



# Certificate of Approval

Certificate No.: 10113Q10674R0M

Registration Add.: Economy & Technology Development Zone, Guangde City Anhui Province

Office Add.: Economy & Technology Development Zone, Guangde City

Production Add.: Economy & Technology Development Zone, Guangde City

*Beijing ZhongLianTianRun Certification Center (ZLTR) certify that the Quality Management System of the above organization has been assessed and found to be in accordance with the requirements of the standard:*

**GB/T19001-2008 / ISO9001: 2008**

## SCOPE OF CERTIFICATION/REGISTRATION

**Wood Plastic Composite products producing and sales**

*Subject to operation conditions in requirements conformity with Quality Management System,*

*This Certificate is valid for a period of three years only.*

**Date from: Jun 4th, 2013 To: Jun 3rd, 2016**

*The effectiveness of this Certificate shall be Validated by periodic surveillance audit of ZLTR for maintenance. This Certificate will not be in force unless qualified identification is stuck there under by ZLTR within appropriate time limit.*

2014-05-21	Stuck	2015-05-21	Stuck
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Conditions on effectiveness of certificate see: <http://www.zltr.com.cn>



MANAGEMENT SYSTEM  
CNAS C101-Q



## Beijing Zhongliantianrun Certification Center

Room 2601, 2602, 2603, 26th Floor, 2nd Unit, Block 1, No.4 Yard, Qiming Road, Chaoyang District, Beijing, P.R. China 100102

ISO 9001

ISO 9001



# CERTIFICATE

Number: BV-COC-010076

Issued: July 26<sup>th</sup>, 2011  
Valid until: July 25<sup>th</sup>, 2016

Bureau Veritas Certification certifies that the company

has implemented a FSC wood products control system according to the Forest Stewardship Council certification system, in the following location(s):

Guangde Economy & Technology Development Zone, Guangde County 242237, Anhui  
Province, China  
242237 – GUANGDE – CHINA

for its activities concerning:

## Manufacturing of Bamboo or Wood Plastic Composite certified FSC Pure \*

\*Updated list of products & species on the FSC database ([www.info.fsc.org](http://www.info.fsc.org))

This company has been assessed and found to conform to the requirements of the:

FSC Chain of Custody standard, Ref.: FSC-STD-40-004, v. 2.0

This certificate is valid for a 5 years period.

Paris La Défense, July 26<sup>th</sup>, 2011

Bureau Veritas Certification France Managing Director

Etienne CASAL

The validity of this certificate shall be verified on: [www.fsc.info.org](http://www.fsc.info.org)

This certificate itself does not constitute evidence that a particular product supplied by the certificate holder is FSC-certified or FSC Controlled Wood. Products offered, shipped or sold by the certificate holder can only be considered covered by the scope of this certificate when the required FSC claim is clearly stated on invoices and shipping documents.

Accredited office and certification decision: Bureau Veritas Certification France 60, avenue du Général de Gaulle, 92046 Paris La Défense

[www.certification.bureauveritas.fr](http://www.certification.bureauveritas.fr)

FSC accredited FSC-ACC-010 © 1996 Forest Stewardship Council, A.C.

Management office: Bureau Veritas Certification China

A list of the products or services that are included in the scope of the certificate may be obtained on request to Bureau Veritas Certification

This certificate remains the property of Bureau Veritas Certification, all copies or reproductions and the certificate itself shall be returned or destroyed on Bureau Veritas request.

All certificates not in English are for reference only.

Internal ref: 6010076 - version 4.0 - Edition 1



# CERTIFICATE OF CONFORMITY

## UKTC

Certificate NO.TC 07/09020

**Applicant Address:** Guangde economic & technology development zone, Anhui Province, China

**Manufacturing Site:** Guangde economic & technology development zone, Anhui Province, China

**Product Name:** Wood Plastic Composites New Material

**Model No. :** XYJ01, XYJ02, XYJ03, XYJ04, XYJ05, XYJ06, XYJ08, STR01, STR02

### THE TEST REPORT

**Technical Construction File:** TR07092401

**Reference NO./Rev:**

**Codes/Standards Applied:** EN 13329:2000 EN 13986:2004

**Date of Issuance:** 27, Sep, 2007

### Remarks:

This Certificate is Only Valid For The Equipment And Configuration Described, And In Conjunction With The Test Data Detailed Above.

### Conclusion of Assessment:

We Hereby Confirm That the Technical Construction File and Manufacturing, Inspection And Testing processes For Above Mentioned Equipment Comply With The Essential Safety Requirements Of Construction Products Directive 89/106/EEC Applied Codes And Standards.

