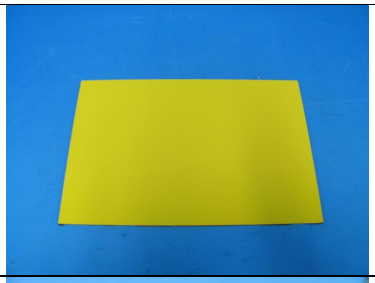
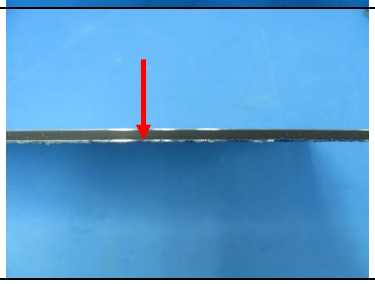
Choose certainty.
Add value.

**Technical Report No. 64.160.10.1023.01B**
**Rev. 00**
**Dated 2010-11-16**

| | |
|---|---|
| Client: | Jiangyin PIVOT Decorative Materials Co., Ltd<br>PIVOT Industrial Park, 9th Huaxi Village, Huashi, Jiangyin, Jiangsu. China |
| Test Subject: | The submitted sample was identified and described by client as:<br>Aluminium composite panel |
| Test Requested: | **REACH**<br>Registration, Evaluation, Authorisation and restriction of Chemicals (REACH)<br>EC No. 1907/2006<br>1.15 Substances of Very High Concern (SVHC) analysis based on the Candidate List published by the European Chemical Agency (ECHA) on October 28,2008.<br><br>2. 14 Substances of Very High Concern (SVHC) analysis based on the Candidate List published by the European Chemical Agency (ECHA) on 13 January 2010.<br><br>3. 1 Substance of Very High Concern (SVHC) analysis based on the Candidate List published by the European Chemical Agency (ECHA) on 30 March 2010.<br><br>4. 8 Substances of Very High Concern (SVHC) analysis based on the Candidate List published by the European Chemical Agency (ECHA) on 18 June 2010.<br><br>- Analysis based on LCMS, GCMS, GCECD, Headspace-GCMS, ICP-OES/AAS, UV-VIS, XRF and HPLC-DAD. |
| Test Result: | Please refer to next page(s) |
| Remark: | The result relates only to the items tested.<br>Samples are tested as received. |

## 1 Description of the test subject

| Sample No. | Color and description | Photograph |
|---|---|---|
| 001 | Silvery metal with yellow coating |  |
| *002 | Black plastic between two metal sheet |  |

Remark: * means the sample 002 was provided by client on 2010-09-19.

## 2 Order

### 2.1 Date of Purchase Order

2010-11-04

### 2.2 Receipt of Test Sample, Location

2010-11-04 Guangzhou

### 2.3 Date of Testing

2010-11-04 to 2010-11-16

### 2.4 Location of Testing

The testing was performed in TÜV SÜD Hong Kong Ltd. Chemical lab and the test results were reviewed at Jiangsu TÜV Product Service Ltd. Guangzhou Branch.

## 3 38 Items SVHC Test Results

### 3.1 15 Items SVHC Test Results

Analysis of the 15 substances of very high concern (SVHC) on the Candidate List for authorization, concerning Regulation (EC) No 1907/2006 as published on the European Chemicals Agency (ECHA) website in October 2008.
Analysis based on LCMS, GCMS, GCECD, Headspace-GCMS, ICP-OES/AAS, UV-VIS and XRF.

