

Test Report

Report No.: RLSZC000481840001

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Applicant : EVERGREEN DONGGUAN ELECTRONICS LTD/DONGGUAN MAOCHANG
PRINTED CIRCUIT BOARD LTD

Address : THE 4TH INDUSTRIAL ZONE, NANSHAN, HUMEN, DONGGUAN,
GUANGDONG, CHINA

Report on the submitted sample(s) said to be:

Sample Name : FR-4 NiAu Plating 电镍金板
Sample Description : PCB(mixed)
Sample Received Date : Mar. 17, 2010
Testing Period : Mar. 17, 2010 to Mar. 25, 2010

Test Requested : As specified by client, to screen Acrylamide and the 29 substances of very high concern (SVHC) under Regulation(EC) No 1907/2006 of REACH, including: Anthracene; 4,4'-Diaminodiphenylmethane; Dibutyl phthalate; Cobalt dichloride; Diarsenic pentaoxide; Diarsenic trioxide; Sodium dichromate; Musk-xylene; Bis(2-ethyl(hexyl)phthalate)(DEHP); Hexabromocyclododecane(HBCDD); Short Chain Chlorinated Paraffins; Bis(tributyltin)oxide; Lead hydrogen arsenate; Benzyl butyl phthalate; Triethyl Arsenate; Anthracene oil; four types of Anthracene oil fractions; Coal tar pitch, high temperature; Aluminosilicate, Refractory Ceramic Fibres; Zirconia Aluminosilicate, Refractory Ceramic Fibres; 2,4-Dinitrotoluene; Diisobutyl phthalate (DIBP); Lead chromate; Lead chromate molybdate sulphate red (C.I. Pigment Red 104); Lead sulfochromate yellow(C.I. Pigment Yellow 34); Tris(2-chloroethyl)phosphate (TCEP) in the submitted sample.

Test Method : Please refer to the following page(s).

Test Result(s) : Please refer to the following page(s).

Summary : According to the analytical results, concentrations of Acrylamide and 29 SVHC substances are less than 0.1% in the submitted sample.

Tested by _____
Approved by _____
Technical Manager



Inspected by Jed
Date Mar. 25, 2010

No. 38798880

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Test Method:

Substance Name(s)	Test Method and Equipments	Substance Classification	Report Limit
Anthracene	Refer to US EPA 3550C:2007 & US EPA 8270D:2007, GC-MS	PBT	0.005%
4,4'- Diaminodiphenylmethane	Refer to US EPA 8270D:2007, GC-MS	Carcinogen, cat. 2	0.005%
Dibutyl phthalate(DBP)	Refer to ASTM D3421:1975, GC-MS	Toxic for reproduction, cat.2	0.005%
Cobalt dichloride*	Refer to US EPA 3052:1996/ BS EN14582:2007, ICP-OES/IC	Carcinogen, cat.2	0.01%
Diarsenic pentaoxide*	Refer to US EPA 3052:1996, ICP-OES	Carcinogen, cat.1	0.01%
Diarsenic trioxide*	Refer to US EPA 3052:1996, ICP-OES	Carcinogen, cat.1	0.01%
Sodium dichromate*	Refer to US EPA 3052:1996/ US EPA3060A:1996, ICP-OES/UV-Vis	Carcinogen, cat.2; Mutagen, cat.2; Toxic for reproduction, cat.2	0.01%
Musk xylene	Refer to US EPA 3540C:1996, GC-MS	vPvB	0.005%
Bis(2-ethyl(hexyl)phthalate) (DEHP)	Refer to ASTM D3421:1975, GC-MS	Toxic for reproduction, cat.2	0.005%
Hexabromocyclododecane (HBCDD)	Refer to US EPA 3540C:1996, GC-MS	PBT	0.005%
Short Chain Chlorinated Paraffins(SCCPs)	Refer to US EPA 3540C:1996, GC-MS	PBT; vPvB	0.01%
Bis(tributyltin)oxide (TBTO)*	Refer to US EPA 3052:1996/ DIN 38407:2003, ICP-OES/GC-MS	PBT	0.005%
Lead hydrogen arsenate*	Refer to US EPA 3052:1996, ICP-OES	Carcinogen, cat.1; Toxic for reproduction, cat.1	0.01%
Benzyl butyl phthalate(BBP)	Refer to ASTM D3421:1975, GC-MS	Toxic for reproduction, cat.2	0.005%
Triethyl arsenate*	Refer to US EPA 3052:1996, ICP-OES	Carcinogen, cat.1	0.01%

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Test Method:

