

DETERMINATION OF ^{137}Cs IN MILK POWDER



INTER-LABORATORY COMPARISON PROGRAM

GL/2011/PT-5

FINAL REPORT

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Summary of Results

1. The purpose of this inter-laboratory comparison is to enable participating laboratories to demonstrate their testing capability on the determination of the activity of the gamma-ray emitting radionuclide ^{137}Cs in a food matrix.
2. The test sample is a milk powder reference material (IAEA-152) [3] from International Atomic Energy Agency (IAEA), where 713.8 g of the sample contained in a 1-L Model 133 Marinelli breaker was used for analysis. Participants were not informed of the source of the sample.
3. A total of 5 laboratories or organizations in Hong Kong registered for the program. The sample was sent to participants in sequence. All participants returned their results to the organizer.
4. The assigned value was calculated based on the recommended value of the reference material and the moisture content determined by the organizer.
5. The performance of the participants was assessed by the use of z-scores. The target standard deviation (σ) was $0.10 \times V_{\text{assign}}$ on the basis of the “fitness for purpose” principle.
6. The following is a summary of participants’ results:

Lab. Code	Report results (Bq/kg)	Date of Analysis	Δt (days)	Assigned value (V_{assign}) (Bq/kg)	$\sigma = 0.1 V_{\text{assign}}$ (Bq/kg)	z-score
1	944	9/6/2011	8683	1122	112.2	-1.59
2	987	13/6/2011	8687	1122	112.2	-1.20
3	1110	2/6/2011	8676	1122	112.2	-0.11
4	1097	17/6/2011	8691	1121	112.1	-0.21
5	843	16/6/2011	8690	1121	112.1	-2.48