



RoHS-related CRM activities of IRMM

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IRMM's Mission

Joint Research Centre

The mission of the IRMM is to promote a common and reliable European measurement system in support of EU policies.

The prime objective of the IRMM is to build confidence of measurements by the development, production and dissemination of internationally accepted quality assurance tools, including reference materials, validated methods, reference measurements, inter-laboratory comparisons and providing training.



ISO Guide 34 for the production of Reference materials

derived from plant and animal matter, certified for elements, small organic molecules, macromolecules incl. GMOs, method-defined parameters

ISO 17025

GM quantification by rt-PCR or ELISA
Water determination
Particle size distribution





Outline

- IRMM's assessment of the situation regarding RoHS relevant CRMs
- RoHS related CRMs available from IRMM
- Project "Polybrominated flame retardants in plastics"



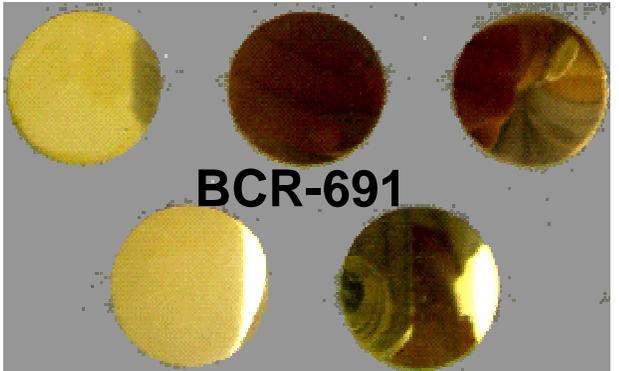
Materials needed

	Pb, Cd, Hg	Cr(VI)	Flame retardants
Metals	needed	needed	not relevant
Ceramics	needed	not relevant	not relevant
Polymers	needed	less relevant	needed
Electronic parts	Not main target for analysis		



CRMs available

- Metal alloys: bronze, Zn, ZnAl4, pure Pb certified for **Pb** and **Cd**
- **Cr(VI)**: welding dust loaded on a filter certified for total leachable Cr(VI) (BCR-545)
 - high concentration, but applicable to check whether the spot test works at all
- **Ceramic Matrices: two glasses certified for Pb and Cr (concentration differs from RoHS requirements)**





CRMs available cont.

Polymers

- 4 polyethylene materials certified for Cd
- 2 polyethylene materials certified for Br, Cd, Cl, Cr, Hg, Pb (and other elements)





Materials needed

	Pb, Cd, Hg	Cr(VI)	Flame retardants
Metals	available (IRMM and others)	needed	not relevant
Ceramics	available (IRMM and others)	not relevant	not relevant
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PBBs and PBDEs in plastics (1)

- 2 materials: **ABS** and **PC**
- Octa-PBB, Octa PBDE and Deca PBDE added (technical)
- concentration levels: about **0.7 g/kg** for each mixture
- To be certified: as many **Penta, hexa-, hepta-, octa- and nona-PBBs** and **PBDEs** as possible; **deca PBDE, total Br** traceable to SI
- Target (expanded) uncertainty: 15 %



PBBs and PBDEs in plastics (2)

- Approach: **Interlaboratory comparison** by laboratories of proven competence
- **PBB/PBDE**
 - HPLC-UV, HPLC-MS (?), GC-MS for PBB and PBDE
 - Standards from different suppliers
 - about 20 technically accepted datasets → 25 laboratories needed
- **Br: NAA, ICP-MS, IC etc.; about 10 laboratories**





PBBs and PBDEs in plastics (3)

Desired timing

early 2006

- Material processing

2006

- Homogeneity, short-term stability studies
- Interlaboratory comparison (lab proficiency)

2007

- Long-term stability
- Characterisation
- Release of the material



How to support IRMM?

- **measurements for homogeneity, stability or characterisation**
- **preparation the plastics**
 - not just a standard batch: presumable multiple extrusion is required for a good minimum sample intake and homogeneity

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