

TEST REPORT

KOTITI No. | 8223-1401-100740

Applicant | DUKSAN Hi-Metal

Address | 66, Muryong 1-ro, Buk-gu, Ulsan, Korea



Date In | Jan 26, 2023

Date Out | Feb 03, 2023

Issue No	0731701350
Sample Description	Sn3.0Ag0.5Cu
Sample Quantity	One (1) Sample(s)
Buyer	N/S
Item Number	N/S
Material	Metal
Testing Period	Jan 26, 2023 ~ Feb 03, 2023
Test Result	For further details, please refer to the following page(s).

* N/S : Not Submitted, N.A. : Not Applicable, N.D. : Not Detected [< MDL(Method Detection Limit)]

* Negative : Not Detected, Positive : Detected

Affirmation	Prepared by	Technical Manager
	Name : Seung yoon Choi 	Name : Gun young Ryu 

KOTITI Testing & Research Institute



Contact Information for technical questions and general inquiries.

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- The test results contained in this report are limited to results on the sample(s) that is provided by client and are not necessarily indicative or representative of the qualities of the lot from which the sample(s) was taken or of all products.
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 - The test result in this report is not related to accreditation of KOLAS.
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- QPF-16-06(rev.01)KOTITI



Tested Sample List			
Sample No.	Sample Description	Item No.	Material
1	Sn3.0Ag0.5Cu	N/S	Metal

RoHS, Unit: mg/kg
(EU Directive 2011/65/EU, 2015/863/EU)

Test Conducted	Test Method	MDL	Test Results
1			
Lead (Pb)	IEC 62321-5:2013 (Acid digestion and determined by ICP-OES)	2	16.5
Cadmium(Cd)		2	N.D.
Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV (Acid digestion and determined by ICP-OES)	2	N.D.
* Polybrominated Biphenyls(PBBs)			
Bromobiphenyl	IEC 62321-6:2015 (Solvent extraction and determined by GC-MS)	5	N.D.
Dibromobiphenyl		5	N.D.
Tribromobiphenyl		5	N.D.
Tetrabromobiphenyl		5	N.D.
Pentabromobiphenyl		5	N.D.
Hexabromobiphenyl		5	N.D.
Heptabromobiphenyl		5	N.D.
Octabromobiphenyl		5	N.D.
Nonabromobiphenyl		5	N.D.
Decabromobiphenyl		5	N.D.
Sum of PBBs		-	N.D.
* Polybrominated Diphenyl Ethers(PBDEs)			
Bromodiphenyl ethers	IEC 62321-6:2015 (Solvent extraction and determined by GC-MS)	5	N.D.
Dibromodiphenyl ethers		5	N.D.
Tribromodiphenyl ethers		5	N.D.
Tetrabromodiphenyl ethers		5	N.D.
Pentabromodiphenyl ethers		5	N.D.
Hexabromodiphenyl ethers		5	N.D.
Heptabromodiphenyl ethers		5	N.D.
Octabromodiphenyl ethers		5	N.D.
Nonabromodiphenyl ethers		5	N.D.
Decabromodiphenyl ether		5	N.D.
Sum of PBDEs		-	N.D.

* Tested by : Yeon ji Park, Seung yoon Choi

RoHS, Unit: $\mu\text{g}/\text{cm}^2$
(EU Directive 2011/65/EU, 2015/863/EU)

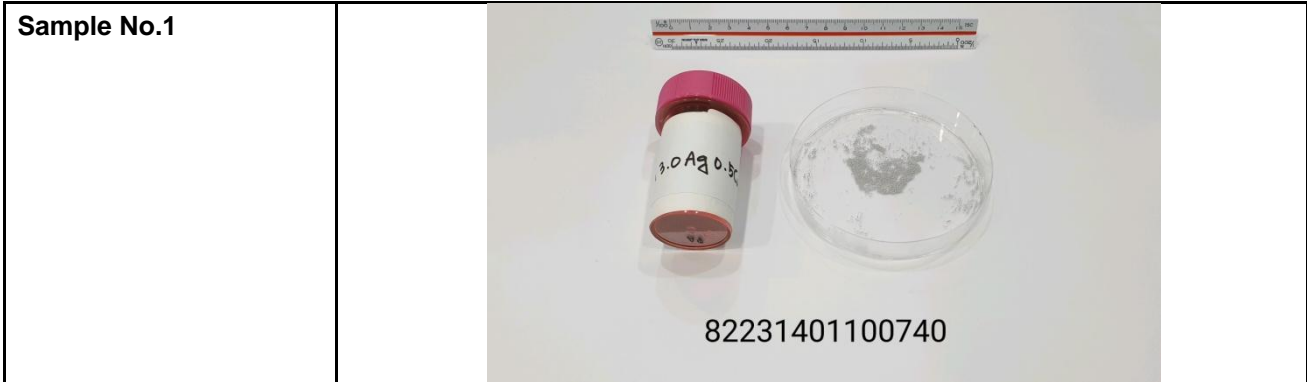
Test Conducted	Test Method	MDL	Test Results
1			
Hexavalent Chromium(Cr^{6+})	IEC 62321-7-1:2015 (Boiling water extraction and determined by UV-VIS)	-	Negative

