



Hong Kong Government Recognized Service Supplier
Approved Laboratory of The Woolmark Company

Members of :

American National Standards Institute
American Society for Testing and Materials
British Standards Institute

Hong Kong Association for Testing, Inspection and Certification Limited
Hong Kong Toys Council

XRF SCREENING AND CHEMICAL CONFIRMATION TEST

NUMBER: HKGH00819535

APPLICANT: CACTUS TECHNOLOGIES LIMITED
SUITE C 15/F CAPITAL TRADE CENTER
62 TSUN YIP STREET
KWUN TONG KLN
HK
ATTN: NG SAI YING

DATE: Feb 13, 2009

SAMPLE DESCRIPTION:

THREE (3) PIECES OF SUBMITTED SAMPLE SAID TO BE :
ITEM NAME : **CF TO PC CARD ADAPTER.**
REFERENCE NO. : KADPT-CF01.

TESTS CONDUCTED:

AS REQUESTED BY THE APPLICANT, FOR DETAILS REFER TO ATTACHED PAGE(S)

CONCLUSION:

<u>TESTED SAMPLES</u>	<u>STANDARD</u>	<u>RESULT</u>
SCREENING COMPONENTS OF SUBMITTED SAMPLES	SCREENING BY XRF SPECTROSCOPY AND CHEMICAL CONFIRMATION TEST FOR RoHS DIRECTIVE (2002/95/EC)	PASS

REMARK : CHEMICAL CONFIRMATION TESTS WERE CONDUCTED TO VERIFY THE INCONCLUSIVE RESULTS, CHROMIUM (VI) (Cr⁶⁺), POLYBROMINATED BIPHENYLS (PBBs) AND POLYBROMINATED DIPHENYL ETHERS (PBDEs) CONTENT.

FOR AND ON BEHALF OF :
INTERTEK TESTING SERVICES HK LTD.

KAREN S.C. NG
GENERAL MANAGER



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TESTS CONDUCTED

1 SCREENING TEST BY XRF SPECTROSCOPY

DETERMINATION OF LEVELS OF REGULATED SUBSTANCES IN ELECTROTECHNICAL PRODUCTS, ELEMENTS OF CADMIUM (Cd), LEAD (Pb), MERCURY (Hg), CHROMIUM (Cr) AND BROMINE (Br) CONTENT WERE MEASURED BY XRF SPECTROSCOPY AND CHEMICAL CONFIRMATION TEST FOR RoHS RESTRICTED SUBSTANCES.

(A) RESULTS :

SCREENED COMPONENTS	XRF RESULTS		CHEMICAL CONFIRMATION RESULT
(1)	Cd	ND	--
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
(2)	Cd	ND	--
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
(3)	Cd	ND	--
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
(4)	Cd	ND	Cr ⁶⁺ : <0.02 mg/kg WITH 50 cm ²
	Pb	ND	
	Hg	ND	
	Cr	INCONCLUSIVE	
	Br	NA	





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SCREENED COMPONENTS	XRF RESULTS		CHEMICAL CONFIRMATION RESULT
(5)	Cd	ND	PBBs : <5 ppm PBDEs : <5 ppm
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	INCONCLUSIVE	
(6)	Cd	ND	--
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
(7)	Cd	ND	--
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	
(8)	Cd	ND	Pb : <2 ppm
	Pb	INCONCLUSIVE	
	Hg	ND	
	Cr	ND	
	Br	NA	
(9)	Cd	ND	--
	Pb	DETECTED	
	Hg	ND	
	Cr	ND	
	Br	NA	
(10)	Cd	ND	--
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	ND	





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SCREENED COMPONENTS	XRF RESULTS		CHEMICAL CONFIRMATION RESULT
(11)	Cd	INCONCLUSIVE	Cr : <2 ppm
	Pb	ND	
	Hg	ND	
	Cr	ND	
	Br	NA	

REMARK : ND = NOT DETECTED
 NA = NOT APPLICABLE
 DETECTED = BELOW THE LOWER SCREENING LIMIT OF TABLE(B) AND PASS.
 ppm = PARTS PER MILLION = mg/kg
 mg/kg WITH 50cm² = MILLIGRAM PER KILOGRAM WITH 50 SQUARE CENTIMETRE
 < = LESS THAN

(B) XRF SCREENING LIMITS IN mg/kg FOR REGULATED ELEMENTS IN VARIOUS MATRICES.

ELEMENT	POLYMER MATERIALS	METALLIC MATERIALS	COMPOSITE MATERIALS
Cd	P ≤ 70 < X < 130 ≤ F	P ≤ 70 < X < 130 ≤ F	P ≤ 70 < X < 150 ≤ F
Pb	P ≤ 700 < X < 1300 ≤ F	P ≤ 700 < X < 1300 ≤ F	P ≤ 500 < X < 1500 ≤ F
Hg	P ≤ 700 < X < 1300 ≤ F	P ≤ 700 < X < 1300 ≤ F	P ≤ 500 < X < 1500 ≤ F
Cr	P ≤ 700 < X	P ≤ 700 < X	P ≤ 500 < X
Br	P ≤ 300 < X	NOT APPLICABLE	P ≤ 250 < X

P = PASS
 X = INCONCLUSIVE RESULT
 F = FAIL
 mg/kg = MILLIGRAM PER KILOGRAM = ppm





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(C) ESTIMATED DETECTION LIMITS IN mg/kg FOR REGULATED ELEMENTS IN VARIOUS MATRICES.