Substance Name(s)	Test Method and Equipments	Substance Classification	Report Limit
^① Anthracene oil	In-house method, GC-MS	PBT	0.05%
^① Anthracene oil, anthracene paste, distn. Lights ****	In-house method, GC-MS	PBT	0.05%
^① Anthracene oil, anthracene paste, anthracene fraction	In-house method, GC-MS	PBT	0.05%
^① Anthracene oil, anthracene-low	In-house method, GC-MS	PBT	0.05%
^① Anthracene oil, anthracene paste	In-house method, GC-MS	PBT	0.05%
^① Coal tar pitch, high temperature	In-house method, GC-MS	PBT; Carcinogen, cat.2	0.05%
^② Aluminosilicate, Refractory Ceramic Fibres	In-house method, ICP-OES/SEM-EDS	Carcinogen, cat.2	0.05%
^② Zirconia Aluminosilicate, Refractory Ceramic Fibres	In-house method, ICP-OES/SEM-EDS	Carcinogen, cat.2	0.05%
2,4-Dinitrotoluene	In-house method, GC-MS	Carcinogen, cat.2	0.01%
Diisobutyl phthalate (DIBP)	Refer to ASTM D 3421:1975, GC-MS	Toxic for reproduction, cat.2	0.005%
^② Lead chromate	Refer to US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-Vis	Carcinogen, cat.2; Toxic for reproduction, cat.1	0.05%
^② Lead chromate molybdate sulphate red (C.I. Pigment Red 104)***	Refer to US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-Vis	Carcinogen, cat.2; Toxic for reproduction, cat.1	0.05%
^② Lead sulfochromate yellow (C.I. Pigment Yellow 34)***	Refer to US EPA 3052:1996/ US EPA 3060A:1996, ICP-OES/UV-Vis	Carcinogen, cat.2; Toxic for reproduction, cat.1	0.05%
Tris(2-chloroethyl)phosphate (TCEP)	In-house method, GC-MS	Toxic for reproduction, cat.2	0.01%
Acrylamide	In-house method, HPLC	Carcinogen, cat.2; Mutagen, cat.2	0.01%

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Test Result(s) 1:

Substance Name(s)	CAS No.	EC No.	Concentration(%)
Anthracene	120-12-7	204-371-1	N.D.
4,4'- Diaminodiphenylmethane	101-77-9	202-974-4	N.D.
Dibutyl phthalate(DBP)	84-74-2	201-557-4	N.D.
Cobalt dichloride*	7646-79-9	231-589-4	N.D.
Diarsenic pentaoxide*	1303-28-2	215-116-9	N.D.
Diarsenic trioxide*	1327-53-3	215-481-4	N.D.
Sodium dichromate*	7789-12-0/ 10588-01-9	234-190-3	N.D.
Musk xylene	81-15-2	201-329-4	N.D.
Bis(2-ethyl(hexyl)phthalate)(DEHP)	117-81-7	204-211-0	N.D.
Hexabromocyclododecane (HBCDD)	25637-99-4/ 3194-55-6	247-148-4/ 221-695-9	N.D.
Short Chain Chlorinated Paraffins(SCCPs)	85535-84-8	287-476-5	N.D.
Bis(tributyltin)oxide (TBTO)*	56-35-9	200-268-0	N.D.
Lead hydrogen arsenate*	7784-40-9	232-064-2	N.D.
Benzyl butyl phthalate(BBP)	85-68-7	201-622-7	N.D.
Triethyl arsenate*	15606-95-8	427-700-2	N.D.
^① Anthracene oil	90640-80-5	292-602-7	N.D.
^① Anthracene oil,anthracene paste, distn. Lights ****	91995-17-4	295-278-5	N.D.
^① Anthracene oil, anthracene paste, anthracene fraction	91995-15-2	295-275-9	N.D.
^① Anthracene oil, anthracene-low	90640-82-7	292-604-8	N.D.
^① Anthracene oil, anthracene paste	90640-81-6	292-603-2	N.D.
^① Coal tar pitch, high temperature	65996-93-2	266-028-2	N.D.
^② Aluminosilicate, Refractory Ceramic Fibres	-	650-017-00-8**	N.D.
^② Zirconia Aluminosilicate, Refractory Ceramic Fibres	-	650-017-00-8**	N.D.
2,4-Dinitrotoluene	121-14-2	204-450-0	N.D.
Diisobutyl phthalate (DIBP)	84-69-5	201-553-2	N.D.
^② Lead chromate	7758-97-6	231-846-0	N.D.
^② Lead chromate molybdate sulphate red (C.I. Pigment Red 104)***	12656-85-8	235-759-9	N.D.
^② Lead sulfochromate yellow (C.I. Pigment Yellow 34)***	1344-37-2	215-693-7	N.D.
Tris(2-chloroethyl)phosphate (TCEP)	115-96-8	204-118-5	N.D.