**Chief Assessor:**



UK Product Safety Test Center Limited  
Room B, 1/F; LA BLDG, 66 CORPORATION ROAD  
GRANGETOWN, CARDIFF, WALES, UK, CF11 1AW  
info@uktc-gov.org.uk



# Certificate of Environment Management System

Certificate No.: 10113E20131R0M

Registration Add: Economy & Technology Development Zone, Guangde City Anhui Province  
Office Add: Economy & Technology Development Zone, Guangde City  
Production Add: Economy & Technology Development Zone, Guangde City

*Beijing ZhongLianTianRun Certification Center(ZLTR) certify that the Environment Management System of the above organization has been assessed and found to be in accordance with the requirements of the standard:*  
GB/T24001-2004 / ISO14001: 2004

## SCOPE OF CERTIFICATION/REGISTRATION

the environmental management activities involved by Anhui Sentai WPC New Material Co., LTD's Wood Plastic Composite products producing and sales and place, which locates in Economy & Technology Development Zone, Guangde City

*Subject to operation conditions in requirements conformity with Environment Management System, This Certificate is valid for a period of three years only.*

**Date from: Jun 4th, 2013 To: Jun 3rd, 2016**

*The effectiveness of this Certificate shall be Validated by periodic surveillance audit of ZLTR for maintenance. This Certificate will not be in force unless qualified identification is stuck there under by ZLTR within appropriate time limit*

2014-05-21	Stuck	2015-05-21	Stuck
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Conditions on effectiveness of certificate see: <http://www.zltr.com.cn>



## Beijing Zhongliantianrun Certification Center

Room 2601, 2602, 2603, 26th Floor, 2nd Unit, Block 1, No.4 Yard, Qiming Road, Chaoyang District, Beijing, P.R. China 100102

ISO 14001

ISO 14001

### TEST REPORT

Report Reference No. ....: SH0808001-1R1  
Prepared by (name and signature) ..: Fred Bao *Fred*  
Approved by (name and signature) ...: Stanley Zhou *Stanley*  
Date of issue .....: August 29, 2008  
Contents .....: Total test report 5 pages including:  
Report text: 4 pages  
Appendix A for product photos: 1 page

**Testing Laboratory name** .....: Intertek Testing Services Building Products  
Address .....: Building T52-8, No.1201 Gui Qiao Road, Jinqiao Development Area, Pudong District, Shanghai, China  
Testing location .....: Same as above

**Applicant's name** .....: AHHUI SENTAI WPC NEW MATERIAL CO.,LTD  
Address .....: Guangde Economy & Technology Development Zone, Guangde County, Anhui Province, China

**Test specification:**

Standard .....: ASTM D2565 Cycle 1, ASTM D2244, ASTM D790, ASTM D638, ASTM D256, ASTM D6111, ASTM E228, ASTM D1037 Clause 7, RoHS Requirement 2002/95/EC AND AMMENDMENT 2005/618/EC  
Non-standard test method .....: N/A

**Test item description** .....: Wood-Plastic Decking Board  
Trade Mark .....: SENTAI WPC, Wear well  
Model and/or type reference .....: ST01A 595.2mmX31mm X146mm  
Manufacturer .....: AHHUI SENTAI WPC NEW MATERIAL CO.,LTD  
Rating(s) .....: —

**Summary of testing:**

The submitted samples were tested in accordance with specified standards, and listed the result accordingly, refer to text for detail.

<b>Test item particulars</b>	
Classification of installation and use .....	—
Supply Connection.....	—
<b>Possible test case verdicts</b>	
- Test case does not apply to the test object.....	N/A
- Test object does meet the requirement.....	P (Pass)
- Test object does not meet the requirement.....	F (Fail)
<b>Testing</b>	
Date of receipt of test item.....	July 17, 2008
Date (s) of performance of tests.....	August 11, 2008 – August 29, 2008
<b>General remarks:</b>	
<p>This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.</p> <p>Throughout this report a comma (point) is used as the decimal separator.</p> <p>When determining the test result, measurement uncertainty has been considered.</p>	

**General product information:**

Decking Board Nominal dimension: 595.2mm X 146 mm X 31mm;

According to the requirements of standards, some small pieces of decking boards were also available. The dimensions of the small pieces were 50mm X 12.5mm X 6.3mm and 63.5mm X 12.7mm X 12.7mm.

