

TEST REPORT

Reference No. : TRGZ1212100

Date : Dec. 24, 2012

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Client : 3F ELECTRONICS INDUSTRY CORP. LTD
Address : NO.5, ZHENXING RD, LIYUHE INDUSTRY PARK, LOU VILLAGE, GONGMING STREET, BAOAN DISTRICT, SHENZHEN

The following merchandise was (were) submitted and identified by the client as:

Name of Product : PVC wire and cable
Test Model : Red and black
Model May Cover : /
Main Material: PVC
Sample Received : Dec. 17, 2012
Test Period : Dec. 17, 2012 - Dec. 24, 2012
Test Period : According to European Commission Regulation 1907/2006 (REACH Act), to test the SVHC content which have been listed in ECHA's SVHC candidate list till 18 Jun. 2012.
<http://echa.europa.eu/web/guest/candidate-list-table>
Test Method : In-house method with reference to EPA: 8270D, 3052, 3050B, 6010C, 3550C and EN14362, DIN EN ISO 17353, IEC 62321, ZEK01.4-08, EN 14582.
Test Result : Please refer to next page(s).
Conclusion : According to the analyzed result on submitted samples, the contents of mentioned test items **are less than 0.1%**.

Issued by:



TUV NORD Green Product Service Centre
Technical Manager

TUV NORD Green Product Service Centre
Technical Manager

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TEST RESULTS:

Seq.	Test Item(s)	EC. No.	CAS No.	MDL (%)	Test Results [▲] (%)
1	2,4-Dinitrotoluene	204-450-0	121-14-2	0.01	N.D.
2	2-Ethoxyethanol	203-804-1	110-80-5	0.005	N.D.
3	2-Methoxyethanol	203-713-7	109-86-4	0.005	N.D.
4	4,4'- Diaminodiphenylmethane	202-974-4	101-77-9	0.005	N.D.
5	5-tert-butyl-2,4,6-trinitro-m-xylene	201-329-4	81-15-2	0.005	N.D.
6	Acrylamide	201-173-7	79-06-1	0.01	N.D.
7	Alkanes, C ₁₀₋₁₃ , chloro	287-476-5	85535-84-8	0.005	N.D.
8	Ammonium dichromate*	232-143-1	7789-09-5	0.01	N.D.
9	Anthracene	204-371-1	120-12-7	0.005	N.D.
10	Anthracene oil	292-602-7	90640-80-5	0.01	N.D.
11	Anthracene oil, anthracene paste	292-603-2	90640-81-6	0.01	N.D.
12	Anthracene oil, anthracene paste, anthracene fraction	295-275-9	91995-15-2	0.01	N.D.
13	Anthracene oil, anthracene paste; distn. Lights	295-278-5	91995-17-4	0.01	N.D.
14	Anthracene oil, anthracene-low	292-604-8	90640-82-7	0.01	N.D.
15	Benzyl butyl phthalate(BBP)	201-622-7	85-68-7	0.005	N.D.
16	Di(2-ethyl(hexyl)phthalate)(DEHP)	204-211-0	117-81-7	0.005	0.010
17	Bis(tributyltin)oxide**	200-268-0	56-35-9	0.005	N.D.
18	Boric acid*	233-139-2 / 234-343-4	10043-35-3 / 11113-50-1	0.01	N.D.
19	Chromic acid, Oligomers of chromic acid and dichromic acid, Dichromic acid	231-801-5 - 236-881-5	7738-94-5 - 13530-68-2	0.01	N.D.
20	Chromium trioxide*	215-607-8	1333-82-0	0.01	N.D.
21	Cobalt dichloride*	231-589-4	7646-79-9	0.01	N.D.
22	Cobalt(II) carbonate*	208-169-4	513-79-1	0.01	N.D.
23	Cobalt(II) diacetate*	200-755-8	71-48-7	0.01	N.D.
24	Cobalt(II) dinitrate*	233-402-1	10141-05-6	0.01	N.D.

