

TEST REPORT

TEST REPORT NUMBER : TURR160089981

DATE: 02 June, 2016

APPLICANT: Teknik Isısan Rezistans San. ve Tic.Ltd.Şti.

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SAMPLE DESCRIPTION : See attachment

DATE IN : 24 / May / 2016 (13:59)

RESUBMIT : 01 / June / 2016

DATE OUT : 02 / June / 2016

COUNTRY OF ORIGIN : TURKEY

RESULTS : SEE ATTACHMENT

CONCLUSION : SEE ATTACHMENT

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Volkan ALBAYRAK
CoordinatorZeynep Akın
Chemical Laboratory
Manager

SAMPLES	DESCRIPTION	CONCLUSION
	Sample	
	METAL PIPE COATED RESISTANCE	
1	RESISTANCE - 1	
1.1	RESISTANCE BODY	PASS
1.2	ROUND METAL PART	PASS
1.3	GOLD BIG NUT	PASS
1.4	SILVER BIG NUT	PASS
1.5	METAL WASHER	PASS
1.6	GOLD METAL PART	PASS
2	RESISTANCE - 2	
2.1	RESISTANCE BODY	PASS
2.2	SMALL ROUND METAL PART	PASS
2.3	BIG ROUND METAL PART	PASS
2.4	NUT	PASS
2.5	GOLD METAL PART	PASS
3	RESISTANCE - 3	
3.1	RESISTANCE BODY	PASS
3.2	RECTANGULAR METAL PART	PASS
3.3	ROUND METAL PART	PASS
3.4	SCREW ON NUT	PASS
3.5	PLASTIC PART	PASS

(A) TEST RESULT SUMMARY ACCORDING TO IEC 62321 : 2008
Electrotechnical Products-Determination of Levels of Six Regulated Substances

TESTING ITEM	RESULT		
	Sample		
	1.1	1.2	1.3
Cadmium (Cd) Content	ND	ND	ND
Chromium VI (Cr+6) Content (ppm) (for non - metal)	NA	NA	NA
Chromium VI (Cr+6) Content (µg/cm ²) (for metal)	ND	ND	ND
Lead (Pb) Content	ND	ND	17000 ppm*
Mercury (Hg) Content	ND	ND	ND
Flame Retardants			
Polybrominated Biphenyls (PBB)	NA	NA	NA
Monobromobiphenyl (MonoBB)	NA	NA	NA
Dibromobiphenyl (DiBB)	NA	NA	NA
Tribromobiphenyl (TriBB)	NA	NA	NA
Tetrabromobiphenyl (TetraBB)	NA	NA	NA
Pentabromobiphenyl (PentaBB)	NA	NA	NA
Hexabromobiphenyl (HexaBB)	NA	NA	NA
Heptabromobiphenyl (HeptaBB)	NA	NA	NA
Octabromobiphenyl (OctaBB)	NA	NA	NA
Nonabromobiphenyl (NonaBB)	NA	NA	NA
Decabromobiphenyl (DecaBB)	NA	NA	NA
Polybrominated Diphenyl Ethers (PBDE)	NA	NA	NA
Monobromodiphenyl Ether (MonoBDE)	NA	NA	NA
Dibromodiphenyl Ether (DiBDE)	NA	NA	NA
Tribromodiphenyl Ether (TriBDE)	NA	NA	NA
Tetrabromodiphenyl Ether (TetraBDE)	NA	NA	NA
Pentabromodiphenyl Ether (PentaBDE)	NA	NA	NA
Hexabromodiphenyl Ether (HexaBDE)	NA	NA	NA
Heptabromodiphenyl Ether (HeptaBDE)	NA	NA	NA
Octabromodiphenyl Ether (OctaBDE)	NA	NA	NA
Nonabromodiphenyl Ether (NonaBDE)	NA	NA	NA
Decabromodiphenyl Ether (DecaBDE)	NA	NA	NA

Remarks : ppm=Parts per million based on dry weight of sample
µg/cm²=Microgram per square centimetre
mg/kg with 50 cm²=Milligram per kilogram with 50 square centimetre
ND =Not detected NA =Not applicable NR =Not requested
* Lead RoHS limit for brass item is 40000 ppm.