**Intertek Testing Services Building Products**

Building T52-8, No.1201 Gui Qiao Road, Jinqiao Development Area, Pudong District, Shanghai, China

Tel: 86-021-50319089 Fax: 86-021-3872000

[www.intertek-etlsemko.com](http://www.intertek-etlsemko.com)

Performance test			
Clause	Requirement - Test	Result - Remark	Verdict
Hardness	<p>ASTM D1037-06a, Clause 17</p> <p>The modified Janka-ball test method shall be used with a "ball" 0.444in. in diameter. The load shall be recorded when the "ball" has penetrated to one-half its diameter into the panel.</p> <p>The load shall be applied continuously throughout the test at a uniform rate of motion of the movable crosshead is 0.25 inch/minute.</p>	<p>Combined four single pieces (single thickness 6 mm) together; Place the ball on top surface; Average Maximum load: 7166N, with crack.</p>	No Verdict
Impact resistance	<p>ASTM D256-06a</p> <p>Used the 2.75J pendulum type hammers, mounted in Izod-type machine, in breaking standard specimens with one pendulum swing. Six standard specimens prepared in accordance with section 7.2; Sample width: 12.7mm; Sample depth under notch: 10.16mm; Test method: method C;</p>	<p>Failure categories: C completed break;</p> <p>Average notch impact resistance: 22.8J/m;</p> <p>Average estimated toss correction: 0.16J;</p> <p>Net impact resistance: 10.2J/m ;</p>	No Verdict
Bulk Density	<p>ASTM D6111-03</p> <p>The weight of sample in air: 4.81g; Overall weight of totally immersed sinker, cage, and partially immersed wire: 184.23g; Overall weight of specimen completely immersed and of the wire partially immersed in liquid: 182.87g;</p>	<p>Average density: <math>D^{23C} = 1.39 \text{ g/cm}^3</math></p>	No Verdict
Coefficient of Thermal Expansion	<p>ASTM E228-06</p> <p>Temperature from 25°C to 50°C; The original length: 50.56mm;</p>	<p>Average: <math>1.14 \times 10^{-5} \text{ m/m} \cdot ^\circ\text{C}</math></p>	No Verdict
Tensile Properties	<p>ASTM E638-03</p> <p>The thickness at the center of sample is 4mm; And the width at the center of sample is 6mm. The specimen is prepared in Type IV in accordance with Section 6.</p> <p>The speed of testing is 5mm/minute</p> <p>The tensile strength at break is reported.</p>	<p>Average Tensile Strength at Break: 21.6 MPa</p>	No Verdict

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Performance test			
Clause	Requirement - Test	Result - Remark	Verdict
Flexural Properties	<p>ASTM D790-07</p> <p>The depth of sample is 5.79mm. The width of sample is 24.32mm. The default radii of loading nose and support are (5.0±0.1) mm.</p> <p>The test utilizes the three-point loading system and the support span-to-depth ratio is 16:1.</p> <p>The rate of crosshead motion is calculated in accordance by Equation 1, Section 10.1.4.</p> <p>The flexural stress at break is reported.</p>	Average flexural stress at break is 38.2 MPa.	No Verdict
RoHS Requirement	<p>2002/95/EC AND AMMENDMENT 2005/618/EC</p> <p>Limits Content of Cadmium (Cd) is 100ppm;</p> <p>Limits Content of Lead (Pb) is 1000ppm;</p> <p>Limits Content of Mercury (Hg) is 1000ppm;</p> <p>Limits Content of Chromium (VI) (Cr<sup>6+</sup>) is 1000ppm;</p> <p>Limits Content of Polybrominated Biphenyls (PBBs) is 1000ppm;</p> <p>Limits Content of Polybrominated Diphenyl Ethers (PBDEs) is 1000ppm.</p>	<p>Cadmium (Cd) Content is ND, Reporting Limit is 2ppm;</p> <p>Lead Content (Pb) is 85ppm, Reporting Limit is 2ppm;</p> <p>Content of Mercury (Hg) is ND Reporting Limit is 2ppm;</p> <p>Chromium (VI) (Cr<sup>6+</sup>) Content is ND Reporting Limit is 1ppm;</p> <p>Polybrominated Biphenyls (PBBs) Content is ND Reporting Limit is 5ppm;</p> <p>Polybrominated Diphenyl Ethers (PBDEs) Content is 52ppm, Reporting Limit is 5ppm.</p>	P

