches identified as **LGC3238** and **LGC3412**.

For the batches indicated, the values determined in the homogeneity study are used as assigned values.

Analysis of this test data indicated that the selected samples were sufficiently homogeneous for the program and therefore the results of participants identified as outliers cannot be attributed to sample variability.

6. SAMPLE INFORMATION

The following samples were sent for testing:

Batch:	LGC3238
Sample ID:	08
Characteristics:	Ceramic dinnerware - Ø18 cm - 6 units

Batch:	LGC3412
Sample ID:	04
Characteristics:	Glass dinnerware - Ø23 cm - 6 units

7. IMAGES





8. ASSIGNED VALUES

PARAMETER	BATCH: LGC3238		BATCH: LGC3412	
	AVG	SD	AVG	SD
RELEASE OF LEAD ($\mu\text{g}/\text{dm}^3$)	0.585	0.0858	1.53	0.055
RELEASE OF CADMIUM ($\mu\text{g}/\text{dm}^3$)	< LOQ	-	< LOQ	-

9. PARTICIPANT RESULTS (SEE APPENDIX)

PARAMETER	CODE: LGC3238-08 (AVG)	CODE: LGC3412-04 (AVG)
RELEASE OF LEAD ($\mu\text{g}/\text{dm}^3$)	0.650	1.44
RELEASE OF CADMIUM ($\mu\text{g}/\text{dm}^3$)	ND	ND

10. STATISTICS

The results must be treated as both qualitative and quantitative.

For qualitative results (Values below the limit of detection, LOD or not detected), the comparison will be made directly against the assigned values, so any difference will be evaluated as Unsatisfactory. In cases where the participant's LOD is greater than the reference, it will be considered Satisfactory if the reference value is below the participant's LOD.

For quantitative results the comparison is made according to B.4.1.3 of ISO 17043 and the appropriate technique is to compare participant results with the assigned values.

The results can be compared using ***z score***.

$$z = \frac{x - X}{\hat{\sigma}}$$

x is the participant's result

X is the assigned value

$\hat{\sigma}$ is the standard deviation

The performance evaluation of each sample is carried out with the following criteria:

$|z| \leq 2.0$ indicates “satisfactory” performance and generates no signal;

$2.0 < |z| < 3.0$ indicates “questionable” performance and generates a warning signal;

$|z| \geq 3.0$ indicates “unsatisfactory” performance and generates an action signal;

11. EVALUATION OF PERFORMANCE

QUALITATIVE RESULTS				
BATCH	PARAMETER	PARTICIPANT RESULT	ASSIGNED VALUE	PERFORMANCE RESULT
LGC3238	RELEASE OF CADMIUM (µg/dm ³)	ND	< LOQ	SATISFACTORY
LGC3412	RELEASE OF CADMIUM (µg/dm ³)	ND	< LOQ	SATISFACTORY

QUANTITATIVE RESULTS					
BATCH	PARAMETER	AVERAGE		z score	PERFORMANCE RESULT
		PARTICIPANT RESULT	ASSIGNED VALUE		
LGC3238	RELEASE OF LEAD (µg/dm ³)	0.650	0.585	1.60	SATISFACTORY
LGC3412	RELEASE OF LEAD (µg/dm ³)	1.44	1.53	1.23	SATISFACTORY

12. CONCLUSIONS

The overall performance on this **SQ-3515.V2** program from the participant laboratory **Bureau Veritas Consumer Products Services (Bangladesh) Ltd.**, is **SUFFICIENT** based on expected results.

The criteria used for the evaluation of the overall performance are the following:

- **SUFFICIENT** performance: No unsatisfactory/questionable results were obtained.
- **ALMOST SUFFICIENT** performance: No unsatisfactory results were obtained, but one questionable result was found.
- **INSUFFICIENT** performance: An unsatisfactory result or two questionable results were obtained.

APPENDIX

PARTICIPANT RESULTS

(Results form)



INSTRUCTIONS & RESULTS FORM

PROGRAM:	Ceramic ware, glass-ceramic ware and glass dinnerware in contact with food - Release of lead and cadmium - Test method
CODE:	SQ-3515
VERSION:	2
STANDARD:	ISO 6486-1
COORDINATOR:	Eng. Erika Brest (ebrest@ptsouthquality.com)

1 - General

This document serves as a guide for managing the results of the **SQ-3515.V2** program.

Results must be typed, not handwritten.

2 - Standard

ISO 6486-1: 2019

3 - Tests involved

TEST
Determination of the release of lead and cadmium from ceramic ware, glass ceramic ware and glass dinnerware

4 - Samples

CODE	SAMPLE	QUANTITY
LGC3238-08	Ceramic dinnerware - Ø18 cm	6
LGC3412-04	Glass dinnerware - Ø23 cm	6

5 - Notes

- a) Being a bilateral program, there is no deadline for submitting results.
- b) The tables in this document may be modified by the participant, if desired, to include data or observations.
- c) The samples are to be handled as routine lab samples, with all testing, documentation, and reporting adhering to **ISO 6486-1**.
- d) Samples must be retained until the end of the program, which concludes with the submission of the final report.
- e) To review the results, test images would be appreciated. Images can be attached at the end of this document or sent by email.
- f) Once this document is completed, it must be converted into a PDF file and sent to the program coordinator.