(A) TEST RESULT SUMMARY ACCORDING TO IEC 62321 : 2008
Electrotechnical Products-Determination of Levels of Six Regulated Substances

TESTING ITEM	RESULT		
	Sample		
	1.4	1.5	1.6
Cadmium (Cd) Content	ND	ND	ND
Chromium VI (Cr+6) Content (ppm) (for non - metal)	NA	NA	NA
Chromium VI (Cr+6) Content (µg/cm ²) (for metal)	ND	ND	ND
Lead (Pb) Content	ND	ND	ND
Mercury (Hg) Content	ND	ND	ND
Flame Retardants			
Polybrominated Biphenyls (PBB)	NA	NA	NA
Monobromobiphenyl (MonoBB)	NA	NA	NA
Dibromobiphenyl (DiBB)	NA	NA	NA
Tribromobiphenyl (TriBB)	NA	NA	NA
Tetrabromobiphenyl (TetraBB)	NA	NA	NA
Pentabromobiphenyl (PentaBB)	NA	NA	NA
Hexabromobiphenyl (HexaBB)	NA	NA	NA
Heptabromobiphenyl (HeptaBB)	NA	NA	NA
Octabromobiphenyl (OctaBB)	NA	NA	NA
Nonabromobiphenyl (NonaBB)	NA	NA	NA
Decabromobiphenyl (DecaBB)	NA	NA	NA
Polybrominated Diphenyl Ethers (PBDE)	NA	NA	NA
Monobromodiphenyl Ether (MonoBDE)	NA	NA	NA
Dibromodiphenyl Ether (DiBDE)	NA	NA	NA
Tribromodiphenyl Ether (TriBDE)	NA	NA	NA
Tetrabromodiphenyl Ether (TetraBDE)	NA	NA	NA
Pentabromodiphenyl Ether (PentaBDE)	NA	NA	NA
Hexabromodiphenyl Ether (HexaBDE)	NA	NA	NA
Heptabromodiphenyl Ether (HeptaBDE)	NA	NA	NA
Octabromodiphenyl Ether (OctaBDE)	NA	NA	NA
Nonabromodiphenyl Ether (NonaBDE)	NA	NA	NA
Decabromodiphenyl Ether (DecaBDE)	NA	NA	NA

Remarks : ppm=Parts per million based on dry weight of sample
µg/cm²=Microgram per square centimetre
mg/kg with 50 cm²=Milligram per kilogram with 50 square centimetre
ND =Not detected NA =Not applicable NR =Not requested

(A) TEST RESULT SUMMARY ACCORDING TO IEC 62321 : 2008
Electrotechnical Products-Determination of Levels of Six Regulated Substances

TESTING ITEM	RESULT	
	Sample	
	2.1	2.2
Cadmium (Cd) Content	ND	ND
Chromium VI (Cr+6) Content (ppm) (for non - metal)	NA	NA
Chromium VI (Cr+6) Content (µg/cm ²) (for metal)	ND	ND
Lead (Pb) Content	ND	ND
Mercury (Hg) Content	ND	ND
Flame Retardants		
Polybrominated Biphenyls (PBB)	NA	NA
Monobromobiphenyl (MonoBB)	NA	NA
Dibromobiphenyl (DiBB)	NA	NA
Tribromobiphenyl (TriBB)	NA	NA
Tetrabromobiphenyl (TetraBB)	NA	NA
Pentabromobiphenyl (PentaBB)	NA	NA
Hexabromobiphenyl (HexaBB)	NA	NA
Heptabromobiphenyl (HeptaBB)	NA	NA
Octabromobiphenyl (OctaBB)	NA	NA
Nonabromobiphenyl (NonaBB)	NA	NA
Decabromobiphenyl (DecaBB)	NA	NA
Polybrominated Diphenyl Ethers (PBDE)	NA	NA
Monobromodiphenyl Ether (MonoBDE)	NA	NA
Dibromodiphenyl Ether (DiBDE)	NA	NA
Tribromodiphenyl Ether (TriBDE)	NA	NA
Tetrabromodiphenyl Ether (TetraBDE)	NA	NA
Pentabromodiphenyl Ether (PentaBDE)	NA	NA
Hexabromodiphenyl Ether (HexaBDE)	NA	NA
Heptabromodiphenyl Ether (HeptaBDE)	NA	NA
Octabromodiphenyl Ether (OctaBDE)	NA	NA
Nonabromodiphenyl Ether (NonaBDE)	NA	NA
Decabromodiphenyl Ether (DecaBDE)	NA	NA

Remarks : ppm=Parts per million based on dry weight of sample
µg/cm²=Microgram per square centimetre
mg/kg with 50 cm²=Milligram per kilogram with 50 square centimetre
ND =Not detected NA =Not applicable NR =Not requested

(A) TEST RESULT SUMMARY ACCORDING TO IEC 62321 : 2008
Electrotechnical Products-Determination of Levels of Six Regulated Substances