Remarks:

ppm = Parts per Million = mg / kg

ND = Not Detected

\*\*\*\*\*End of Page\*\*\*\*\*

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# TEST REPORT

REPORT NUMBER: AU10034015-1  
ORIGINAL ISSUE DATE: March 26, 2010

## EVALUATION CENTER

Intertek Testing Services Ltd., Shanghai Jinqiao Branch  
Building T52-8, No. 1201 Gui Qiao Road,  
Jinqiao Development Area, Pudong District  
Shanghai 201206

## RENDERED TO

Anhui Sentai WPC New Material Co., Ltd  
Room 1201/1202, International Garden, 555 Binhe Road, Huzhou, Zhejiang

## PRODUCT EVALUATED

Wood/bamboo plastic composite

## EVALUATION PROPERTY

Weatherability

Report of Testing Wood/bamboo plastic composite compliance with the applicable requirements of the following criteria: ASTM D6662-09, *Standard Specification for Polyolefin-Based Plastic Lumber Decking Boards*

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## 2 Introduction

Intertek has conducted testing for Anhui Sentai WPC New Material Co., Ltd on wood/bamboo plastic composite to evaluate weatherability property. The testing was conducted in accordance with ASTM D6662-09. This evaluation began on December 31, 2009 and was completed on March 24, 2010

## 3 Test Samples

### 3.1. SAMPLE SELECTION

Samples were submitted to Intertek directly from the client. Samples were not independently selected for testing. Samples were received at the Evaluation Center on December 29, 2009.

### 3.2. SAMPLE AND ASSEMBLY DESCRIPTION

Model No.	Product description
ST02SB1	Wood/ bamboo plastic composite

## 4 Testing and Evaluation Methods

### 4.1. WEATHERABILITY

The test was conducted in accordance with ASTM D6662-09, Standard Specification for Polyolefin-Based Plastic Lumber Decking Boards, Section 6.3.1.

Specimens to be tested were exposed to the xenon arc light source with daylight filters. Use the following exposure conditions for a total period of 2000 hours continuous light, cycling between:  
2 hours light only

Irradiance:  $0.7 \pm 0.02 \text{ W}/(\text{m}^2 \cdot \text{nm}) @ 340 \text{ nm}$

Humidity:  $50 \pm 5\% \text{ R.H.}$

Uninsulated Black Panel Temperature:  $70 \pm 2.2^\circ \text{C}$

2 hours light with water spray (on the exposed surface)

Irradiance:  $0.7 \pm 0.02 \text{ W}/(\text{m}^2 \cdot \text{nm}) @ 340 \text{ nm}$

Humidity: Not applicable

Uninsulated Black Panel Temperature: Not applicable

After 2000 hours exposure, check the specimen surface appearance changes according to related standards. (The inspection standards were determined by the applicant.)

Effect	Standard
Color	ASTM D1729
Chalking	ASTM D4214
Checking	ASTM D660
Cracking	ASTM D661
Blistering	ASTM D714
Flaking	ASTM D772

## 5 Testing and Evaluation Results

### 5.1. RESULTS AND OBSERVATIONS

The test results are shown in the table below.

**Test Results**

Sample	Test time	Result	Requirement
ST02SB1	250 hours	Color Change: #9 rating, Darkening Chalking: #10 rating Checking: #10 rating Cracking: #10 rating Blistering: #10 rating Flaking: #10 rating	Color Change: Minimum #6 Moderate effect Chalking: Minimum #10 rating No effect Checking: Minimum #10 rating No effect Cracking: Minimum #10 rating No effect
	500 hours	Color Change: #9 rating, Darkening Chalking: #10 rating Checking: #10 rating Cracking: #10 rating Blistering: #10 rating Flaking: #10 rating	Blistering: Minimum #10 rating No effect Flaking: Minimum #10 rating No effect
	1000 hours	Color Change: #8 rating, slight fading. Chalking: #10 rating Checking: #10 rating Cracking: #10 rating Blistering: #10 rating Flaking: #10 rating	
	1500 hours	Color Change: #6 rating, moderate fading. Chalking: #10 rating Checking: #10 rating Cracking: #10 rating Blistering: #10 rating Flaking: #10 rating	
	2000 hours	Color Change: #6 rating, moderate fading. Chalking: #10 rating Checking: #10 rating Cracking: #10 rating Blistering: #10 rating Flaking: #10 rating	

**Note:**

1. The requirements were determined by the applicant.

#### 5.1.1. Statement of Measurement Uncertainty

When determining the test result, measurement uncertainty has been considered.

## 6 Conclusion

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The product identified and evaluated in this report has been tested to requirements of Weatherability Test according to ASTM D6662-09. The results were presented in Section 5 of this test report.