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Seq.	Test Item(s)	EC. No.	CAS No.	MDL (%)	Test Results [▲] (%)
25	Cobalt(II) sulphate*	233-334-2	10124-43-3	0.01	N.D.
26	Diarsenic pentaoxide*	215-116-9	1303-28-2	0.01	N.D.
27	Diarsenic trioxide*	215-481-4	1327-53-3	0.01	N.D.
28	Dibutyl Phthalate(DBP)	201-557-4	84-74-2	0.002	N.D.
29	Diisobutyl Phthalate(DIBP)	201-553-2	84-69-5	0.01	N.D.
30	Disodium tetraborate, anhydrous*	215-540-4	1303-96-4/ 1330-43-4/ 12179-04-3	0.01	N.D.
31	Hexabromocyclododecane	247-148-4 and 221-695-9	25637-99-4 3194-55-6 (134237-50-6) (134237-51-7) (134237-52-8)	0.002	N.D.
32	Lead chromate*	231-846-0	7758-97-6	0.01	N.D.
33	Lead chromate molybdate sulfate red (C.I. Pigment Red 104)*	235-759-9	12656-85-8	0.01	N.D.
34	Lead hydrogen arsenate*	232-064-2	7784-40-9	0.01	N.D.
35	Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	215-693-7	1344-37-2	0.01	N.D.
36	Coal tar pitch, high temperature	266-028-2	65996-93-2	0.01	N.D.
37	Potassium chromate*	232-140-5	7789-00-6	0.01	N.D.
38	Potassium dichromate*	231-906-6	7778-50-9	0.01	N.D.
39	Sodium chromate*	231-889-5	7775-11-3	0.01	N.D.
40	Sodium dichromate*	234-190-3	7789-12-0/ 10588-01-9	0.01	N.D.
41	Tetraboron disodium heptaoxide, hydrate*	235-541-3	12267-73-1	0.01	N.D.
42	Trichloroethylene	201-167-4	79-01-6	0.01	N.D.
43	Triethyl arsenate*	427-700-2	15606-95-8	0.01	N.D.
44	Tris(2-chloroethyl)phosphate	204-118-5	115-96-8	0.01	N.D.
45	2-ethoxyethyl acetate	203-839-2	111-15-9	0.01	N.D.
46	Strontium chromate*	232-142-6	7789-06-2	0.01	N.D.

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Seq.	Test Item(s)	EC. No.	CAS No.	MDL (%)	Test Results [▲] (%)
47	1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	271-084-6	68515-42-4	0.01	N.D.
48	Hydrazine	206-114-9	7803-57-8 302-01-2	0.01	N.D.
49	1-methyl-2-pyrrolidone	212-828-1	872-50-4	0.01	N.D.
50	1,2,3-trichloropropane	202-486-1	96-18-4	0.01	N.D.
51	1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters,C7-rich	276-158-1	71888-89-6	0.01	N.D.
52	Lead dipicrate*	229-335-2	6477-64-1	0.01	N.D.
53	Lead styphnate*	239-290-0	15245-44-0	0.01	N.D.
54	Lead azide Lead diazide*	236-542-1	13424-46-9	0.01	N.D.
55	Phenolphthalein	201-004-7	77-09-8	0.01	N.D.
56	2,2'-dichloro-4,4'-methylenedianiline (MOCA)	202-918-9	101-14-4	0.01	N.D.
57	N,N-dimethylacetamide	204-826-4	127-19-5	0.01	N.D.
58	Trilead diarsenate*	222-979-5	3687-31-8	0.01	N.D.
59	Calcium arsenate*	231-904-5	7778-44-1	0.01	N.D.
60	Arsenic acid*	231-901-9	7778-39-4	0.01	N.D.
61	Bis(2-methoxyethyl) ether	203-924-4	111-96-6	0.01	N.D.
62	1,2-Dichloroethane	203-458-1	107-06-2	0.01	N.D.
63	4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert-Octylphenol)	205-426-2	140-66-9	0.01	N.D.
64	2-Methoxyaniline; o-Anisidine	201-963-1	90-04-0	0.01	N.D.
65	Bis(2-methoxyethyl) phthalate(DMEP)	204-212-6	117-82-8	0.01	N.D.
66	Formaldehyde, oligomeric reaction products with aniline	500-036-1	25214-70-4	0.01	N.D.

***** To be continued *****

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Seq.	Test Item(s)	EC. No.	CAS No.	MDL (%)	Test Results [▲] (%)
67	Zirconia Aluminosilicate Refractory Ceramic Fibres are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.1 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfil the three following conditions: a) oxides of aluminium, silicon and zirconium are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm). c) alkaline oxide and alkali earth oxide (Na ₂ O+K ₂ O+CaO+MgO+BaO) content less or equal to 18% by weight ***	---	---	0.01	N.D.
68	Aluminosilicate Refractory Ceramic Fibres are fibres covered by index number 650-017-00-8 in Annex VI, part 3, table 3.1 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, and fulfil the three following conditions: a) oxides of aluminium and silicon are the main components present (in the fibres) within variable concentration ranges b) fibres have a length weighted geometric mean diameter less two standard geometric errors of 6 or less micrometres (µm) c) alkaline oxide and alkali earth oxide (Na ₂ O+K ₂ O+CaO+MgO+BaO) content less or equal to 18% by weight ***	---	---	0.01	N.D.
69	Pentazinc chromate octahydroxide*	256-418-0	49663-84-5	0.01	N.D.
70	Potassium hydroxyoctaoxodizincatedi-chromate*	234-329-8	11103-86-9	0.01	N.D.
71	Dichromium tris(chromate)*	246-356-2	24613-89-6	0.01	N.D.
72	1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	203-977-3	112-49-2	0.01	N.D.

