



Test Report

Number : TWNC00293319S1

Applicant: Cactus Technologies Ltd
Suite C, 15/F, Captial Trade Center,
62 Tsun Yip Street, Kwun Tong,
Kowloon, Hong Kong

Date : Jan 21, 2013
This is to supersede report
No. TWNC00293319 dated
Jan 15, 2013

Sample Description:

One (1) group of submitted samples said to be :
Sample Description : Industrial grade microSD card
Style / Item No. : KSxxxxR(I)T-803M
-the symbol of xxx can be 0~9 or blank to indicate the capacity of the drives.
-the symbol of y can be G, G: gigabyte
-(I) is to represent the extended temperature version (-45°C to + 90°C)
Country Of Origin : Taiwan
Date Sample Received : Jan 04, 2013
Date Test Started : Jan 04, 2013

Test Conducted :

As requested by the applicant, for details please refer to attached pages.

Conclusion:

<u>Tested Samples</u>	<u>Standard</u>	<u>Result</u>
Submitted Samples	Six Items of Restriction of Hazardous Substances (RoHS) Test - As per applicant's request with reference to 2011/65/EU	Pass

Authorized by:
On Behalf of Intertek Testing Services
Taiwan Limited



K. Y. Liang
Director





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Test Conducted

(I) Test Result Summary:

<u>Test Item</u>	<u>Unit</u>	<u>Test Method</u>	<u>Result</u>	<u>RL</u>
			<u>Submitted samples (mixed all parts)</u>	
Heavy Metal				
Cadmium (Cd) content	ppm	With reference to IEC 62321: 2008, by microwave digestion and determined by ICP-OES.	ND	2
Lead (Pb) content	ppm	With reference to IEC 62321: 2008, by microwave digestion and determined by ICP-OES.	ND	2
Mercury (Hg) content	ppm	With reference to IEC 62321: 2008, by microwave digestion and determined by ICP-OES.	ND	2
Chromium VI (Cr ⁶⁺) content	ppm	With reference to IEC 62321: 2008, by alkaline digestion and determined by UV-Vis Spectrophotometer.	ND	1



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Test Conducted

<u>Test Item</u>	<u>Unit</u>	<u>Test Method</u>	<u>Result</u>	<u>RL</u>
			<u>Submitted samples (mixed all parts)</u>	
Polybrominated Biphenyls (PBBs)				
Monobrominated Biphenyls (MonoBB)	ppm	With reference to IEC 62321: 2008, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary.	ND	5
Dibrominated Biphenyls (DiBB)	ppm		ND	5
Tribrominated Biphenyls (TriBB)	ppm		ND	5
Tetrabrominated Biphenyls (TetraBB)	ppm		ND	5
Pentabrominated Biphenyls (PentaBB)	ppm		ND	5
Hexabrominated Biphenyls (HexaBB)	ppm		ND	5
Heptabrominated Biphenyls (HeptaBB)	ppm		ND	5
Octabrominated Biphenyls (OctaBB)	ppm		ND	5
Nonabrominated Biphenyls (NonaBB)	ppm		ND	5
Decabrominated Biphenyl (DecaBB)	ppm		ND	5



Test Conducted

<u>Test Item</u>	<u>Unit</u>	<u>Test Method</u>	<u>Result</u>	<u>RL</u>
			<u>Submitted samples (mixed all parts)</u>	
Polybrominated Diphenyl Ethers (PBDEs)				
Monobrominated Diphenyl Ethers (MonoBDE)	ppm	With reference to IEC 62321: 2008, by solvent extraction and determined by GC-MS and further HPLC-DAD confirmation when necessary.	ND	5
Dibrominated Diphenyl Ethers (DiBDE)	ppm		ND	5
Tribrominated Diphenyl Ethers (TriBDE)	ppm		ND	5
Tetrabrominated Diphenyl Ethers (TetraBDE)	ppm		ND	5
Pentabrominated Diphenyl Ethers (PentaBDE)	ppm		ND	5
Hexabrominated Diphenyl Ethers (HexaBDE)	ppm		ND	5
Heptabrominated Diphenyl Ethers (HeptaBDE)	ppm		ND	5
Octabrominated Diphenyl Ethers (OctaBDE)	ppm		ND	5
Nonabrominated Diphenyl Ethers (NonaBDE)	ppm		ND	5
Decabrominated Diphenyl Ether (DecaBDE)	ppm		ND	5

Remarks: ppm = parts per million based on weight of tested sample = mg/kg
 ND = Not detected
 RL = Reporting Limit = Quantitation limit of analyte in sample

Responsibility of Chemist: Kevin Liu/ Irene Chiou/ Vico Lin

Date Sample Received : Jan 04, 2013
 Test Period : Jan 04, 2013 To Jan 10, 2013



Test Conducted

(II) RoHS Limits:

