



TEST REPORT

7-6, Gomak-Ri, Wolgot-Myeon, Gimpo-Si, Gyeonggi-Do, KOREA

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Report No. : TAK-001188

Receipt Date : Jan.31.2012

Customer : Kwang Won Lee

Test Date : Feb.06.2012

JUNGWOO METAL IND.CO.LTD.

#371, Guamm-Ri, Nam-Myun, Yangju-Si, Kyunggi-Do, Korea

Sample : Copper Fitting

Testing Environment : Temperature(22°C ~ 26°C), Relative humidity (55% ~ 65%)

Test method : Refer to following pages

Testing Date : Feb.01.2012 ~ Feb.06.2012

Test result : Refer to following pages

Attachment : Flowchart and Sample pictures

USAGE : QUALITY CONTROL

NOTE : 1. The test results on this test report are only limited to the samples and sample names provided by the customer and KTR do not guarantee the quality of all products of the customer.
2. This test report shall not be used for public relation, advertisement, lawsuit and any other purposes outside the scope of its defined usage.

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Feb.06.2012

Korea Testing & Research Institute

President



전자문서본(Electronic Copy)



TEST REPORT

Report No : TAK-001188

Sample : Copper Fitting

TEST RESULT

Test Items	Unit	Sample	Results	MDL	Test Methods
Pb	mg/kg	-	Not Detected	10	IEC 62321 Ed.1.0b : 2008 (AAS)
Cd	mg/kg	-	Not Detected	1	IEC 62321 Ed.1.0b : 2008 (AAS)
Hg	mg/kg	-	Not Detected	1	IEC 62321 Ed.1.0b : 2008 (AAS)
Cr(VI)	mg/kg	-	Negative	-	IEC 62321 Ed.1.0b : 2008 (UV/Vis)
Total-PBBs	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Mono-BB	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Di-BB	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Tri-BB	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Tetra-BB	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Penta-BB	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Hexa-BB	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Hepta-BB	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Octa-BB	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Nona-BB	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Deca-BB	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Total-PBDEs	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Mono-BDE	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Di-BDE	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Tri-BDE	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Tetra-BDE	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Penta-BDE	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Hexa-BDE	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Hepta-BDE	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Octa-BDE	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Nona-BDE	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)
Deca-BDE	mg/kg	-	Not Detected	10	IEC 62321 Ed. 1.0 b : 2008 (GC/MS)

Notes : N.D. = Not Detected
MDL = Method Detection Limit

* Cr(VI): Negative (0.02 mg/kg under), Positive (0.02 mg/kg over)



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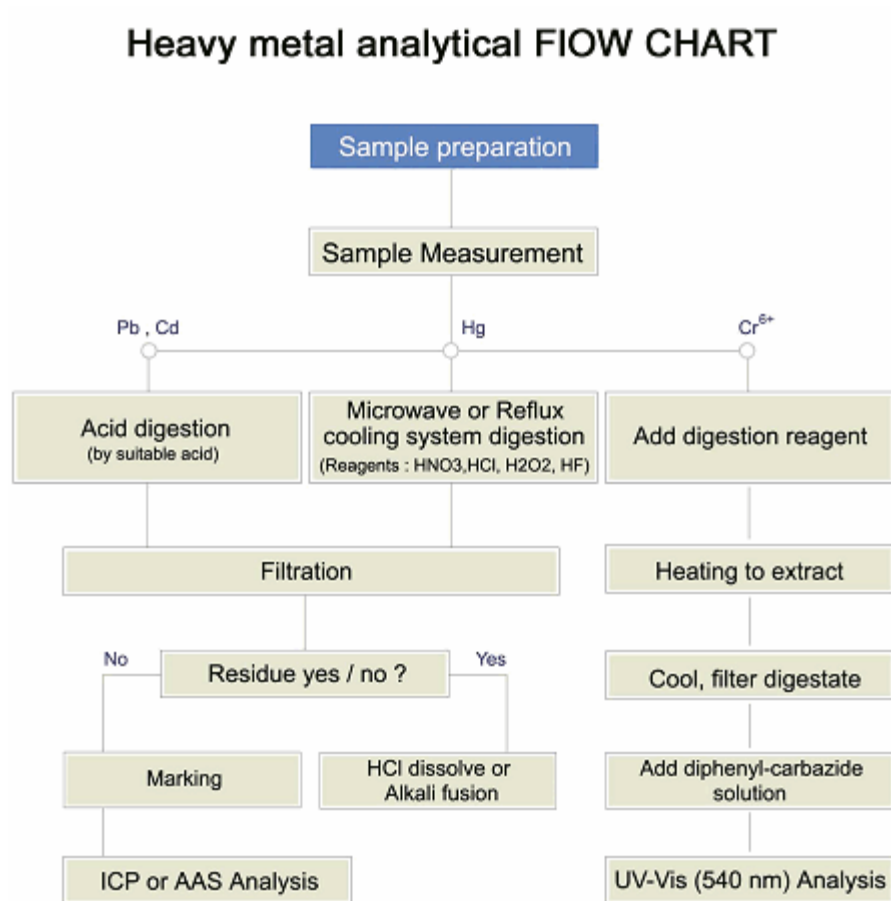
Report No : TAK-001188

