



## TEST REPORT

Applicant : HEESUNG MATERIAL LTD.  
Address : 151-8, Buk-ri, Namsa-myeon, Cheoin-gu,  
Yongin-si, Gyeonggi-do, 449-884 Korea

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Report No. RT11R-S1834-001-E

Date: May 16, 2011

Sample Description : The following submitted sample(s) said to be:-

Name/Type of Product : S/Ball(100ppm)  
Sample ID No. : RT11R-S1834-001  
Manufacturer/Vender : HEESUNG MATERIAL LTD.

Sample received : May 09, 2011  
Testing Date : May 09, 2011 ~ May 16, 2011  
Testing Environment : Temperature : ( 24 ± 2 ) °C, Humidity : ( 60 ± 5 ) % R.H.

Test Type : RoHS wet chemical analysis  
Test Method(s) : Please see the following page(s).  
Test Result(s) : Please see the following page(s).

\* Note 1 : The test results presented in this report relate only to the object tested.

\* Note 2 : This report shall not be reproduced except in full without the written approval of the testing laboratory.

Approved by,

Jade Jang / Lab. Technical Manager

Authorized by,

Bo Park / Lab. General Manager

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**Intertek Testing Services Korea Ltd.**

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# TEST REPORT

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Date: May 16, 2011

Report No. RT11R-S1834-001-E

Sample ID No. : RT11R-S1834-001

Sample Description : S/Ball(100ppm)

Test Item	Unit	Test Method	MDL	Result
Cadmium (Cd)	mg/kg	With reference to IEC 62321 Edition 1.0 : 2008, by acid digestion and determined by ICP-OES	0.5	N.D.
Lead (Pb)	mg/kg		5	15
Mercury (Hg)	mg/kg		2	N.D.
Hexavalent Chromium (Cr <sup>6+</sup> ) (For metal)	-	With reference to IEC 62321 Edition 1.0 : 2008, by Spot test	(Threshold of 1 mg/kg)	Negative
Hexavalent Chromium (Cr <sup>6+</sup> ) (For metal)	-	With reference to IEC 62321 Edition 1.0 : 2008, by boiling water extraction and determined by UV-VIS Spectrophotometer	(Threshold of 0.02 mg/kg with 50 cm <sup>2</sup> )	Negative

Tested by : Nikkie Lee, Leo Kim

Notes : mg/kg = ppm = parts per million

mg/kg with 50 cm<sup>2</sup> = milligram per kilogram with 50 square centimeter

< = Less than

N.D. = Not detected ( <MDL )

MDL = Method detection limit

Positive = A positive test result indicated the presence of Cr(VI) at the time of testing, equal to or greater than threshold of 1 mg/kg for spot test procedures or 0.02 mg/kg for boiling water extraction procedures with a sample surface area of 50 cm<sup>2</sup> used. However, it shall not be interpreted as the Cr(VI) concentration in the coating layer of the sample and should not be used as a method detection limit for this qualitative test.

Negative = A negative test result indicates above positive observation was not found at the time of testing. When the spot test showed a negative result, the boiling water extraction procedure shall be used to verify the result.

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Date: May 16, 2011

Report No. RT11R-S1834-001-E

Sample ID No. : RT11R-S1834-001

Sample Description : S/Ball(100ppm)

\* View of sample as received;-



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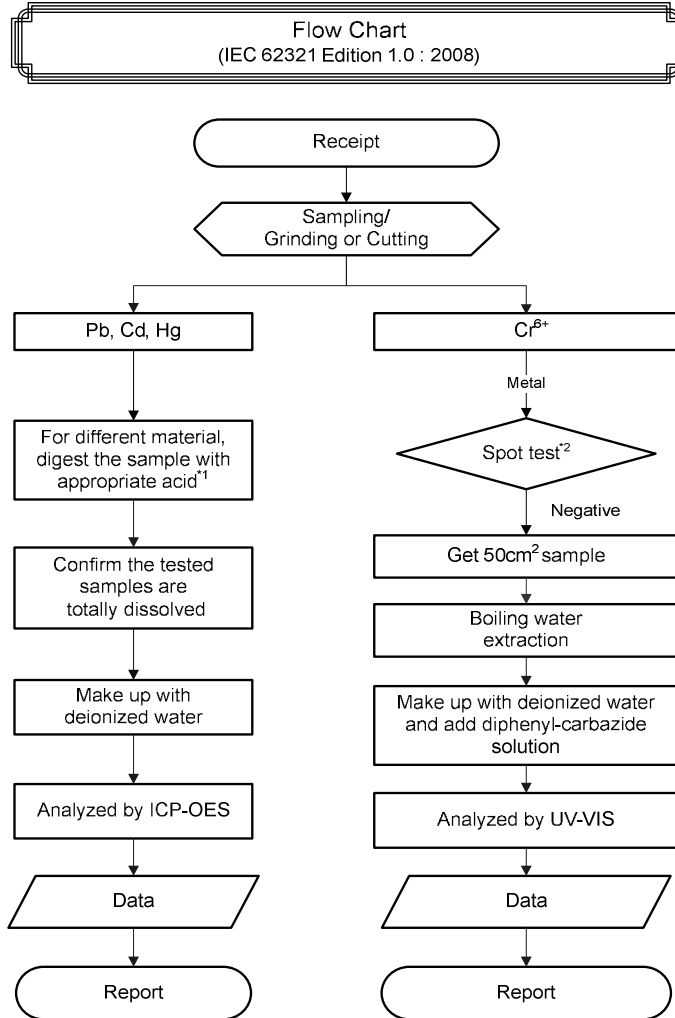
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Date: May 16, 2011

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Sample Description : S/Ball(100ppm)



Remarks :

\*1 : List of appropriate acid :

Material	Acid added for digestion
Polymers	HNO <sub>3</sub> , HCl, HF, H <sub>2</sub> O <sub>2</sub> , H <sub>3</sub> BO <sub>3</sub>
Metals	HNO <sub>3</sub> , HCl, HF
Electronics	HNO <sub>3</sub> , HCl, H <sub>2</sub> O <sub>2</sub> , HBF <sub>4</sub>

\*2 : If the result of spot test is positive, Chromium (VI) would be determined as detected.  
No further analysis is required.

\*\*\*\*\* End of Report \*\*\*\*\*

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