***** To be continued *****

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Seq.	Test Item(s)	EC. No.	CAS No.	MDL (%)	Test Results [▲] (%)
73	1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	203-794-9	110-71-4	0.01	N.D.
74	Diboron trioxide	215-125-8	1303-86-2	0.01	N.D.
75	Formamide	200-842-0	75-12-7	0.01	N.D.
76	Lead(II) bis(methanesulfonate) *	401-750-5	17570-76-2	0.01	N.D.
77	TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	219-514-3	2451-62-9	0.01	N.D.
78	β-TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	423-400-0	59653-74-6	0.01	N.D.
79	4,4'-bis(dimethylamino) benzophenone (Michler's ketone)	202-027-5	90-94-8	0.01	N.D.
80	N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	202-959-2	101-61-1	0.01	N.D.
81	[4-[4,4'-bis(dimethylamino)benzhydrylidene]cyclohexa-2,5-dien-1-ylidene]dimethylammonium chloride (C.I. Basic Violet 3) ****	208-953-6	548-62-9	0.01	N.D.
82	[4-[[4-anilino-1-naphthyl][4-(dimethylamino)phenyl]methylene]cyclohexa-2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) ****	219-943-6	2580-56-5	0.01	N.D.
83	α,α-Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) ****	229-851-8	6786-83-0	0.01	N.D.
84	4,4'-bis(dimethylamino)-4''-(methylamino)trityl alcohol ****	209-218-2	561-41-1	0.01	N.D.

***** To be continued *****

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- Remark 1**
- 1) In accordance with Regulation(EC) No. 1907/2006, any producer or importer of articles shall notify ECHA, in accordance with paragraph 4 of Article 7, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1), if both the following conditions are met:
 - (a) the substance is present in those articles in quantities totalling over 1 tonne per producer or importer per year;
 - (b) the substance is present in those articles above a concentration of 0,1 % weight by weight (w/w).
 - 2) From 28 October 2008, EU & EEA suppliers of articles which contain substances on the Candidate List in a concentration above 0.1% (w/w) must provide sufficient information, available to them, to their customers and on request to a consumer within 45 days of the receipt of this request. This information must ensure safe use of the article and, as a minimum, include the name of the substance.
- Remark 2**
- 1)* Calculated concentration of cobalt dichloride, cobalt(II) sulphate, cobalt(II) dinitrate, cobalt(II) carbonate and cobalt(II) diacetate is based on the identified heavy metal and anion result. Calculated concentration of diarsenic pentaoxide, diarsenic trioxide,chromium trioxide,sodium dichromate, hydrate, lead hydrogen arsenate, triethyl arsenate, lead chromate, sodium chromate, strontium chromate ,potassium chromate, ammonium dichromate,potassium dichromate, lead chromate molybdate sulfate red, lead sulfochromate yellow and acids generated from chromium trioxide and their oligomers, Lead dipicrate, Lead styphnate, Lead azide Lead diazide, Trilead diarsenate , Calcium arsenate , Arsenic acid , Potassium hydroxyoctaoxodizincatedi-chromate, Dichromium tris(chromate), Pentazinc chromate octahydroxide, Lead(II) bis(methanesulfonate) are based on the identified heavy metal result, boric acid, disodium tetraborate, anhydrous and tetraboron disodium heptaoxide, hydrate are based on the identified result of boron and sodium result. The identities of above metal substances present in the article have to be further confirmed;
 - 2)** Concentration of bis(tributyltin)oxide, TBTO is reported as tributyltin, TBT. The result is a screening test of TBTO and can cover TBTO and other salts under current technologies. Further investigation is needed to have the exact amount of TBTO;
 - 3)*** Calculated concentration of Aluminosilicate, Refractory Ceramic Fibres ;Zirconia Aluminosilicate, Refractory Ceramic Fibres is based on the identified heavy metal result and confirmation by microscope;
 - 4) ****The substance does only fulfil the criteria of REACH Art. 57 (a) if it contains Michler's ketone (EC Number: 202-027-5) or Michler's base (EC Number: 202-959-2) in a concentration $\geq 0.1\%$ (weight / weight);
 - 5) N.D. = Not detected, less than MDL.
 - 6) ^As the client required, the sample was tested in mixture.