TESTING ITEM	RESULT		
	Sample		
	2.3	2.4	2.5
Cadmium (Cd) Content	ND	ND	ND
Chromium VI (Cr+6) Content (ppm) (for non - metal)	NA	NA	NA
Chromium VI (Cr+6) Content (µg/cm ²) (for metal)	ND	ND	ND
Lead (Pb) Content	ND	ND	ND
Mercury (Hg) Content	ND	ND	ND
Flame Retardants			
Polybrominated Biphenyls (PBB)	NA	NA	NA
Monobromobiphenyl (MonoBB)	NA	NA	NA
Dibromobiphenyl (DiBB)	NA	NA	NA
Tribromobiphenyl (TriBB)	NA	NA	NA
Tetrabromobiphenyl (TetraBB)	NA	NA	NA
Pentabromobiphenyl (PentaBB)	NA	NA	NA
Hexabromobiphenyl (HexaBB)	NA	NA	NA
Heptabromobiphenyl (HeptaBB)	NA	NA	NA
Octabromobiphenyl (OctaBB)	NA	NA	NA
Nonabromobiphenyl (NonaBB)	NA	NA	NA
Decabromobiphenyl (DecaBB)	NA	NA	NA
Polybrominated Diphenyl Ethers (PBDE)	NA	NA	NA
Monobromodiphenyl Ether (MonoBDE)	NA	NA	NA
Dibromodiphenyl Ether (DiBDE)	NA	NA	NA
Tribromodiphenyl Ether (TriBDE)	NA	NA	NA
Tetrabromodiphenyl Ether (TetraBDE)	NA	NA	NA
Pentabromodiphenyl Ether (PentaBDE)	NA	NA	NA
Hexabromodiphenyl Ether (HexaBDE)	NA	NA	NA
Heptabromodiphenyl Ether (HeptaBDE)	NA	NA	NA
Octabromodiphenyl Ether (OctaBDE)	NA	NA	NA
Nonabromodiphenyl Ether (NonaBDE)	NA	NA	NA
Decabromodiphenyl Ether (DecaBDE)	NA	NA	NA

Remarks : ppm=Parts per million based on dry weight of sample
µg/cm²=Microgram per square centimetre
mg/kg with 50 cm²=Milligram per kilogram with 50 square centimetre
ND =Not detected NA =Not applicable NR =Not requested

(A) TEST RESULT SUMMARY ACCORDING TO IEC 62321 : 2008
Electrotechnical Products-Determination of Levels of Six Regulated Substances

TESTING ITEM	RESULT		
	Sample		
	3.1	3.2	3.3
Cadmium (Cd) Content	ND	ND	ND
Chromium VI (Cr+6) Content (ppm) (for non - metal)	NA	NA	NA
Chromium VI (Cr+6) Content (µg/cm ²) (for metal)	ND	ND	ND
Lead (Pb) Content	ND	ND	ND
Mercury (Hg) Content	ND	ND	ND
Flame Retardants			
Polybrominated Biphenyls (PBB)	NA	NA	NA
Monobromobiphenyl (MonoBB)	NA	NA	NA
Dibromobiphenyl (DiBB)	NA	NA	NA
Tribromobiphenyl (TriBB)	NA	NA	NA
Tetrabromobiphenyl (TetraBB)	NA	NA	NA
Pentabromobiphenyl (PentaBB)	NA	NA	NA
Hexabromobiphenyl (HexaBB)	NA	NA	NA
Heptabromobiphenyl (HeptaBB)	NA	NA	NA
Octabromobiphenyl (OctaBB)	NA	NA	NA
Nonabromobiphenyl (NonaBB)	NA	NA	NA
Decabromobiphenyl (DecaBB)	NA	NA	NA
Polybrominated Diphenyl Ethers (PBDE)	NA	NA	NA
Monobromodiphenyl Ether (MonoBDE)	NA	NA	NA
Dibromodiphenyl Ether (DiBDE)	NA	NA	NA
Tribromodiphenyl Ether (TriBDE)	NA	NA	NA
Tetrabromodiphenyl Ether (TetraBDE)	NA	NA	NA
Pentabromodiphenyl Ether (PentaBDE)	NA	NA	NA
Hexabromodiphenyl Ether (HexaBDE)	NA	NA	NA
Heptabromodiphenyl Ether (HeptaBDE)	NA	NA	NA
Octabromodiphenyl Ether (OctaBDE)	NA	NA	NA
Nonabromodiphenyl Ether (NonaBDE)	NA	NA	NA
Decabromodiphenyl Ether (DecaBDE)	NA	NA	NA

Remarks : ppm=Parts per million based on dry weight of sample
µg/cm²=Microgram per square centimetre
mg/kg with 50 cm²=Milligram per kilogram with 50 square centimetre
ND =Not detected NA =Not applicable NR =Not requested