6 - Test results

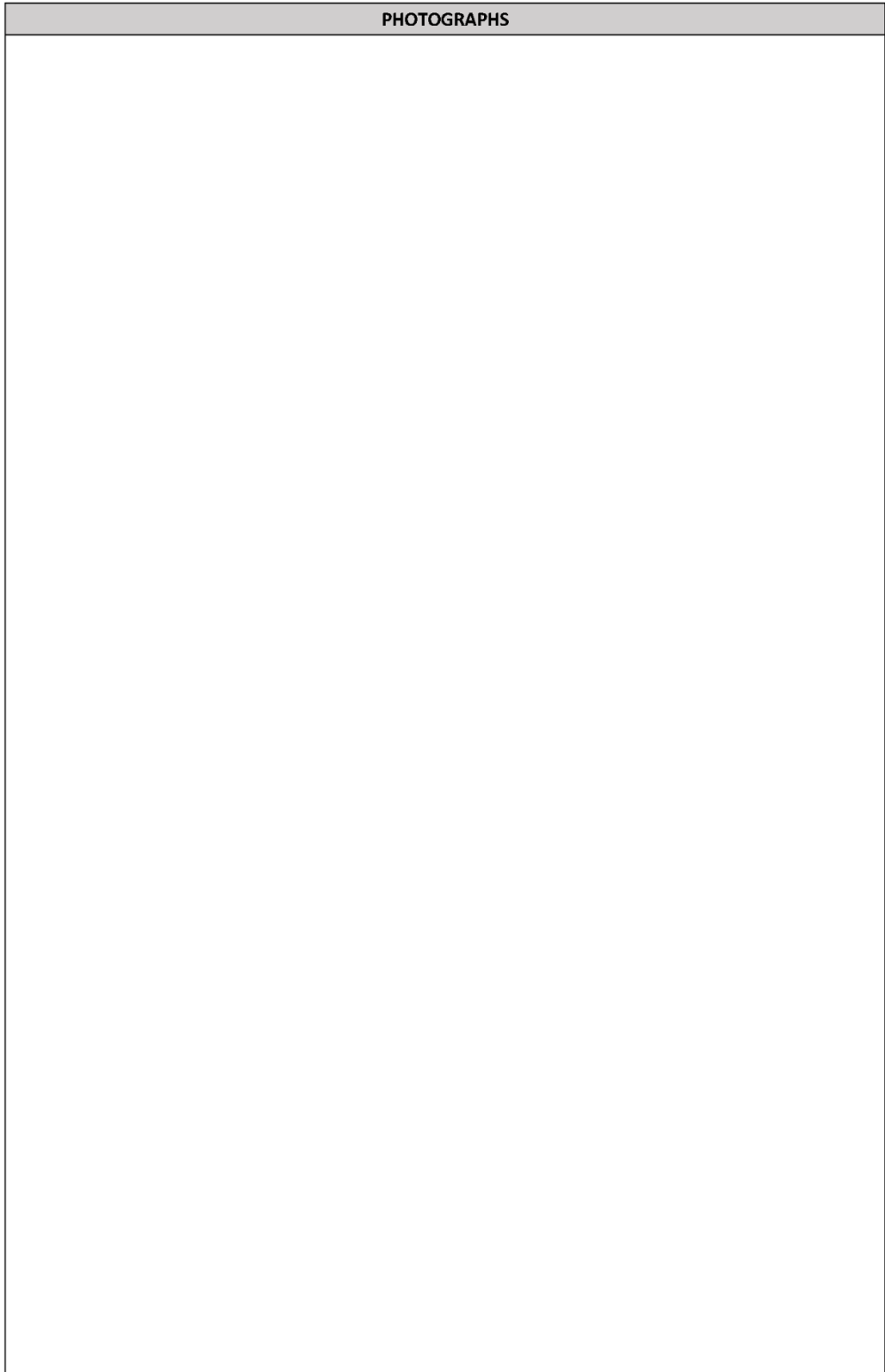
Test date:	07.04.2026
Analytical method:	ICP-MS

CODE	Item	Release of lead ($\mu\text{g}/\text{dm}^2$)	Release of cadmium ($\mu\text{g}/\text{dm}^2$)
LGC3238-08	1	0.493	ND
	2	0.579	ND
	3	0.828	ND
	4	0.699	ND
	MEAN	0.650	ND

CODE	Item	Release of lead ($\mu\text{g}/\text{dm}^2$)	Release of cadmium ($\mu\text{g}/\text{dm}^2$)
LGC3412-04	1	1.44	ND
	2	1.61	ND
	3	1.53	ND
	4	1.16	ND
	MEAN	1.44	ND

OBSERVATIONS

PHOTOGRAPHS



----- END OF REPORT -----