

Trusted Technical Expertise.



Columbia Analytical has developed advanced analytical methodologies for RoHS/WEEE compliance testing. We offer a comprehensive analysis package to comply with RoHS/WEEE regulatory requirements. The procedures in place at Columbia Analytical assure valid results are produced by applying specialized sample preparation techniques prior to analysis by the appropriate instrumental method.

RoHS/WEEE compliance is required of products imported to countries belonging to the European Union (EU).

## RoHS Metals

## Analytical Techniques/Methods

### Cd, Cr (VI), Pb, Hg

1. Sample homogenizations as appropriate for material (milling, grinding, etc.).
1. Acid digestion via closed vessel dissolution. Acid mix depends on sample type.
2. (3) Bomb digestate analyzed by EPA 200.8 (ICP/MS) for Cd, Pb; EPA 6010 (ICP/AES) for Cr; and EPA 7470 (CVAAS) for Hg.
3. (4) Follow-up alkaline digestion and analysis as per EPA 3060/7196 for Cr(VI) if Total Cr is elevated.

## PBBs & PBDEs

## Analytical Techniques/Methods

### Option 1

**RoHS Method** - Solvent extraction followed by GC/MS analysis. The procedure is designed to be used as screening tool, but has the sensitivity and selectivity to identify the PBB and PBDE congeners at approximately 10 mg/kg (ppm).

### Option 2

**8270C/Modified Method** - Solvent extraction followed by GC/MS-SIM analysis. The procedure is designed to be a fully quantitative method based on EPA Method 8270C with the sensitivity and selectivity to identify and quantitate the PBB and PBDE congeners at approximately 0.5 mg/kg (ppm).

- see reverse for MRLs -

Analyte	RoHS Reporting Limits (mg/Kg, ppm)
<b>Metals</b>	
Cadmium - Cd	0.04
Lead - Pb	0.04
Hexavalent Chromium - Cr(VI)	20
Mercury - Hg	0.8
<b>Total PBDEs (RoHS Method)</b>	<b>10</b>
mono	0.12
di	0.48
tri	0.96
tetra	1.68
penta	1.84
hexa	1.68
hepta	0.96
octa	0.48
nona	1.2
deca	0.4
<b>Total PBBs (RoHS Method)</b>	<b>10</b>
mono	0.12
di	0.48
tri	0.96
tetra	1.68
penta	1.84
hexa	1.68
hepta	0.96
octa	0.48
nona	1.2
deca	0.4