The conclusions of this test report may not be used as part of the requirements for Intertek product certification. Authority to Mark must be issued for a product to become certified.

### INTERTEK

Reported by:

*Alex*

Alex Gu

Testing Engineer, Building Products

Reviewed by:

*Jodie*

Jodie Zhou

Engineer, Building Products

**Test Report**

Report Number:140730002SHJ-BP-1

**Applicant Name:** Anhui Sentai WPC New Material Co., Ltd  
**Applicant Address:** Guangde Economic & Technological  
development zone, Guangde County 242237, Anhui, China  
**Attn:** Jonathan

**Original Report Date:** August 13, 2014**Sample Description:**

Product: WPC DECKS  
Model: 24mm  
Samples Quantity: 1 piece  
Sample ID: S140730002SHJ-001  
Date Received: 2014-07-29  
Date Test Conducted: 2014-07-30~2014-08-13

**Tests Conducted:**

Test Methods: Please see next page(s) for details

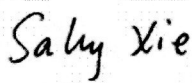
**Conclusion:**

For details refer to attached page(s).  
The conclusions of this test report may not be used as part of the requirements for Intertek product certification.  
Authority to Mark must be issued for a product to become certified.

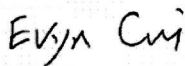
Should you have any queries about the test report, please contact:

**Approved by:**      **Checked by:**      **Prepared by:**

Sun Sun  
Assistant Manager



Sally Xie  
Technical supervisor



Eryn Cui  
Assistant Engineer

## Test Report

Report Number:140730002SHJ-BP-1

(b)The Second List (13 SVHC Released in Jan, 2010 and Mar, 2010)

<u>Chemical Substance</u>	<u>CAS No.</u>	<u>Results % (w/w)</u> <u>Per whole product</u>
Lead Chromate *	7758-97-6	< 0.05
Lead Chromate Molybdate Sulphate Red (C.I. Pigment Red 104) *	12656-85-8	< 0.05
Lead Sulfochromate Yellow (C.I. Pigment Yellow 34) *	1344-37-2	< 0.05
Tris (2-Chloroethyl) Phosphate	115-96-8	< 0.05
2,4-Dinitrotoluene	121-14-2	< 0.05
Diisobutyl Phthalate (DIBP)	84-69-5	< 0.05
Coal Tar Pitch, High Temperature	65996-93-2	< 0.05
Anthracene Oil	90640-80-5	< 0.05
Anthracene Oil, Anthracene Paste, Distn. Lights	91995-17-4	< 0.05
Anthracene Oil, Anthracene Paste, Anthracene Fraction	91995-15-2	< 0.05
Anthracene Oil, Anthracene-low	90640-82-7	< 0.05
Anthracene Oil, Anthracene Paste	90640-81-6	< 0.05
Acrylamide	79-06-1	< 0.05

## Test Report

Report Number:140730002SHJ-BP-1

## (c) The Third List (8 SVHC Released in Jun, 2010)

<u>Chemical Substance</u>	<u>CAS No.</u>	<u>Results % (w/w)</u> <u>Per whole product</u>
Boric Acid *	10043-35-3, 11113-50-1	< 0.05
Disodium Tetraborate, Anhydrous *	1330-43-4, 12179-04-3, 1303-96-4	< 0.05
Tetraboron Disodium Heptaoxide, Hydrate *	12267-73-1	< 0.05
Sodium Chromate *	7775-11-3	< 0.05
Potassium Chromate *	7789-00-6	< 0.05
Ammonium Dichromate *	7789-09-5	< 0.05
Potassium Dichromate *	7778-50-9	< 0.05
Trichloroethylene	79-01-6	< 0.05

## (d)The Fourth List (8 SVHC Release in Dec,2010)

<u>Chemical Substance</u>	<u>CAS No.</u>	<u>Results % (w/w)</u> <u>Per whole product</u>
2-Methoxyethanol	109-86-4	< 0.05
2-Ethoxyethanol	110-80-5	< 0.05
Cobalt Sulphate *	10124-43-3	< 0.05
Cobalt Dinitrate *	10141-05-6	< 0.05
Cobalt Carbonate *	513-79-1	< 0.05
Cobalt Diacetate *	71-48-7	< 0.05
Chromium Trioxide *	1333-82-0	< 0.05
Chromic Acid *	7738-94-5	< 0.05
Dichromic Acid *	13530-68-2	
Oligomers of Chromic Acid and Dichromic Acid *	--	