※ Remark

1. $< 0.10 \mu\text{g}/\text{cm}^2$: Negative
2. $0.1 \mu\text{g}/\text{cm}^2 \sim 0.13 \mu\text{g}/\text{cm}^2$: Inconclusive
3. $> 0.13 \mu\text{g}/\text{cm}^2$: Positive

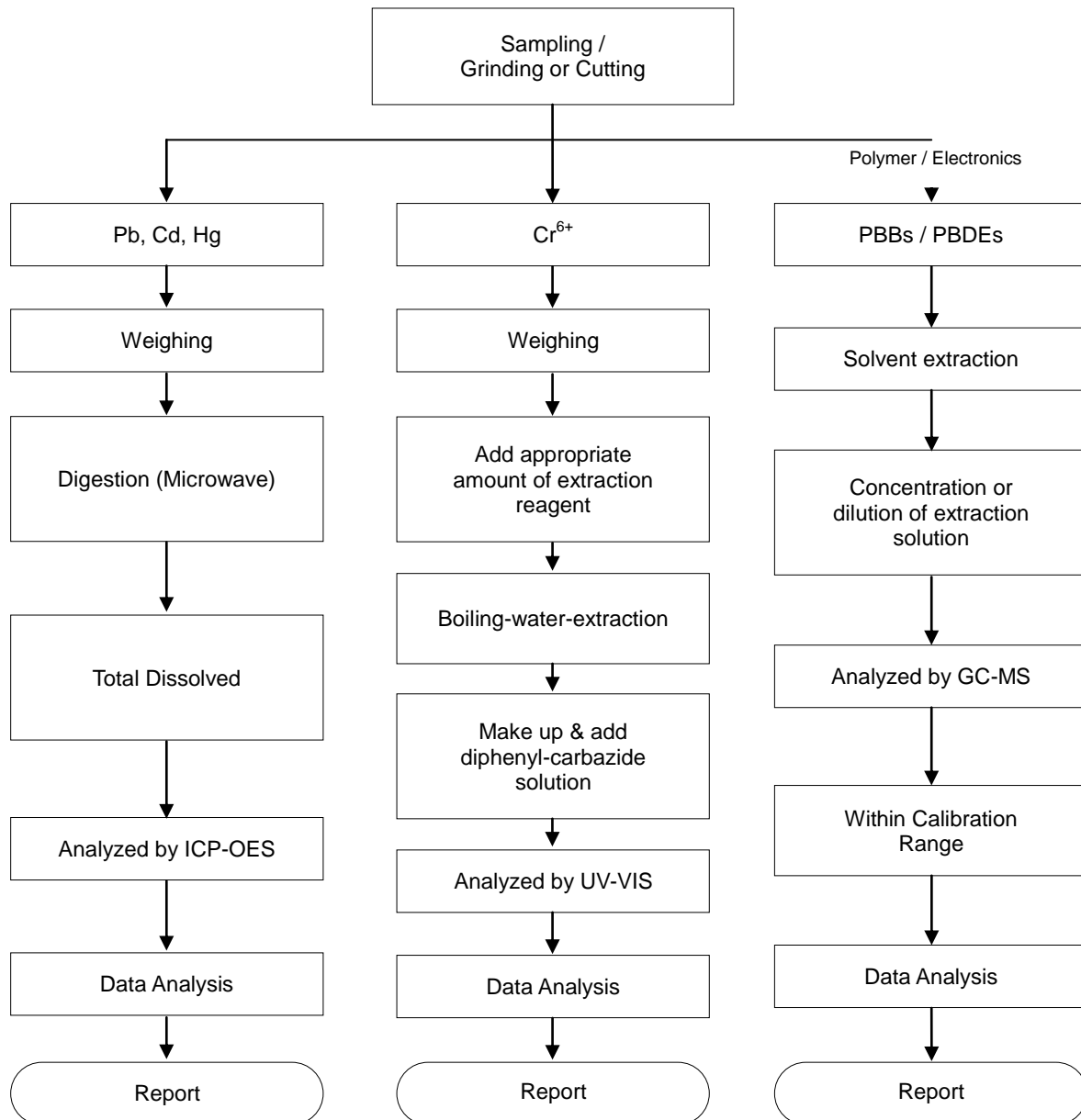
* Tested by : Ji eun Jeong

Photo of the submitted sample(s)



Flow Chart

RoHS



Material	Digestion Acid
Polymers	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₂ SO ₄ , etc.
Metals	HNO ₃ , HCl
Electronics	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₂ SO ₄ , etc.

* The sample is totally digested.