<u>Restricted Substances</u>	<u>Limits</u>
Cadmium (Cd) content	0.01% (100ppm)
Lead (Pb) content	0.1% (1000ppm)
Mercury (Hg) content	0.1% (1000ppm)
Chromium VI (Cr ⁶⁺) content	0.1% (1000ppm)
Polybrominated Biphenyls (PBBs)	0.1% (1000ppm)
Polybrominated Diphenyl Ehters (PBDEs)	0.1% (1000ppm)

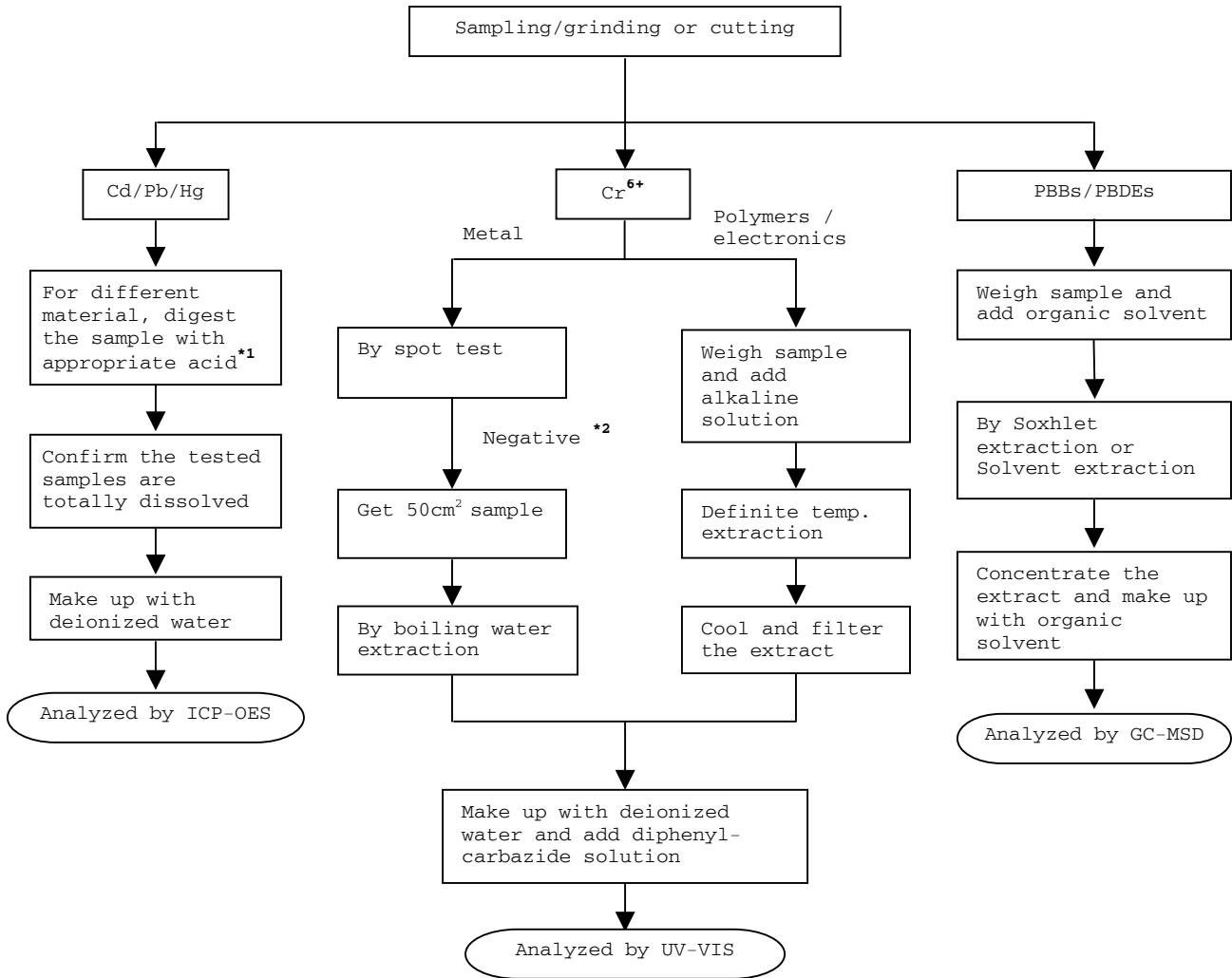
The above limits were quoted from Annex II of 2011/65/EU for homogeneous material.



Test Conducted

(III) Measurement Flowchart:

Test for Cd/Pb/Hg/Chromium (VI)/PBBS/PBDES Contents
Reference Standard: IEC 62321 edition 1.0:2008





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Test Conducted

Remarks:

*1: List of Appropriate Acid:

<u>Material</u>	<u>Acid Added for Digestion</u>
Polymers	HNO ₃ , HCl, HF, H ₂ O ₂ , H ₃ BO ₃
Metals	HNO ₃ , HCl, HF
Electronics	HNO ₃ , HCl, H ₂ O ₂ , HBF ₄

*2: If the result of spot test is positive, Chromium VI would be determined as detected.

End of Report

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