## Test Report

Report Number:140730002SHJ-BP-1

## (e)The Fifth List (7 SVHC Released in Jun, 2011)

<u>Chemical Substance</u>	<u>CAS No.</u>	<u>Results % (w/w)</u> <u>Per whole product</u>
Strontium Chromate*	7789-06-2	< 0.05
2-ethoxyethyl acetate (2-EEA)	111-15-9	< 0.05
1,2-Benzenedicarboxylic acid, di-C <sub>7-11</sub> - branched and linear alkyl esters (DHNUP)	68515-42-4	< 0.05
Hydrazine	7803-57-8 302-01-2	< 0.05
1-methyl-2-pyrrolidone	872-50-4	< 0.05
1,2,3-trichloropropane	96-18-4	< 0.05
1,2-Benzenedicarboxylic acid, di-C <sub>6-8</sub> - branched alkyl esters, C <sub>7</sub> -rich (DIHP)	71888-89-6	< 0.05

## (f)The Sixth List (20 SVHC Released in Dec, 2011)

<u>Chemical Substance</u>	<u>CAS No.</u>	<u>Results % (w/w)</u> <u>Per whole product</u>
Lead dipicrate*	6477-64-1	< 0.05
Lead styphnate*	15245-44-0	< 0.05
Lead azide; Lead diazide*	13424-46-9	< 0.05
Phenolphthalein	77-09-8	< 0.05
2,2'-dichloro-4,4'-methylenedianiline (MOCA)	101-14-4	< 0.05
N,N-dimethylacetamide (DMAC)	127-19-5	< 0.05
Trilead diarsenate*	3687-31-8	< 0.05
Calcium arsenate*	7778-44-1	< 0.05
Arsenic acid*	7778-39-4	< 0.05
Bis(2-methoxyethyl) ether	111-96-6	< 0.05
1,2-Dichloroethane	107-06-2	< 0.05
4-(1,1,3,3-tetramethylbutyl)phenol, (4-tert- Octylphenol)	140-66-9	< 0.05

## Test Report

Report Number:140730002SHJ-BP-1

<u>Chemical Substance</u>	<u>CAS No.</u>	<u>Results % (w/w)</u> <u>Per whole product</u>
2-Methoxyaniline; o-Anisidine	90-04-0	< 0.05
Bis(2-methoxyethyl) phthalate (DMEP)	117-82-8	< 0.05
Formaldehyde, oligomeric reaction products with aniline (technical MDA)	25214-70-4	< 0.05
Pentazinc chromate octahydroxide*	49663-84-5	< 0.05
Potassium hydroxyoctaoxodizincate dichromate*	11103-86-9	< 0.05
Dichromium tris(chromate)*	24613-89-6	< 0.05
Aluminosilicate Refractory Ceramic Fibres *	(Index No. 650-017-00-8)	< 0.05
Zirconia Aluminosilicate Refractory Ceramic Fibres *	(Index No. 650-017-00-8)	< 0.05

## (g)The Seventh List (13 SVHC Released in Jun, 2012)

<u>Chemical Substance</u>	<u>CAS No.</u>	<u>Results % (w/w)</u> <u>Per whole product</u>
1,2-bis(2-methoxyethoxy)ethane (TEGDME; triglyme)	112-49-2	< 0.05
1,2-dimethoxyethane; ethylene glycol dimethyl ether (EGDME)	110-71-4	< 0.05
Diboron trioxide*	1303-86-2	< 0.05
Formamide	75-12-7	< 0.05
Lead(II) bis(methanesulfonate) *	17570-76-2	< 0.05
TGIC (1,3,5-tris(oxiranylmethyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione)	2451-62-9	< 0.05
$\beta$ -TGIC (1,3,5-tris[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione)	59653-74-6	< 0.05
4,4'-bis(dimethylamino)benzophenone (Michler's ketone)	90-94-8	< 0.05

