

TEST REPORT

KOTITI No. | 8225-1401-100266**Applicant** | DUKSAN Hi-Metal**Address** | 66, Muryong 1-ro, Buk-gu, Ulsan, Korea**Date In** | Jan 07, 2025**Date Out** | Jan 21, 2025

Issue No	8642305070
Sample Description	Sn3.0Ag0.5Cu
Sample Quantity	One (1) Sample(s)
Buyer	N/S
Item Number	N/S
Material	Metal
Testing Period	Jan 07, 2025 ~ Jan 21, 2025
Test Result	For further details, please refer to the following page(s).

*N/S : Not Submitted, N.A. : Not Applicable, N.D. : Not Detected [< RL(Report Limit)]

*Negative : Not Detected, Positive : Detected

Affirmation	Prepared by Name : A Reum Shin 	Technical Manager Name : Gun Young Ryu 
--------------------	--	--

KOTITI Testing & Research Institute

Contact Information for technical questions and general inquiries.

· Primary Contact : Yun jae Lee T (822)3451-7116 E yjlee@kr.kotiti-global.com

· Back-up : Gun young Ryu T (822)3451-7328 E gy_ryu@kr.kotiti-global.com

48, Gwacheon-daero 7na-gil, Gwacheon-si, Gyeonggi-do, Republic of Korea T (822)6191-6182 F (822)3451-7179 W www.kotiti-global.com

1. 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.
2. Further use of the results of this report is prohibited unless allowed under a separate agreement set forth in an official document that is established between the client identified on this letter and the KOTITI Testing & Research Institute.
3. The test result in this report is not related to Accreditation of KOLAS.
4. You can verify the authenticity by the QR code at the bottom right side of the issued report or access <http://cs.kotiti-global.com> and enter the test report number.



QPF-16-06(rev.02)

KOTITI

KOTITI Testing & Research Institute

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			
Cadmium (Cd)	IEC 62321-5:2013 (Acid digestion and determined by ICP-OES)	2	N.D.
Mercury (Hg)	IEC 62321-4:2013+AMD1:2017 CSV (Acid digestion and determined by ICP-OES)	1	N.D.
Lead (Pb)	IEC 62321-5:2013 (Acid digestion and determined by ICP-OES)	2	168.4

*** 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 ether	IEC 62321-6:2015 (Solvent extraction and determined by GC-MS)	5	N.D.
Dibromodiphenyl ether		5	N.D.
Tribromodiphenyl ether		5	N.D.
Tetrabromodiphenyl ether		5	N.D.
Pentabromodiphenyl ether		5	N.D.
Hexabromodiphenyl ether		5	N.D.
Heptabromodiphenyl ether		5	N.D.
Octabromodiphenyl ether		5	N.D.
Nonabromodiphenyl ether		5	N.D.
Decabromodiphenyl ether		5	N.D.
Sum of PBDEs		—	N.D.

*** Tested by : A Reum Shin, Jae Hyun Um, Rae Jin Kwag**

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) (Unit : $\mu\text{g}/\text{cm}^2$)	—	Negative

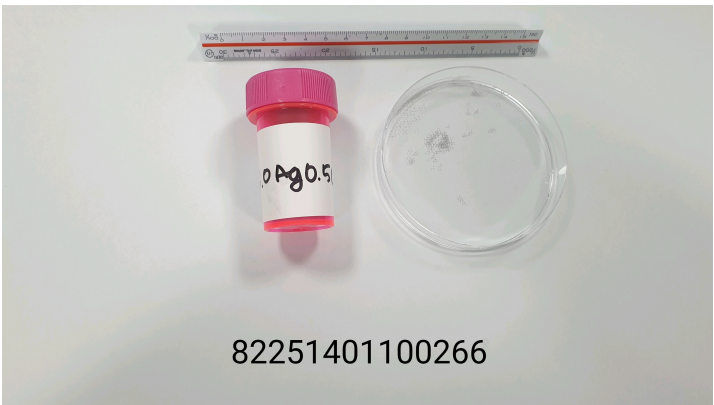
* Tested by : A Reum Shin, Jae Hyun Um, Rae Jin Kwag