Test Part Description: Red wire jacket + black wire jacket

***** To be continued *****

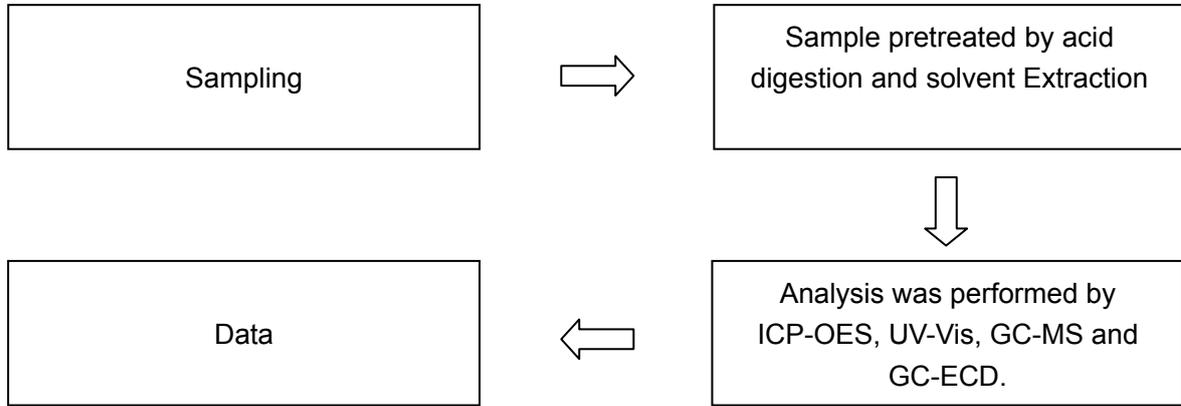
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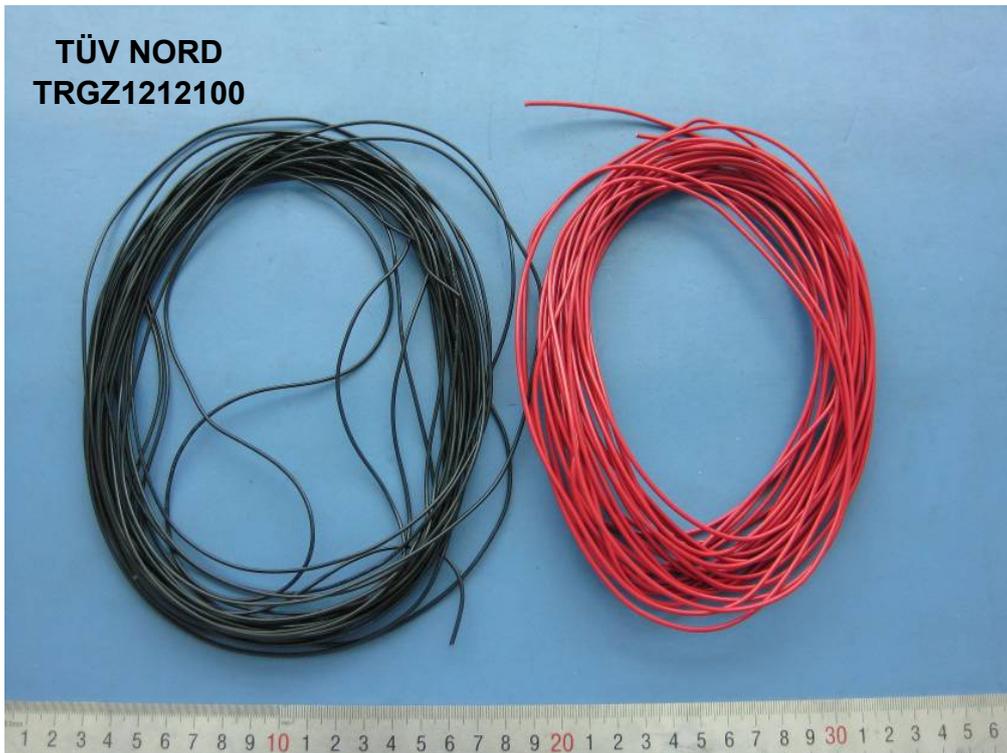
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FLOW CHART



SAMPLE PHOTO



***** END OF REPORT *****