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Chemical Substance	CAS No.	Results % (w/w) Per whole product
N,N,N',N'-tetramethyl-4,4'-methylenedianiline (Michler's base)	101-61-1	< 0.05
[4-[4,4'-bis(dimethylamino) benzhydrylidene]cyclohexa-2,5-dien-1- ylidene]dimethylammonium chloride (C.I. Basic Violet 3) <i>ketone</i> (EC No. 202	548-62-9	< 0.05
[4-[[4-anilino-1-naphthyl][4- (dimethylamino)phenyl]methylene]cyclohexa -2,5-dien-1-ylidene] dimethylammonium chloride (C.I. Basic Blue 26) <i>of Michler's ketone (EC No. 2</i> <i>Michler's base (EC No. 202</i>	2580-56-5	< 0.05
$\alpha,\alpha$ -Bis[4-(dimethylamino)phenyl]-4 (phenylamino)naphthalene-1-methanol (C.I. Solvent Blue 4) [ <i>with <math>\geq 0.1\%</math> of Michler's</i> <i>ketone (EC No. 202-</i> er's base (EC No. 202-959-2)]	6786-83-0	< 0.05
4,4'-bis(dimethylamino)-4''- (methylamino)trityl alcohol <i>Michler's ketone (EC No. 202</i> <i>Michler's base (EC No. 202-</i>	561-41-1	< 0.05

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(h)The Eighth List (54 SVHC Released in Dec, 2012)

<u>Chemical Substance</u>	<u>CAS No.</u>	<u>Results % (w/w)</u> <u>Per whole product</u>
Bis(pentabromophenyl) ether (decabromodiphenyl ether; DecaBDE)	1163-19-5	< 0.05
Pentacosafuorotridecanoic acid	72629-94-8	< 0.05
Tricosafuorododecanoic acid	307-55-1	< 0.05
Henicosafuoroundecanoic acid	2058-94-8	< 0.05
Heptacosafuorotetradecanoic acid	376-06-7	< 0.05
Diazene-1,2-dicarboxamide (C,C'- azodi(formamide))	123-77-3	< 0.05
Cyclohexane-1,2-dicarboxylic anhydride [1] cis-cyclohexane-1,2-dicarboxylic anhydride [2] trans-cyclohexane-1,2-dicarboxylic anhydride [3] [The individual cis- [2] and trans- [3] isomer substances and all possible combinations of the cis- and trans-isomers [1] are covered by this entry].	85-42-7 13149-00-3 14166-21-3	< 0.05
Hexahydromethylphthalic anhydride [1], Hexahydro-4-methylphthalic anhydride [2], Hexahydro-1-methylphthalic anhydride [3], Hexahydro-3-methylphthalic anhydride [4] [The individual isomers [2], [3] and [4] (including their cis- and trans- stereo isomeric forms) and all possible combinations of the isomers [1] are covered by this entry]	25550-51-0 19438-60-9 48122-14-1 57110-29-9	< 0.05
4-Nonylphenol, branched and linear [substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, covering also UVCB- and well-defined substances which include any of the individual isomers or a combination thereof]	--	< 0.05

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<u>Chemical Substance</u>	<u>CAS No.</u>	<u>Results % (w/w)</u> <u>Per whole product</u>
4-(1,1,3,3-tetramethylbutyl)phenol, ethoxylated [covering well-defined substances and UVCB substances, polymers and homologues]	--	< 0.05
Methoxyacetic acid	625-45-6	< 0.05
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear	84777-06-0	< 0.05
Diisopentylphthalate (DIPP)	605-50-5	< 0.05
N-pentyl-isopentylphthalate	776297-69-9	< 0.05
1,2-diethoxyethane	629-14-1	< 0.05
N,N-dimethylformamide	68-12-2	< 0.05
Dibutyltin dichloride (DBTC) *	683-18-1	< 0.05
Lead monoxide (Lead oxide) *	1317-36-8	< 0.05
Orange lead (Lead tetroxide) *	1314-41-6	< 0.05
Lead bis(tetrafluoroborate) *	13814-96-5	< 0.05
Trilead bis(carbonate)dihydroxide *	1319-46-6	< 0.05
Lead titanium trioxide*	12060-00-3	< 0.05
Lead titanium zirconium oxide*	12626-81-2	< 0.05
Silicic acid, lead salt *	11120-22-2	< 0.05
Silicic acid (H <sub>2</sub> SiO <sub>5</sub> ), barium salt (1:1), lead- doped* [with lead (Pb) content above the applicable generic concentration limit for 'toxicity for reproduction' Repr. 1A (CLP) or category 1 (DSD); the substance is a member of the group entry of lead compounds, with index number 082-001-00-6 in Regulation (EC) No 1272/2008]	68784-75-8	< 0.05
Acetic acid, lead salt, basic*	51404-69-4	< 0.05
Lead oxide sulfate*	12036-76-9	< 0.05