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Test Result(s) 2:

Tested Item(s)	CAS No.	EC No.	Concentration(%)
Acrylamide	79-06-1	201-173-7	N.D.

Note:

- N.D. = Not Detected (<report limit)
- 0.1%= 1000 mg/kg =1000 ppm
- PBT= Persistent,Bioaccumulative,Toxic; vPvB=very Persistent very Bioaccumulative
- *:Concentration value of Cobalt dichloride by the conversion from the test results of Cobalt and Chlorine.
Concentration value of Diarsenic pentaoxide, Diarsenic trioxide, Sodium dichromate, Bis(tributyltin)oxide, Lead hydrogen arsenate, Triethyl arsenate by the conversion from the test results of corresponding heavy metal.
- **:
All refractory ceramic fibres are covered by index number 650-017-00-8 in Annex VI of the Regulation on Classification, Labeling and Packaging of chemical substances and mixtures, the so called CLP Regulation (Regulation (EC) No 1272/2008).
- ***: C.I.: Colour Index
- ****:Light fractions from distillation
- ^①:In view of the substances are established as UVCB substances (substances of unknown or variable composition, complex reaction products or biological materials) consisting of different and variable constituents, the test results are calculated based on the main constituents of the representative compounds for substances.
- ^②:In view of the substance contain variable substances, the test results are calculated based on main constituents of the representative compounds for the substances, and the test results of the representative compounds are calculated based on the result of specified heavy metal elements.

Remark:

The report limit is evaluated based on the representative substances.

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Appendix:

1. According to the Article 33 of the Regulation (EC) No 1907/2006 (REACH)-Duty to communicate information on substances in articles.

—Any supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1 % weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance.

—On request by a consumer any supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1 % weight by weight (w/w) shall provide the consumer with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance. The relevant information shall be provided, free of charge, within 45 days of receipt of the request.

2. According to the Article 33 of the Regulation (EC) No 1907/2006 (REACH)- Notification of the Substance in Article.

—If a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1), EU and EEA producers or importers of articles have to notify ECHA when their article contains a substance on the Candidate List. This obligation applies if the substance is present above 0.1% (w/w) and its quantities in the produced/imported articles are above 1 tonne in total per year.

3. According to the other articles of the Regulation (EC) No 1907/2006 (REACH), The relevant obligation for the substance on its own or in preparation.

—OBLIGATIONS: SUBSTANCES

From 28 October 2008, EU & EEA suppliers of a substance have to provide a safety data sheet to their customers when the substance is on the Candidate List.

—OBLIGATIONS: PREPARATIONS

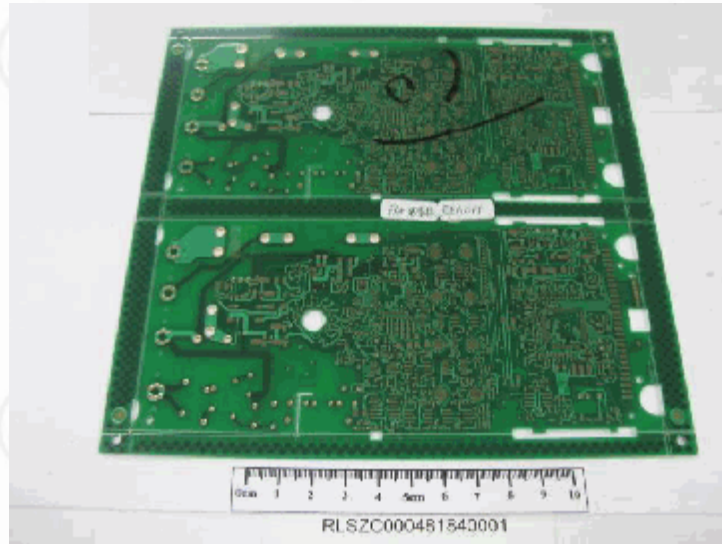
From 28 October 2008, EU and EEA suppliers of a preparation not classified as dangerous according to Directive 1999/45/EC have to provide the recipients, at their request, with a safety data sheet if the preparation contains at least one substance on the Candidate List and its individual concentration is at least 0.1% (w/w) for non gaseous preparations and at least 0.2% by volume for gaseous preparations.

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Photo(s) of the sample(s)



*** End of report ***

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