ELEMENT	POLYMER MATERIALS	METALLIC MATERIALS	COMPOSITE MATERIALS
Cd	50	70	70
Pb	100	200	200
Hg	100	200	200
Cr	100	200	200
Br	200	NOT APPLICABLE	200

DISCLAIMERS :

THIS XRF SCREENING REPORT IS FOR REFERENCE PURPOSES ONLY. THE APPLICANT SHALL MAKE ITS/HIS/HER OWN JUDGEMENT AS TO WHETHER THE INFORMATION PROVIDED IN THIS XRF SCREENING REPORT IS SUFFICIENT FOR ITS/HIS/HER PURPOSES.

THE RESULTS SHOWN IN THIS XRF SCREENING REPORT WILL DIFFER BASED ON VARIOUS FACTORS, INCLUDING BUT NOT LIMITED TO, THE SAMPLE SIZE, THICKNESS, AREA, SURFACE FLATNESS, EQUIPMENT PARAMETERS AND MATRIX EFFECT (e.g. PLASTIC, RUBBER, METAL, GLASS, CERAMIC ETC.). FURTHER WET CHEMICAL PRE-TREATMENT WITH RELEVANT CHEMICAL EQUIPMENT ANALYSIS ARE REQUIRED TO OBTAIN QUANTITATIVE DATA.





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(D) CHEMICAL CONFIRMATION TEST METHODS :

TESTING ITEM	TESTING METHOD	REPORTING LIMIT
CADMIUM (Cd) CONTENT	WITH REFERENCE TO BS EN1122 / US EPA 3050B/ US EPA 3052, BY ACID DIGESTION AND DETERMINED BY ICP-OES	2 ppm
LEAD (Pb) CONTENT	WITH REFERENCE TO US EPA 3050B / US EPA 3052, BY ACID DIGESTION AND DETERMINED BY ICP - OES	2 ppm
MERCURY (Hg) CONTENT	WITH REFERENCE TO US EPA 3052, BY ACID DIGESTION AND DETERMINED BY ICP - OES	2 ppm
CHROMIUM (VI) (Cr ⁶⁺) CONTENT (FOR NON-METAL)	WITH REFERENCE TO US EPA 3060A & 7196A, BY ALKALINE DIGESTION AND DETERMINED BY UV-VIS SPECTROPHOTOMETER	1 ppm
CHROMIUM (VI) (Cr ⁶⁺) CONTENT (FOR METAL)	WITH REFERENCE TO IEC 62321 - 111/95/CDV, BY SPOT TEST	NA
CHROMIUM (VI) (Cr ⁶⁺) CONTENT (FOR METAL)	WITH REFERENCE TO IEC 62321 - 111/95/CDV, BY BOILING WATER EXTRACTION AND DETERMINED BY UV-VIS SPECTROPHOTOMETER	0.02 mg/kg WITH 50cm ²

(E) RoHS REQUIREMENT

RESTRICTED SUBSTANCES	LIMITS
CADMIUM (Cd)	0.01% (100 ppm)
LEAD (Pb)	0.1% (1000 ppm)
MERCURY (Hg)	0.1% (1000 ppm)
CHROMIUM (VI) (Cr ⁶⁺)	0.1% (1000 ppm)
POLYBROMINATED BIPHENYLS (PBBs)	0.1% (1000 ppm)
POLYBROMINATED DIPHENYL ETHERS (PBDEs)	0.1% (1000 ppm)

THE ABOVE LIMITS WERE QUOTED FROM 2002/95/EC AND AMENDMENT 2005/618/EC.





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SCREENED COMPONENTS :

- (1) TRANSPARENT PLASTIC (CASE).
- (2) COATINGS ON PAPER LABEL (LABEL ON ADAPTER).
- (3) WHITE PAPER LABEL EXCLUDING COATINGS (LABEL ON ADAPTER).
- (4) SILVER COLOR METAL (ADAPTER CASE).
- (5) BLACK PLASTIC (FRAME (2-SIDE) OF ADAPTER).
- (6) WHITE PAPER TAPE (TAPE ON FRAME).
- (7) DARK GREY PLASTIC (TERMINAL HOLDER).
- (8) COPPER COLOR / SILVER COLOR METAL (TERMINAL).
- (9) SILVER COLOR / COPPER COLOR METAL (PIN).
- (10) GREEN FIBRE BOARD (PCB).
- (11) SOLDER.

DATE SAMPLE RECEIVED : JAN 21, 2009 AND FEB 06, 2009

TESTING PERIOD : JAN 21, 2009 TO JAN 23, 2009 & FEB 06, 2009 TO FEB 13, 2009



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END OF REPORT

