



EUROFINS
ETS Product Service GmbH

TEST PROTOCOL

RoHS 2002/95/EC

Project no.:

T8M20801-0008-RoHS



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1 General information

1.1 Protocol provider

ETS PRODUCT SERVICE CO., LTD.
(Subcontractor of Eurofins ETS Product Service GmbH)
344/2 Soi Soonvijai 4, Rama 9 Road,
Bangkapi, Huaykwang, Bangkok 10320 Thailand
Thailand
Telephone: + 66 2716 8530
Telefax: + 66 2716 8537

1.2 Application details

1.2.1 Details of applicant

Name : Thai Energy Conservation Co., Ltd.
Street : 320 Moo1 Sanamchai, Muang
Town : Suphanburi 72000
Country : Thailand
Telephone : +66 35 408581-3
Fax : +66 35 408584
Teletex : ./.

Contact : Mr. Rawiwat Panasantipap
Telephone : +66 35 408581-3

1.2.2 Details of wanted approval holder

Name : Thai Energy Conservation Co., Ltd.
Street : 320 Moo1 Sanamchai, Muang
Town : Suphanburi 72000
Country : Thailand
Telephone : +66 35 408581-3
Fax : +66 35 408584
Teletex : ./.

Contact : Mr. Rawiwat Panasantipap
Telephone : +66 35 408581-3

1.2.3 Manufacturer

Name : Thai Energy Conservation Co., Ltd.
Street : 320 Moo1 Sanamchai, Muang
Town : Suphanburi 72000
Country : Thailand

1.2.4 Dates of application

Date of receipt of application : 25.01.2008
Date of receipt of report items : 25.01.2008
Date of reporting : 28.03.2008

1.3 Description of the test item

Type of product : Electronic Ballast Brand Name : Econo-Watd
Type identification : Perform 2x13W, Perform 2x18W, Perform 2x26W,
Perform 2x32W, Perform 2x36W, Perform 4x18W
Serial number : -

1.4 Directive

2002/95/EC

Restriction of the use of certain hazardous substances in electrical and electronic equipment
27 January 2003

in connection with:

2002/96/EC

Waste electrical and electronic equipment
27 January 2003

2005/618/EC

Establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment
18 August 2005

2 Technical test

2.1 Summary of test results

No deviations from the directive(s) were ascertained in the course of the tests performed.



or

The deviations as specified in 2.2 were ascertained in the course of the tests performed.



2.2 Non-conformance items

No	Non-conformance items
1.	No non-conformances noticed.
2.	
3.	
4.	
- over -	

2.3 Protocol approval

28.03.2008

D. Dahms



Date	ETS	Name	Signature
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Registration number: T8M20801-0008-RoHS

EUROFINS ETS PRODUCT SERVICE GMBH
STORKOWER STR. 38C, D-15526 REICHENWALDE B. BERLIN

3 Test results

3.1 General Information

Test Report No: T8M20801-0008

3.1.1 Description of the sample

One (1) style of submitted sample said to be: Electronic Ballast

ITEM NO.: Perform 2x13W

3.1.2 Date of sample received

25.01.2008

3.1.3 Date tested

January 25, 2008 to March 28, 2008

3.2 Results

3.2.1 Investigation requested

1. Heavy metals content in accordance with ROHS directive 2002/95/EC & 2005/618/EC.
2. PBB and PBDE content in accordance with ROHS directive 2002/95/EC & 2005/618/EC.

3.2.2 Conclusion

<u>TESTED SAMPLE</u>	<u>STANDARD</u>	<u>RESULT</u>
SUBMITTED SAMPLES	RoHS directive 2002/95/EC & 2005/618/EC for heavy metals content.	PASS
	RoHS directive 2002/95/EC & 2005/618/EC for PBB and PBDE content.	PASS

3.2.3 Data

Item	Unit	Acceptable Limit	1	2	3	4	5
Lead (Pb)	ppm	1000	N.D.	N.D.	N.D.	N.D.	14
Cadmium (Cd)	ppm	100	N.D.	N.D.	N.D.	N.D.	<5
Mercury (Hg)	ppm	1000	N.D.	N.D.	N.D.	N.D.	<5
Chromium (CrVI)	ppm	1000	N.D.	N.D.	N.D.	N.D.	<5
PBBs ^{*1}	ppm	1000	N.D.	N.A.	N.A.	N.D.	50
PBDEs ^{*2}	ppm	1000	N.D.	N.A.	N.A.	N.D.	50

Item	Unit	Acceptable Limit	6	7	8	9	10
Lead (Pb)	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.D.
Cadmium (Cd)	ppm	100	N.D.	N.D.	N.D.	N.D.	N.D.
Mercury (Hg)	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.D.
Chromium (CrVI)	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.D.
PBBs ^{*1}	ppm	1000	N.A.	N.A.	N.D.	N.D.	N.A.
PBDEs ^{*2}	ppm	1000	N.A.	N.A.	N.D.	N.D.	N.A.

Item	Unit	Acceptable Limit	11	12	13	14	15
Lead (Pb)	ppm	1000	N.A.	N.D.	N.D.	44.7	N.D.
Cadmium (Cd)	ppm	100	N.A.	N.D.	N.D.	N.D.	N.D.
Mercury (Hg)	ppm	1000	N.A.	N.D.	N.D.	N.D.	N.D.
Chromium (CrVI)	ppm	1000	N.A.	N.D.	N.D.	N.D.	N.D.
PBBs ^{*1}	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.D.
PBDEs ^{*2}	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.D.

