

## Test Report

No. LPCI/17441/11  
CTS Ref. CTS/11/3007/ASJ

Date : 10/08/2011

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ASJ COMPONENTS (M) SDN. BHD.  
PTD 37440, JALAN PERINDUSTRIAN SENAI III,  
KAWASAN PERINDUSTRIAN SENAI FASA II, 81400 SENAI, JOHOR DARUL TAKZIM, MALAYSIA.

The following sample(s) was/were submitted and identified by the client as:

Sample Description : CHIP RESISTOR SERIES  
Sample Received : 26/07/2011  
Testing Date : 26/07/2011 to 10/08/2011

Test Requested : As requested by client, SVHC screening is performed according to:  
1) Forty-six (46) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorization published by European Chemicals Agency (ECHA) on and before December 15, 2010 regarding Regulation (EC) No 1907/2006 concerning the REACH.  
2) Seven (7) substances in the Candidate List of Substances of Very High Concern (SVHC) for authorisation published by European Chemicals Agency (ECHA) on June 20, 2011 regarding Regulation (EC) No 1907/2006 concerning the REACH.

Test Results : Please refer to next page(s).

Summary :

According to the specific scope and analytical techniques, concentrations of tested SVHC are $\leq$ reporting limit in the submitted sample.	PASS
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Analysts : Ng Mei Kheng & Yee Sook Wai

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Test Method: SGS In-House method. Analysis was performed by ICP-OES, UV-Vis, and GC-MS.

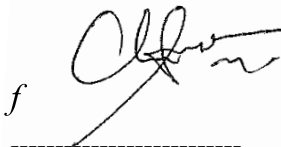
- Remarks:
1. The chemical analysis of specific SVHC is performed by means of currently available analytical techniques against the following SVHC related documents published by ECHA.  
 -[http://echa.europa.eu/chem\\_data/authorisation\\_process/candidate\\_list\\_table\\_en.asp](http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp)  
 These lists are under evaluation by ECHA and may subject to change in the future.
  2. Test results in this report are based on the tested samples. This report refers to testing result of tested sample submitted as homogenous material(s). In case such material is being used to compose an article, the results indicated in this report may not represent SVHC concentration in such article.
  3. If a SVHC is found over the reporting limit, client is suggested to identify the component which contains the SVHC and the exact concentration of the SVHC by requesting further quantitative analysis from the laboratory.

Test Sample:

Sample Description :

No.	Part Name	Colour	Test Group
1.	CHIP RESISTOR SERIES	Green	a

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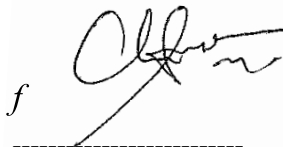
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Test Results:

Substance Name	CAS No.	EC No.	Concentration (%)	RL (%)
			a	
1,2,3-trichloropropane	96-18-4	202-486-1	N.D.	0.050
1,2-benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich	71888-89-6	276-158-1	N.D.	0.050
1,2-benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters	68515-42-4	271-084-6	N.D.	0.050
1-methyl-2-pyrrolidone	872-50-4	212-828-1	N.D.	0.050
2-ethoxyethyl acetate	111-15-9	203-839-2	N.D.	0.050
2-Methoxyethanol	109-86-4	203-713-7	N.D.	0.050
2-Ethoxyethanol	110-80-5	203-804-1	N.D.	0.050
2,4-Dinitrotoluene	121-14-2	204-450-0	N.D.	0.050
4,4'-Diaminodiphenylmethane (MDA)	101-77-9	202-974-4	N.D.	0.050
5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene)	81-15-2	201-329-4	N.D.	0.050
Acids generated from chromium trioxide and their oligomers: Chromic acid Dichromic acid Oligomers of chromic acid and dichromic acid *	7738-94-5 13530-68-2 -	231-801-5 236-881-5 -	N.D.	0.005
Acrylamide	79-06-01	201-173-7	N.D.	0.050
Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins)	85535-84-8	287-476-5	N.D.	0.050
Aluminosilicate, Refractory Ceramic Fibres*	650-017-00-8 (Index No.)	-	N.D.	0.005
Ammonium dichromate*	7789-09-5	232-143-1	N.D.	0.005
Anthracene	120-12-7	204-371-1	N.D.	0.005