(A) TEST RESULT SUMMARY ACCORDING TO IEC 62321 : 2008
Electrotechnical Products-Determination of Levels of Six Regulated Substances

TESTING ITEM	RESULT	
	Sample	
	3.4	3.5
Cadmium (Cd) Content	ND	ND
Chromium VI (Cr+6) Content (ppm) (for non - metal)	NA	ND
Chromium VI (Cr+6) Content (µg/cm ²) (for metal)	ND	NA
Lead (Pb) Content	ND	ND
Mercury (Hg) Content	ND	ND
Flame Retardants		
Polybrominated Biphenyls (PBB)	NA	ND
Monobromobiphenyl (MonoBB)	NA	ND
Dibromobiphenyl (DiBB)	NA	ND
Tribromobiphenyl (TriBB)	NA	ND
Tetrabromobiphenyl (TetraBB)	NA	ND
Pentabromobiphenyl (PentaBB)	NA	ND
Hexabromobiphenyl (HexaBB)	NA	ND
Heptabromobiphenyl (HeptaBB)	NA	ND
Octabromobiphenyl (OctaBB)	NA	ND
Nonabromobiphenyl (NonaBB)	NA	ND
Decabromobiphenyl (DecaBB)	NA	ND
Polybrominated Diphenyl Ethers (PBDE)	NA	ND
Monobromodiphenyl Ether (MonoBDE)	NA	ND
Dibromodiphenyl Ether (DiBDE)	NA	ND
Tribromodiphenyl Ether (TriBDE)	NA	ND
Tetrabromodiphenyl Ether (TetraBDE)	NA	ND
Pentabromodiphenyl Ether (PentaBDE)	NA	ND
Hexabromodiphenyl Ether (HexaBDE)	NA	ND
Heptabromodiphenyl Ether (HeptaBDE)	NA	ND
Octabromodiphenyl Ether (OctaBDE)	NA	ND
Nonabromodiphenyl Ether (NonaBDE)	NA	ND
Decabromodiphenyl Ether (DecaBDE)	NA	ND

Remarks : ppm=Parts per million based on dry weight of sample
µg/cm²=Microgram per square centimetre
mg/kg with 50 cm²=Milligram per kilogram with 50 square centimetre
ND =Not detected NA =Not applicable NR =Not requested

(B) REQUIREMENT:

SUBSTANCE	LIMITS
Cadmium (Cd)Content	0.01 % (100 ppm)
Chromium VI (Cr+6)Content(ppm)(for non metal)	0.1 % (1000 ppm)
Chromium VI (Cr+6)Content($\mu\text{g}/\text{cm}^2$)for metal)	Colorimetric result $< 0.10 \mu\text{g}/\text{cm}^2$ Qualitative Result $\geq 0.10 \mu\text{g}/\text{cm}^2$ and $\leq 0.13 \mu\text{g}/\text{cm}^2$ Negative $> 0.13 \mu\text{g}/\text{cm}^2$ Inconclusive Positive
Lead (Pb) Content	0.1 % (1000 ppm)
Mercury (Hg) Content	0.1 % (1000 ppm)
Flame Retardants	0.1 % (1000 ppm)

(C) TEST METHOD :

Testing Item	Testing Method	Reporting Limit
Cadmium (Cd)Content	With reference to IEC 62321-5:2013,by microwave or acid digestion and determined by ICP-OES	2 ppm
Lead (Pb)Content	With reference to IEC 62321-5:2013,by microwave or acid digestion and determined by ICP-OES	2 ppm
Mercury (Hg)Content	With reference to IEC 62321-4:2013,by microwave or acid digestion and determined by ICP-OES	2 ppm
Chromium VI (Cr6+)(For non-metal)	With reference to IEC 62321:2008,by alkaline digestion and determined by UV-VIS spectrophotometer	1 ppm
Chromium VI (Cr6+)(For metal)	With reference to IEC 62321-7-1:2015 ,by boiling water extraction and determined by UV-VIS spectrophotometer	0.1 mg/kg with 50 cm ² (IN TESTING SOLUTION)
PBBs/PBDEs	With reference to IEC 62321-6:2015,by solvent extraction and determined by GC/MS and HPLC	5 ppm

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Part 1.1



Part 1.2



Part 1.3



Part 1.4



Part 1.5



Part 1.6



Part 2



Part 2.1



Part 2.2



Part 2.3



Part 2.4



Part 2.5



Part 3



Part 3.1



Part 3.2



Part 3.3



Part 3.4



Part 3.5



END OF TEST REPORT