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<u>Chemical Substance</u>	<u>CAS No.</u>	<u>Results % (w/w)</u> <u>Per whole product</u>
[Phthalato(2-)] dioxotrilead*	69011-06-9	< 0.05
Dioxobis(stearato)trilead*	12578-12-0	< 0.05
Fatty acids, C16-18, lead salts*	91031-62-8	< 0.05
Lead cyanimidate*	20837-86-9	< 0.05
Lead dinitrate*	10099-74-8	< 0.05
Pentalead tetraoxide sulphate*	12065-90-6	< 0.05
Pyrochlore, antimony lead yellow*	8012-00-8	< 0.05
Sulfurous acid, lead salt, dibasic*	62229-08-7	< 0.05
Tetraethyllead*	78-00-2	< 0.05
Tetralead trioxide sulphate*	12202-17-4	< 0.05
Trilead dioxide phosphonate*	12141-20-7	< 0.05
Furan	110-00-9	< 0.05
Methyloxirane (Propylene oxide)	75-56-9	< 0.05
Diethyl sulphate	64-67-5	< 0.05
Dimethyl sulphate	77-78-1	< 0.05
3-ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	143860-04-2	< 0.05
Dinoseb (6-sec-butyl-2,4-dinitrophenol)	88-85-7	< 0.05
4,4'-methylenedi-o-toluidine	838-88-0	< 0.05
4,4'-oxydianiline and its salts	101-80-4	< 0.05
4-aminoazobenzene	60-09-3	< 0.05
4-methyl-m-phenylenediamine (toluene-2,4-diamine)	95-80-7	< 0.05
6-methoxy-m-toluidine (p-cresidine)	120-71-8	< 0.05
Biphenyl-4-ylamine	92-67-1	< 0.05
o-aminoazotoluene [(4-o-tolylazo-o-toluidine)]	97-56-3	< 0.05

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<u>Chemical Substance</u>	<u>CAS No.</u>	<u>Results % (w/w)</u> <u>Per whole product</u>
o-toluidine	95-53-4	< 0.05
N-methylacetamide	79-16-3	< 0.05
1-bromopropane (n-propyl bromide)	106-94-5	< 0.05

(i)The ninth List (6 SVHC Release in Jun, 2013)

<u>Chemical Substance</u>	<u>CAS No.</u>	<u>Results % (w/w)</u> <u>Per whole product</u>
Cadmium*	7440-43-9	< 0.05
Cadmium oxide*	1306-19-0	< 0.05
Dipentyl phthalate (DPP)	131-18-0	< 0.05
4-Nonylphenol, branched and linear, ethoxylated <i>[substances with a linear and/or branched alkyl chain with a carbon number of 9 covalently bound in position 4 to phenol, ethoxylated covering defined substances, polymers and homologues, which include any of the individual isomers and/or thereof]</i>	--	< 0.05
Ammonium pentadecafluorooctanoate (APFO)	3825-26-1	< 0.05
Pentadecafluorooctanoic acid (PFOA)	335-67-1	< 0.05

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REACH requirement: As per Article 33(1) of the REACH Regulation (EC1907/2006), recipients of product must be provided with information of safe use if any of the tested substances (SVHC) exceeded 0.1% (w/w). A product meets the requirement of Article 33(1) by default when no SVHC exceeds 0.1%(w/w).

Conclusion: The submitted sample set meets the above requirement.

## 2. Test result of RoHS Directive 2011/65/EU

Test item	Test method	Result (mg/kg)	Report Limit (mg/kg)	Limits (mg/kg)
Cadmium (Cd)	With reference to IEC 62321-5 Edition 1.0:2013, by acid digestion until the tested sample was totally dissolved, and determined by ICP-OES.	ND	2	100
Lead (Pb)	With reference to IEC 62321-5 Edition 1.0:2013, by acid digestion until the tested sample was totally dissolved, and determined by ICP-OES.	ND	2	1000
Mercury (Hg)	With reference to IEC 62321-4 Edition 1.0:2013, by acid digestion until the tested sample was totally dissolved, and determined by ICP-OES.	ND	2	1000
Chromium (VI) (Cr <sup>6+</sup> )	With reference to IEC 62321 Edition 1.0:2008, by alkaline digestion and determined by UV-VIS Spectrophotometer.	ND	1	1000
Polybrominated biphenyls (PBBs)	With reference to IEC 62321 Edition 1.0: 2008, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary.	ND	5	1000
Polybrominated diphenyl ethers (PBDEs)	With reference to IEC 62321 Edition 1.0: 2008, by solvent extraction and determined by GC/MS and further HPLC confirmation when necessary.	ND	5	1000

Remark: ND = Not Detected

mg/kg = Milligram per kilogram

The above limits were quoted from RoHS Directive 2011/65/EU for homogeneous material.