



EUROFINS
ETS Product Service GmbH

TEST PROTOCOL

RoHS 2002/95/EC

Project no.:

T8M20801-0007-RoHS



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Attachment Pictures

1 General information

1.1 Protocol provider

ETS PRODUCT SERVICE CO., LTD.
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Bangkapi, Huaykwang, Bangkok 10320 Thailand
Thailand
Telephone: + 66 2716 8530
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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 1x13W, Perform 1x18W, Perform 1x26W,
Perform 1x32W, Perform 1x36W
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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3 Test results

3.1 General Information

Test Report No: T8M20801-0007

3.1.1 Description of the sample

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

ITEM NO.: Perform 1x13W

3.1.2 Date of sample received

25.01.2008

3.1.3 Date tested

Jan 25, 2008 to Mar 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.	44.7	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	6	7	8	9	10
Lead (Pb)	ppm	1000	N.D.	11.2	N.D.	N.D.	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	11	12	13	14	15
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.A.	N.A.	N.D.
PBDEs ^{*2}	ppm	1000	N.A.	N.A.	N.A.	N.A.	N.D.

Item	Unit	Acceptable Limit	16	17	18	19	20
Lead (Pb)	ppm	1000	N.D.	N.D.	N.D.	8.8	N.D.
Cadmium (Cd)	ppm	100	N.D.	N.A.	N.D.	N.D.	N.D.
Mercury (Hg)	ppm	1000	N.D.	N.A.	N.D.	N.D.	N.D.
Chromium (CrVI)	ppm	1000	N.D.	N.A.	N.D.	N.D.	N.D.
PBBs ^{*1}	ppm	1000	N.A.	N.A.	N.D.	N.D.	N.D.
PBDEs ^{*2}	ppm	1000	N.A.	N.A.	N.D.	N.D.	N.D.

Item	Unit	Acceptable Limit	21	22	23	24	25
Lead (Pb)	ppm	1000	48.5	338.8	330.8	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.D.	N.D.	N.A.	50
PBDEs ^{*2}	ppm	1000	N.D.	N.D.	N.D.	N.A.	50

Item	Unit	Acceptable Limit	26	27	28	29	30
Lead (Pb)	ppm	1000	14	N.D.	N.D.	N.D.	N.D.
Cadmium (Cd)	ppm	100	<5	N.D.	N.D.	N.D.	N.D.
Mercury (Hg)	ppm	1000	<5	N.D.	N.D.	N.D.	N.D.
Chromium (CrVI)	ppm	1000	<5	N.D.	N.D.	N.D.	N.D.
PBBs ^{*1}	ppm	1000	50	N.A.	N.A.	N.D.	N.D.
PBDEs ^{*2}	ppm	1000	50	N.A.	N.A.	N.D.	N.D.

Item	Unit	Acceptable Limit	31	32	33	34	35
Lead (Pb)	ppm	1000	N.A.	N.D.	N.D.	N.D.	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.A.	N.A.
PBDEs ^{*2}	ppm	1000	N.D.	N.D.	N.D.	N.A.	N.A.

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

Specimen description:

1. C R46 Arcotronics
2. C 4 LE474C Okaya
3. C MEYJY JEC
4. C PPN Europtronic
5. C KXG Nippon Chemi-con
6. C BXA Rubycon
7. C PCMP Pilkor
8. C MPPS912J3CB22L2 Europtronic
9. C G-Luxon
10. Wire Jumper Fong Ya
11. R MOS Fong Ya
12. R MF Royal OHM
13. R MF Fong Ya
14. R MOR Royal OHM
15. Axial Lead Diode
16. Diode FMS FORMOSA
17. Diac Thomson
18. Transistor STD AUK
19. SCR MCR UTC
20. NTC SCK08201MS Thinking
21. L Molded Choke 3L Coils
22. L Common Mode Kawatetsu
23. L Choke KV
24. Toroid Nicera
25. Terminal Block 645-1303/8 (FBF) Openwise
26. Terminal Block 645-1304/8 (BFBF) Openwise
27. Aluminum Extruded Dies No.25562
28. Enclosure ABS-V0 Orange
29. Polyester Film (DIM11076/00)
30. Label (LBL11077_02.DWG)
31. OS-01 20AWG Thai Wonderful
32. Box Paper Flute (PIM D Packaging)
33. Insert Paper Box (PIM D Packaging)
34. Label Barcode Angle
35. Int. Tooth Lock Washer
36. PCB Draco
37. C 1206B104K101CT WALSIN
38. R 1206 Royal OHM
39. Zener Diode ZMM5233B EIC

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.

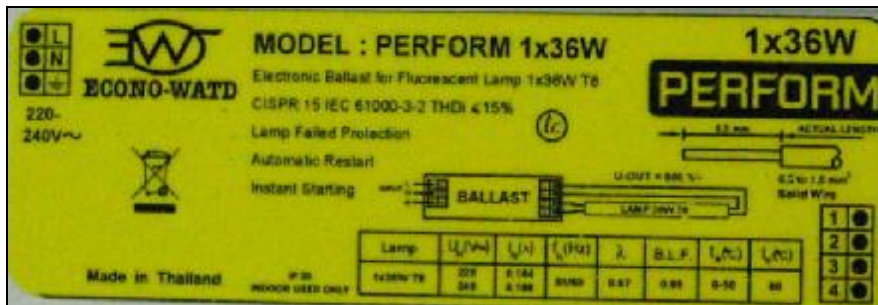
Sample Picture



Picture 1 – Front



Picture 2 – Back



Picture 3 – Label

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