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O.W.S.

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HEAVY METALS

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**FINAL REPORT**  
**HEAVY METALS**  
**OF**  
**EATware™ BIODEGRADABLE TABLEWARE**

**STUDY RTS-2/1**

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### HEAVY METALS

The heavy metal content of material EATware™ biodegradable tableware is given in Table 1, together with the limit values as prescribed by CEN norm EN 13432 (2000) 'Requirements for packaging recoverable through composting and biodegradation - Test scheme and evaluation criteria for the final acceptance of packaging' and ASTM D 6868-03 'Standard Specification for Biodegradable Plastics Used as Coatings on Paper and Other Compostable Substrates'. All values lied well below the maximum levels of EN 13432 and ASTM D 6868-03.

The heavy metals Zinc (Zn), Copper (Cu), Nickel (Ni), Cadmium (Cd), Lead (Pb), Molybdenum (Mo), Chromium (Cr) and Arsenic (As) were determined by ICP-AES (inductively coupled plasma – atomic emission spectrometry) after digestion with aqua regia (NEN 6465). The same digestion method was used for Mercury (Hg), followed by CVAAS (cold vapor atomic absorption spectrometry). The Selenium (Se) content was analyzed by atomic absorption spectrometry after acid digestion, while the Fluorine (F) content was determined potentiometrically after bomb destruction (NEN 6483).

Table 1. Heavy metal content.

Metal	CEN norm ppm (on TS)*	ASTM norm** ppm (on TS)	EATware™ biodegradable tableware ppm (on TS)
Zn	< 150	< 1400	96
Cu	< 50	< 750	2
Ni	< 25	< 210	1.6
Cd	< 0.5	< 19.5	< 0.1
Pb	< 50	< 150	1
Hg	< 0.5	< 8.5	< 0.1
Cr	< 50	-	2
Mo	< 1	-	< 1
Se	< 0.75	< 50	< 0.1
As	< 5	< 20.5	< 1
F	< 100	-	< 27

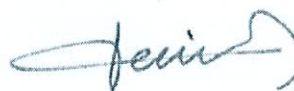
\* TS = Total Solids

\*\* maximum levels for USA (according to ASTM D 6868-03 heavy metal content must be less than 50% of those prescribed for sludges or composts in the country where the product is sold)

Gent, February 13, 2007



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