



# CERTIFIED REFERENCE MATERIAL IRMM – 804

## CERTIFICATE OF ANALYSIS

RICE FLOUR		
	Mass Fraction	
	Certified value <sup>1)</sup> [mg/kg]	Uncertainty <sup>2)</sup> [mg/kg]
As	0.049	0.004
Cd	1.61	0.07
Cu	2.74	0.24
Mn	34.2	2.3
Pb	0.42	0.07
Zn	23.1	1.9

1) Unweighted mean value of the means of accepted sets of data, each set being obtained in a different laboratory and/or with a different method of determination. The certified values are traceable to the SI.  
2) Expanded uncertainty with a coverage factor  $k = 2$  according to the Guide for the Expression of Uncertainty in Measurement, corresponding to a level of confidence of about 95 %.

This certificate is valid for one year after purchase.

Sales date:

The minimum amount of sample to be used is 100 mg.

Geel, February 2007

Signed: \_\_\_\_\_

Prof. Dr. Hendrik Emons  
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EC-JRC-IRMM  
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<b>Additional Material Information</b>	
	Mass Fraction
	Value <sup>1)</sup> [mg/kg]
Se	0.038
1) Unweighted mean value of the means of 5 accepted sets of data, each set being obtained in a different laboratory and/or with a different method of determination.	

## DESCRIPTION OF THE SAMPLE

The samples consist of 15 g of rice flour in amber glass bottles, closed with polyethylene inserts, screw caps and a crimp seal.

## ANALYTICAL METHOD USED FOR CERTIFICATION

- Electrothermal atomic absorption spectrometry (ETAAS)
- Flame atomic absorption spectrometry (FAAS)
- Hydride generation atomic fluorescence spectrometry (HGAFS)
- Inductively coupled plasma mass spectrometry (ICP-MS)
- Inductively coupled plasma mass spectrometry using isotope dilution (ID-ICP-MS)
- Inductively coupled plasma optical emission spectrometry (ICP-OES)
- Instrumental neutron activation analysis (INAA)
- $k_0$ -neutron activation analysis ( $k_0$ -NAA)
- Radiochemical neutron activation analysis (RNAA)
- Thermal ionisation mass spectrometry using isotope dilution (ID-TIMS)

## PARTICIPANTS

- Bureau National de Métrologie et le Laboratoire National d'Essais (BNM – LNE), Paris (FR)
- Bundesanstalt für Materialforschung und –prüfung (BAM), Berlin (DE)
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- Central Science Laboratory (CSL), Sand Hutton (GB)
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- Nuclear Research and consultancy Group (NRG) Petten, Petten (NL)
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- Rijksuniversiteit Gent, Gent (BE)
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- University of Plymouth, Department of Environmental Sciences, Plymouth (GB)
- Vlaamse Instelling voor Technologisch Onderzoek (VITO), Mol (BE)
- WRc-NSF Ltd., Medmenham (GB)

## **SAFETY INFORMATION**

The usual laboratory safety precautions apply.

## **INSTRUCTIONS FOR USE**

The main purpose of the material is to assess method performance, i.e. for checking accuracy of analytical results. As any reference material, it can also be used for control charts or validation studies.

The bottles should be shaken by turning upside down for at least two minutes before opening to ensure re-homogenisation of the content. The bottles should only be opened after warm-up to room temperature.

Dry mass determination should be carried out on separate subsamples. Weighing of the samples for dry mass determination and the analysis must be done at the same time to avoid differences in moisture due to the hygroscopicity of the rice flour. Dry mass determination should be carried out by drying in a ventilated oven at 85 °C for at least 12 hours, until constant weight is reached. At this stage two consecutive net sample weights should differ by less than 0.5 %.

## **STORAGE**

IRMM-804 should be stored refrigerated at 4 °C. Open it only after warming-up to room temperature. Care should be taken to avoid moisture pickup once the bottles are open, as the material is hygroscopic.

However, the European Commission cannot be held responsible for changes that happen during storage of the material at the customer's premises, especially of opened bottles.

## **LEGAL NOTICE**

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## **NOTE**

A technical report on the production of IRMM-804 is available on the internet (<http://www.irmm.jrc.be>). A paper copy can be obtained from IRMM on request.