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Sitz der Gesellschaft:  
Leverkusen  
Eintragung: Amtsgericht Köln  
HR A 20833

2009-05-20

## Certificate of Analysis

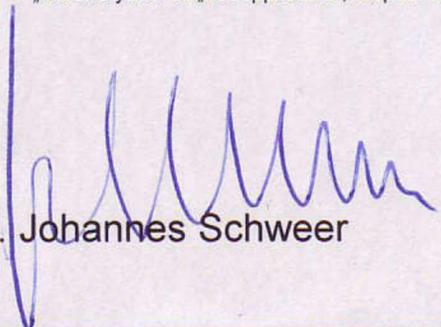
<b>Sample:</b>	PCD (center) with concentric hard metal ring
<b>Part / Batch / Lot:</b>	MANT R7040
<b>Customer-Material-no.:</b>	
<b>Trade name:</b>	
<b>Origin:</b>	Kiwus GmbH

The sample<sup>1)</sup> received was tested by X-ray fluorescence analysis in a DIN EN ISO/IEC 17025 compliant laboratory. Contents of substances for which maximum concentration values are stated in the RoHS directive of the European Union (2002/95/EU) of 2003-01-27, in the modification of this directive (2005/618/EU) of 2005-08-18 and in the Elektro- und Elektronikgerätegesetz (ElektroG) of the Federal Republic of Germany of 2005-03-16 are as follows:

Substance	Content [mg/kg]	LOQ <sup>2)</sup>	Limit (RoHS) / mg/kg	RoHS compliant
Cadmium (Cd)	<10	<10	100	yes
Lead (Pb)	<100	<100	1000	yes
Chrome (Cr) total <sup>3)</sup>	<300	<300	no limit	n.a. <sup>6)</sup>
Chrome (Cr) hexavalent <sup>4)</sup>	n.a. <sup>6)</sup>	<300	1000	yes
Mercury (Hg)	<300	<300	1000	yes
Bromine (Br)	<30	<30	no limit	n.a. <sup>6)</sup>
PBB/PBDE <sup>5)</sup>	n.a. <sup>6)</sup>	<300	1000	yes

### The sample is RoHS compliant.

- 1) It is assumed that the sample is present as a homogeneous material.
- 2) All data given in mg/kg; the limit of quantification (LOQ) corresponds to the threefold of the limit of detection (LOD)
- 3) It is assumed that hexavalent chrome is not present in metallic samples (compare also recommendations of the IEC, International Electrotechnical Commission).
- 4) UV-VIS-spectrophotometry (diphenylcarbide method); the content of hexavalent chrome is less than or equal to the total content of chrome.
- 5) The content of bromine is used as the basis for the calculation of the content of PBB / PBDE (total of polybrominated biphenyls and polybrominated diphenylethers).  
The maximum content of PBB / PBDE will be about three times the content of bromine (as derived from monobrominated biphenyl or diphenylether).
- 6) „not analyzed“ or „not applicable“, respectively

  
Dr. Johannes Schweer



DAC-PL-0001-94-20-01

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