Sample : Copper Fitting

Pb : Tested by Byung-Kyu Yu(Tel : 031-999-3123)
Cd : Tested by Byung-Kyu Yu(Tel : 031-999-3123)
Hg : Tested by Byung-Kyu Yu(Tel : 031-999-3123)
Cr6+ : Tested by Byung-Kyu Yu(Tel : 031-999-3123)

The samples were dissolved totally by pre-conditioning method according to below flow chart.

Flow Chart





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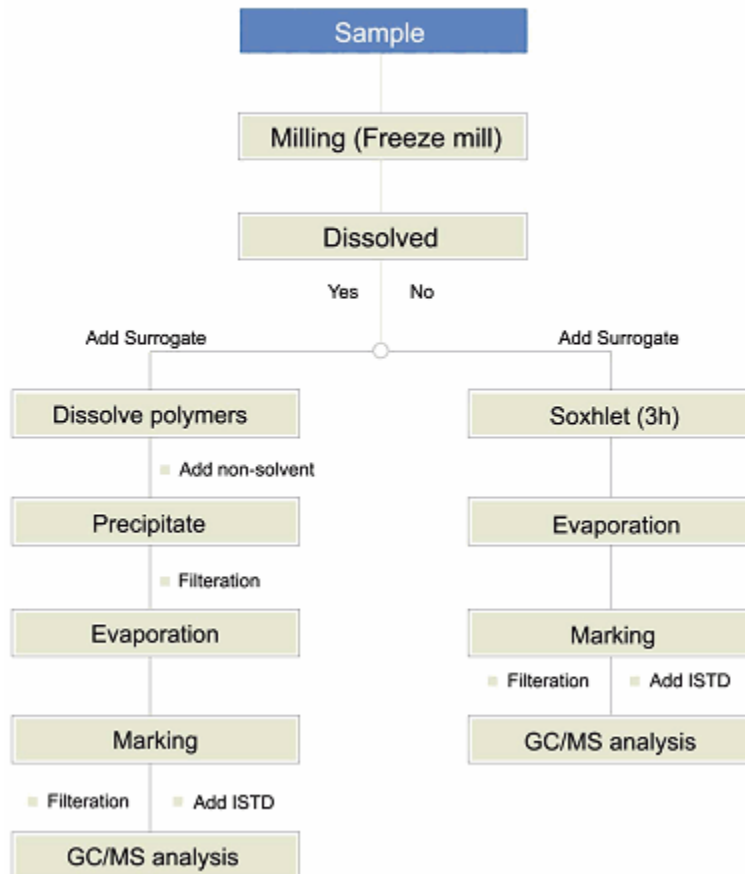
Sample : Copper Fitting

PBBs : Tested by Moon Chul Woo(Tel : 031-999-3105)
PBDEs : Tested by Moon Chul Woo(Tel : 031-999-3105)

The samples were dissolved totally by pre-conditioning method according to below flow chart.

Flow Chart

Flow Chart of PBB and PBDE Analysis





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Sample : Copper Fitting

Sample Photo