Item	Unit	Acceptable Limit	16	17	18	19	20
Lead (Pb)	ppm	1000	N.D.	N.D.	N.D.	N.D.	27.4
Cadmium (Cd)	ppm	100	N.D.	N.D.	N.D.	N.D.	N.D.
Mercury (Hg)	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.D.
Chromium (CrVI)	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.D.
PBBs ^{*1}	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.D.
PBDEs ^{*2}	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.D.

Item	Unit	Acceptable Limit	21	22	23	24	25
Lead (Pb)	ppm	1000	N.D.	N.D.	N.D.	11.2	N.D.
Cadmium (Cd)	ppm	100	N.D.	N.D.	N.D.	N.D.	4
Mercury (Hg)	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.D.
Chromium (CrVI)	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.D.
PBBs ^{*1}	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.A.
PBDEs ^{*2}	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.A.

Item	Unit	Acceptable Limit	26	27	28	29	30
Lead (Pb)	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.D.
Cadmium (Cd)	ppm	100	N.D.	4	N.D.	N.D.	N.D.
Mercury (Hg)	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.D.
Chromium (CrVI)	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.D.
PBBs ^{*1}	ppm	1000	N.A.	N.A.	N.A.	N.A.	N.A.
PBDEs ^{*2}	ppm	1000	N.A.	N.A.	N.A.	N.A.	N.A.

Item	Unit	Acceptable Limit	31	32	33	34	35
Lead (Pb)	ppm	1000	N.D.	N.D.	N.D.	N.D.	8.8
Cadmium (Cd)	ppm	100	N.D.	N.D.	N.D.	N.A.	N.D.
Mercury (Hg)	ppm	1000	N.D.	N.D.	N.D.	N.A.	N.D.
Chromium (CrVI)	ppm	1000	N.D.	N.D.	N.D.	N.A.	N.D.
PBBs ^{*1}	ppm	1000	N.A.	N.D.	N.A.	N.A.	N.D.
PBDEs ^{*2}	ppm	1000	N.A.	N.D.	N.A.	N.A.	N.D.

Item	Unit	Acceptable Limit	36	37	38	39	40	41
Lead (Pb)	ppm	1000	N.D.	48.5	338.8	48.5	330.8	N.D.
Cadmium (Cd)	ppm	100	N.D.	N.A.	N.D.	N.D.	N.D.	N.D.
Mercury (Hg)	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Chromium (CrVI)	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PBBs ^{*1}	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
PBDEs ^{*2}	ppm	1000	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.

Specimen description:

1. PCB AE
2. C X7R 1206 1206B104D101CT WAL SIN
3. R 1206 Royal OHM
4. Zener Diode ZMM5233B EIC
5. Terminal Block 645-1303/8 (FBF) Openwise
6. Aluminum Extruded Dies No.25562
7. Enclosure ABS-V0 Orange
8. Polyester Film (DIM12095/00)
9. Label (LBL12096/03)
10. Clip Spring Stainless PF.SUS301 $\frac{3}{4}$
11. OS-01 20AWG Thai Wonderful
12. Box Paper Flute Econo-watd (PIM D Packaging)
13. Label Barcode Angle 4-R1
14. C MEYJY471MY5VAC250 JEC
15. C LE104C Okaya
16. C MB104 Pilkor
17. C R46KI3470JPM1M Arcotronics
18. C LE Okaya
19. C MPP Europtronic
20. C KXG Nippon Chemi-con
21. C BXA Rubycon
22. C PPN Europtronic
23. C G-Luxon
24. C PCMP Pilkor
25. Wire Jumper Fong Ya
26. Wire Jumper Royal Ohm
27. Wire Jumper Fong Ya
28. R MOS Fong Ya
29. R MF Royal OHM
30. R MOR Royal OHM
31. R MF Fong Ya
32. Axial Lead Diode
33. Diode FMS FORMOSA
34. Diode DB3 Thomson
35. SCR MCR UTC
36. NTC SCK08201MS Thinking
37. L Molded Choke MF 3L Coils
38. L Common Mode KV
39. L Coated Choke EC 3L Coils
40. L Choke KV
41. Toroid 2G8-TRETomita

Note:

- Specimens, which requested to determine Cadmium, Mercury and Lead content, have been dissolved completely.
- ppm = mg/kg
- N.D. = not detected
- N.A. = not applicable

Remark(s):

- *¹ = Polybrominated Biphenyls(PBB) include: Monobromobiphenyl, Dibromobiphenyl, Tribromobiphenyl, Tetrabromobiphenyl, Pentabromobiphenyl, Hexabromobiphenyl, Heptabromobiphenyl, Octabromobiphenyl, Nonabromobiphenyl, Decabromobiphenyl
- *² = Polybrominated Diphenyl ethers (PBDE) include: Monobromodiphenyl ether, Dibromodiphenyl ether, Tribromodiphenyl ether, Tetrabromodiphenyl ether, Pentabromodiphenyl ether, Hexabromodiphenyl ether, Heptabromodiphenyl ether, Octabromodiphenyl ether, Nonabromodiphenyl ether, Decabromodiphenyl ether

Note: The measurement results were determined with support of other competent laboratories. ETS takes on no liability for the topicality, correctness, completeness or quality of the provided information and the test results. Basically, liability claims against ETS are excluded.

Sample Picture


Picture 1 – Front



Picture 2 – Back



Picture 3 – Label

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