

RoHS & WEEE 指令及相關測試方法資料

1. **RoHS & WEEE directive** : 鉛、鎘、汞、六價鉻、PBB、PBDEs。
2. **RoHS 有書物質分析方法** : **EICTA** Position on Enforcement and Measurement of Substances in the RoHS Directive [2002/95/EC]

Examples for Test Methods of Environmental Related Substances under RoHS Directive

Substance class	Matrix	Method for screening	Method for Verification	Standard Reference
Cadmium compounds Lead compounds	Plastic, rubber, paints, inks	XRF (handheld)	1. XRF (desktop) 2. AAS 3. ICP-OES	Sample preparation Cd only EN1122:2001 Analytical method Cd: ISO 3856-4:1984 ISO 11885:1996 Sample preparation Pb and Cd EN 13346:2000 or EPA 3052:1996 EPA3050B Rev. 2: 1996 or EN 13346:2000 BS EN 1122:2001 (modified) Analytical method Pb and Cd ISO 11885: 1996 EN ISO 5961:1995
Lead and Lead alloys	Metal	XRF (FP-method (fundamental parameter), handheld)	1. XRF (desktop) 2. ICP-OES	
Mercury compounds	Plastic, rubber, paints, inks	XRF (handheld)	1. XRF (desktop) 2. CV-AAS with vapour hydride generation apparatus 3. CV-AAS with thermal decomposition and/or gold-amalgamation 4. ICP-OES with vapour hydride generation apparatus	Sample preparation EN 13346 EPA 3052:1996 Analytical method EN 12338
Mercury	Metal		CV-AAS with thermal decomposition for analysing Mercury content in fluorescent tubes	
Hexavalent Chromium compounds	Metal	1. XRF (handheld, total chromium) 2. Dip test (qualitative)	1. Derivatization with Diphenylcarbazide followed by UV/VIS spectroscopy at 540nm 2. Grinding and measuring the water extract with ICP-OES (method not verified)	ISO 3613:2000 Dip test: ZVO-0102-QUA-02 UV/Vis method: ZVO-0101-UV-05
Polybrominated biphenyls (PBB) Polybrominated diphenyl ethers (PBDE)	Plastics	Total bromine content/ for confirmation of total bromine free: 1. XRF (handheld) 2. HPLC 3. Ion chromatography	For identification of PBB and PBDE >30000ppm: FT-IR For identification and quantification: GC/MS (HRGC/MS)	Method currently under development International Round Robin Test is scheduled for Feb. 2004