



Banned Substances Report Generated 04/11/08.  
Reference Report No.: SZHH00231902

# RoHS Compliance

**Product Type:** Thermally Protected Zinc Oxide Varistor  
**Part Number Series:** TVZ series

Restricted Materials	Limits
CADMIUM (Cd)	0.01% (100 ppm)
LEAD (Pb)	0.1% (1000 ppm)
MERCURY (Hg)	0.1% (1000 ppm)
CHROMIUM (VI) (Cr <sup>6+</sup> )	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 for homogeneous materials.

## Test Result

Heavy Metals	Test Method	RESULT	REPORTING LIMIT
Lead Content (Pb)	With reference to IEC 62321 -111/95/CDV, by acid digestion and determined by ICP - OES	ND (<2)	2 mg / kg
Cadmium Content (Cd)	With reference to IEC 62321 -111/95/CDV, by acid digestion and determined by ICP - OES	ND (<2)	2 mg / kg
Mercury Content (Hg)	With reference to IEC 62321 -111/95/CDV, by acid digestion and determined by ICP - OES	ND (<2)	2 mg / kg
Chromium (VI) (Cr <sup>6+</sup> ) Content (for non metal)	With reference to IEC 62321 -111/95/CDV, by alkaline digestion and determined by UV-VIS spectrophotometer.	ND (<1)	1 mg / kg

Flame Retardants	Test Method	RESULT	REPORTING LIMIT
<b>Polybrominated Biphenyls (PBBs)</b>			
Monobromobiphenyl	With reference to IEC 62321 -111/95/CDV, by solvent extraction and determined by GC-MS and further HPLC confirmation when necessary.	ND (<5)	5 mg / kg
Dibromobiphenyl		ND (<5)	5 mg / kg
Tribromobiphenyl		ND (<5)	5 mg / kg
Tetrabromobiphenyl		ND (<5)	5 mg / kg
Pentabromobiphenyl		ND (<5)	5 mg / kg
Hexabromobiphenyl		ND (<5)	5 mg / kg
Heptabromobiphenyl		ND (<5)	5 mg / kg
Octabromobiphenyl		ND (<5)	5 mg / kg
Nonabromodiphenyl		ND (<5)	5 mg / kg
Decabromodiphenyl		ND (<5)	5 mg / kg

<b>Polybrominated Diphenylethers (PBDEs)</b>			
Monobromodiphenyl ether	With reference to IEC 62321 -111/95/CDV, by solvent extraction and determined by GC-MS and further HPLC confirmation when necessary.	ND (<5)	5 mg / kg
Dibromodiphenyl ether		ND (<5)	5 mg / kg
Tribromodiphenyl ether		ND (<5)	5 mg / kg
Tetrabromodiphenyl ether		ND (<5)	5 mg / kg
Pentabromodiphenyl ether		ND (<5)	5 mg / kg
Hexabromodiphenyl ether		ND (<5)	5 mg / kg
Heptabromodiphenyl ether		ND (<5)	5 mg / kg
Octabromodiphenyl ether		ND (<5)	5 mg / kg
Nonabromodiphenyl ether		ND (<5)	5 mg / kg
Decabromodiphenyl ether		ND (<5)	5 mg / kg

ND = Not Detected  
mg / kg = milligram per kilogram = ppm  
< = less than

Remark: The sample was analyzed on behalf of the applicant as mixing whole/part sample in one testing. The results in this report are an average of the whole sample. The results may deviate from the real data represented by homogenous material as requested by RoHS.