

# Au RM3 Reference Material Update

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MONNAIE ROYALE CANADIENNE

## Overview

- In 2010, two gold and two silver reference materials were made, certified, and distributed through the LBMA
  - First truly international reference materials
  - Cover 999 – 999.9‰
  - 132 individual RM units sold (November 2011)
- Useful for the precious metal industry
  - User results presented at 2011 LBMA Assayer & Refiner Symposium
- There is a need for more precious metal based reference materials



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## Next Reference Materials

- Surveys were sent out in 2010 and 2011 to determine what to work on next:
  - Options presented:
    - Au with higher concentrations of Ag, Cu, Pd, Pt
    - Ag with higher concentrations of Au, Cu, Pd, Pt
    - Ag with elements not included in AgRM1 & 2
    - Au with elements not included in AuRM1 & 2
    - Au 995, higher Cu and Ag
  - Results were inconclusive
    - Low number respondents
    - Almost equal positive responses to all options



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## A Choice Was Made

- Au 995 Selected by the Steering Committee (AuRM3)
  - Extension of AuRM series
  - Higher concentration of some elements
  - Addition of Iridium and Indium
  - Applicable to Spark OES
  - Applicable to XRF (if made sufficiently large)
- Committee thought this would serve the greater need



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## AuRM3

- Disk form
  - 30 mm diameter, 5 mm height
- Mass:  $\approx$  69 g or 2.2 tr.oz.
- Au  $\approx$  995‰
- 12 elements
- Homogeneity testing will be done
- Will come with a certificate of analysis
- Concentration values will be traceable as with other RM's

  
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## Elements & Target Concentrations AuRM3

Element	Target Concentrations, ppm	Acceptable Range, ppm
Ag*	4500	4200 - 4700
Cu*	340	300 - 400
Fe	25	20 - 30
In	10	8 - 15
Ir	10	8 - 15
Ni	10	8 - 20
Pb	25	20 - 30
Pd	25	20 - 30
Pt	25	20 - 30
Sn	10	8 - 20
Ti	10	8 - 20
Zn	10	8 - 20

  
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Timeline


Time	Event
April 2012	Call for tender to manufacture AuRM3
June 2012	Two quotes received
June 2012	Krastsvetmet selected
July 2012	Project budget completed
July 2012	Invitation to purchase sent out to GDL
October 2012	Price revision due to low response to invitation to purchase
September 2013	AuRM3 should be manufactured
October 2013	Laboratory analysis of shavings
November 2013	Finalize concentration values
December 2013	AuRM3 ready for distribution



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Assayer Participation

- Analysis laboratories
  - 5 laboratories (Steering Committee)
  - Others needed
- Purchasers
  - RM's need to be out in laboratories and used
- Future survey input
  - Steering Committee and LBMA will only produce what is wanted
  - Ideas for other reference materials



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## Acknowledgements

- Stewart Murray: LBMA
- Chen Jie: Great Wall Precious Metals
- Jonathan Jodry: Metalor Technologies
- Neil Harby, Madeleine Theron: Rand Refinery
- Dirk Hofmans: Umicore (Belgium)
- Hitoshi Kosai, Ichimitsu Itabashi, Hiroshi Sawai:  
Tanaka Kikinzoku Kogyo K. K.
- Royal Canadian Mint



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