※ 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

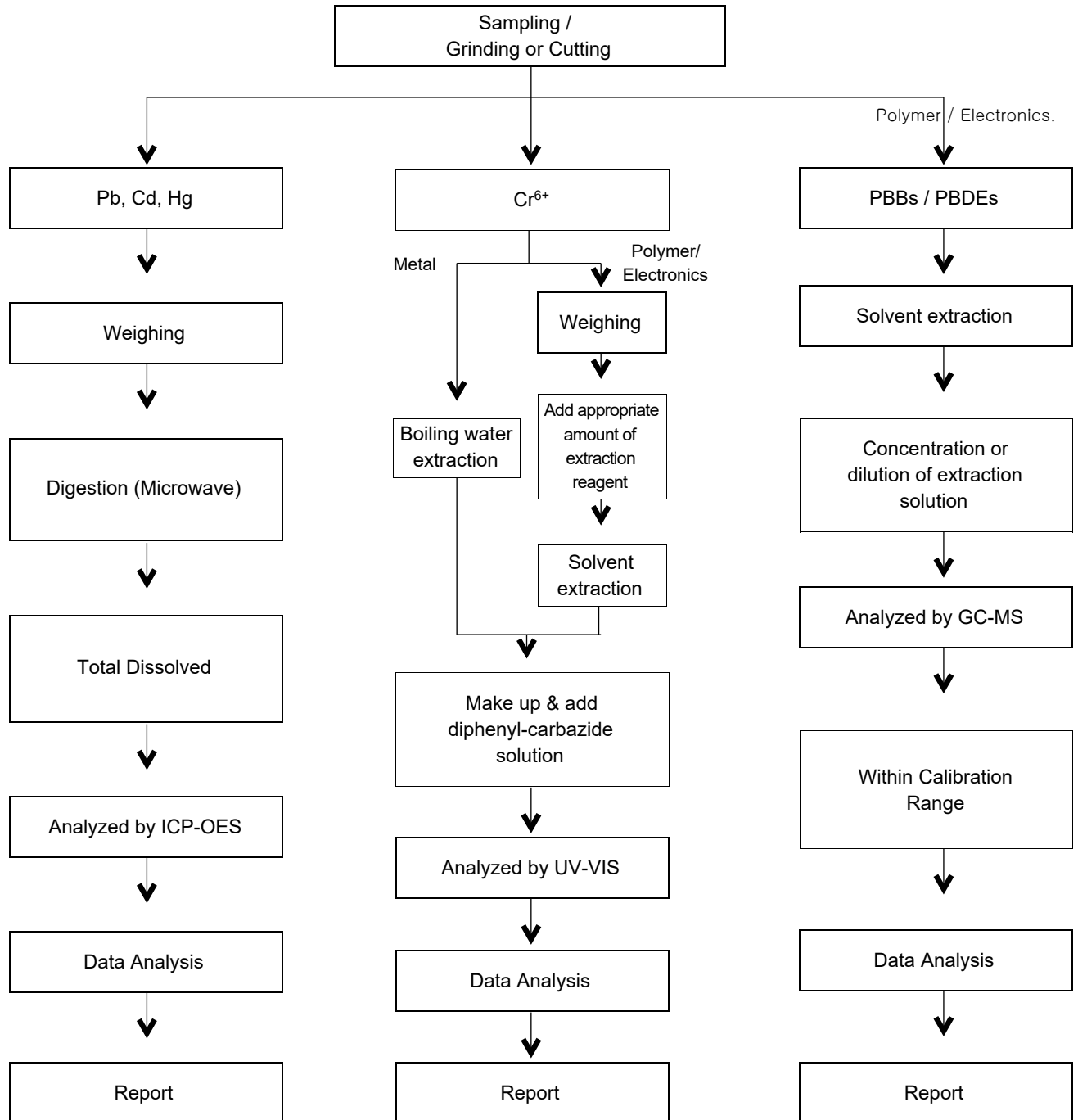
Photo of the submitted sample(s)

Sample No.1



Flow Chart

RoHS(Pb, Hg, Cd, Cr⁶⁺, PBBs/PBDEs)



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.