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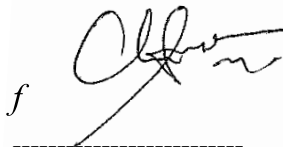
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Substance Name	CAS No.	EC No.	Concentration (%)	RL (%)
			a	
Anthracene oil*	90640-80-5	292-602-7	N.D.	0.050
Anthracene oil, anthracene paste*	90640-81-6	292-603-2	N.D.	0.050
Anthracene oil, anthracene paste, anthracene fraction*	91995-15-2	295-275-9	N.D.	0.050
Anthracene oil, anthracene paste, distn. Lights*	91995-17-4	295-278-5	N.D.	0.050
Anthracene oil, anthracene-low*	90640-82-7	292-604-8	N.D.	0.050
Benzyl butyl phthalate (BBP)	85-68-7	201-622-7	N.D.	0.050
Bis(2-ethylhexyl)phthalate (DEHP)	117-81-7	204-211-0	N.D.	0.050
Bis(tributyltin)oxide (TBTO)	56-35-9	200-268-0	N.D.	0.050
Boric acid*	10043-35-3 11113-50-1	233-139-2 234-343-4	N.D.	0.005
Chromium trioxide*	1333-82-0	215-607-8	N.D.	0.005
Cobalt dichloride*	7646-79-9	231-589-4	N.D.	0.005
Cobalt (II) sulphate*	10124-43-3	233-334-2	N.D.	0.005
Cobalt (II) dinitrate*	10141-05-6	233-402-1	N.D.	0.005
Cobalt (II) carbonate*	513-79-1	208-169-4	N.D.	0.005
Cobalt (II) diacetate*	71-48-7	200-755-8	N.D.	0.005
Diarsenic pentaoxide*	1303-28-2	215-116-9	N.D.	0.005
Diarsenic trioxide*	1327-53-3	215-481-4	N.D.	0.005
Dibutyl phthalate(DBP)	84-74-2	201-557-4	N.D.	0.050
Diisobutyl phthalate	84-69-5	201-553-2	N.D.	0.050

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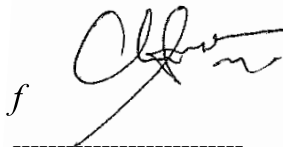
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Substance Name	CAS No.	EC No.	Concentration (%)	RL (%)
			a	
Disodium tetraborate, anhydrous*	1303-96-4 1330-43-4 12179-04-3	215-540-4	N.D.	0.005
Hydrazine	7803-57-8 302-01-2	206-114-9	N.D.	0.050
Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified ( $\alpha$ -HBCDD, $\beta$ -HBCDD, $\gamma$ -HBCDD) <sup>Δ</sup>	25637-99-4 3194-55-6	247-148-4 221-695-9	N.D.	0.050
Lead chromate*	7758-97-6	231-846-0	N.D.	0.005
Lead chromate molybdate sulfate red (C.I. Pigment Red 104)*	12656-85-8	235-759-9	N.D.	0.005
Lead hydrogen arsenate*	7784-40-9	232-064-2	N.D.	0.005
Lead sulfochromate yellow (C.I. Pigment Yellow 34)*	1344-37-2	215-693-7	N.D.	0.005
Pitch, coal tar, high temp.*	65996-93-2	266-028-2	N.D.	0.050
Potassium chromate*	7789-00-6	232-140-5	N.D.	0.005
Potassium dichromate*	7778-50-9	231-906-6	N.D.	0.005
Sodium chromate*	7775-11-3	231-889-5	N.D.	0.005
Sodium dichromate*	7789-12-0 10588-01-9	234-190-3	N.D.	0.005
Strontium chromate	7789-06-2	232-142-6	N.D.	0.005
Tetraboron disodium heptaoxide, hydrate*	12267-73-1	235-541-3	N.D.	0.005
Trichloroethylene	79-01-6	201-167-4	N.D.	0.050
Triethyl arsenate*	15606-95-8	427-700-2	N.D.	0.005
Tris(2-chloroethyl)phosphate	115-96-8	204-118-5	N.D.	0.050
Zirconia Aluminosilicate, Refractory Ceramic Fibres*	650-017-00-8 (Index no.)	-	N.D.	0.005

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Note:

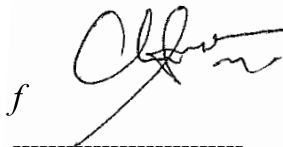
- 1) RL = Reporting Limit. All RL are based on homogenous material
- 2) N.D = Not detected (below RL). ND is denoted on the SVHC substance.  
NA = Not applicable to respective material type. (Organic test will not conduct for untreated glass, ceramic and metal)  
NA^ = The submitted sample was found to contain significant amount of specific element(s) of SVHC. Upon further test verification and also information provided from client, the possibility that the element(s) content originate from SVHC is very unlikely, even though their presence cannot be exclude entirely. It may be assumed that detected element(s) have a non-SVHC source.
- 3) <sup>Δ</sup> CAS No. of diastereoisomers identified ( $\alpha$ -HBCDD,  $\beta$ -HBCDD,  $\gamma$ -HBCDD): 134237-50-6, 134237-51-7, 134237-52-8
- 4) \* The test result is based on the calculation of selected element(s) / marker(s) and to the worst-case scenario. For detail information, please refer to the SGS REACH website: [www.reach.sgs.com/substance-of-very-high-concern-analysis-information-page.htm](http://www.reach.sgs.com/substance-of-very-high-concern-analysis-information-page.htm)

The client is advised to review the chemical formulation to ascertain above metal substances present in the article.

RL = 0.005% is evaluated for element (i.e. cobalt, arsenic, lead, sodium, silicon, chromium, chromium (VI), silicon, aluminium, zirconium, boron, and potassium respectively), except molybdenum RL = 0.0005%.

- 5) The result is calculated based on the minimum sample weight for composite testing.

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