| Test Item | CAS | SVHC classification | Result (%) | Reporting Limit (%) |
|---|---|---|---|---|
| | | | 001 | |
| Anthracene | 120-12-7 | PBT | N.D. | 0.005 |
| 4,4'-Diaminodiphenylmethane | 101-77-9 | Carcinogen Cat.2 | N.D. | 0.005 |
| Dibutyl phthalate | 84-74-2 | Toxic to Reproduction Cat. 2 | N.D. | 0.005 |
| Cobalt dichloride * | 7646-79-9 | Carcinogen Cat.2 | N.D. | 0.010 |
| Diarsenic pentaoxide * | 1303-28-2 | Carcinogen Cat.1 | N.D. | 0.010 |
| Diarsenic trioxide * | 1327-53-3 | Carcinogen Cat.1 | N.D. | 0.010 |
| Sodium dichromate * | 7789-12-0 10588-01-9 | Carcinogen Cat.2; Mutagen Cat.2;Toxic to Reproduction Cat. 2 | N.D. | 0.010 |
| 5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene) | 81-15-2 | vPvB | N.D. | 0.005 |
| Bis (2-ethyl(hexyl)phthalate) (DEHP) | 117-81-7 | Toxic to Reproduction Cat. 2 | N.D. | 0.005 |
| Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α – HBCDD, β-HBCDD, γ-HBCDD) | 25637-99-4 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8) | PBT | N.D. | 0.005 |
| Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) | 85535-84-8 | PBT; vPvB | N.D. | 0.010 |
| Bis(tributyltin)oxide * | 56-35-9 | PBT | N.D. | 0.010 |
| Lead hydrogen arsenate * | 7784-40-9 | Carcinogen Cat.1; Toxic to Reproduction Cat.1 | N.D. | 0.010 |
| Benzyl butyl phthalate | 85-68-7 | Toxic to Reproduction Cat.2 | N.D. | 0.005 |
| Triethyl arsenate * | 15606-95-8 | Carcinogen Cat.1 | N.D. | 0.010 |

| Test Item | CAS | SVHC classification | Result (%) | Reporting Limit (%) |
|---|---|---|---|---|
| | | | 002 | |
| Anthracene | 120-12-7 | PBT | N.D. | 0.005 |
| 4,4'-Diaminodiphenylmethane | 101-77-9 | Carcinogen Cat.2 | N.D. | 0.005 |
| Dibutyl phthalate | 84-74-2 | Toxic to Reproduction Cat. 2 | N.D. | 0.005 |
| Cobalt dichloride * | 7646-79-9 | Carcinogen Cat.2 | N.D. | 0.010 |
| Diarsenic pentaoxide * | 1303-28-2 | Carcinogen Cat.1 | N.D. | 0.010 |
| Diarsenic trioxide * | 1327-53-3 | Carcinogen Cat.1 | N.D. | 0.010 |
| Sodium dichromate * | 7789-12-0 10588-01-9 | Carcinogen Cat.2; Mutagen Cat.2;Toxic to Reproduction Cat. 2 | N.D. | 0.010 |
| 5-tert-butyl-2,4,6-trinitro-m-xylene (musk xylene) | 81-15-2 | vPvB | N.D. | 0.005 |
| Bis (2-ethyl(hexyl)phthalate) (DEHP) | 117-81-7 | Toxic to Reproduction Cat. 2 | 0.022 | 0.005 |
| Hexabromocyclododecane (HBCDD) and all major diastereoisomers identified (α – HBCDD, β-HBCDD, γ-HBCDD) | 25637-99-4 3194-55-6 (134237-51-7, 134237-50-6, 134237-52-8) | PBT | N.D. | 0.005 |
| Alkanes, C10-13, chloro (Short Chain Chlorinated Paraffins) | 85535-84-8 | PBT; vPvB | N.D. | 0.010 |
| Bis(tributyltin)oxide * | 56-35-9 | PBT | N.D. | 0.010 |
| Lead hydrogen arsenate * | 7784-40-9 | Carcinogen Cat.1; Toxic to Reproduction Cat.1 | N.D. | 0.010 |
| Benzyl butyl phthalate | 85-68-7 | Toxic to Reproduction Cat.2 | N.D. | 0.005 |
| Triethyl arsenate * | 15606-95-8 | Carcinogen Cat.1 | N.D. | 0.010 |

### 3.2 14 Items SVHC Test Results

Analysis of the 14 substances of very high concern (SVHC) on the Candidate List for authorization, concerning Regulation (EC) No 1907/2006 as published on the European Chemicals Agency (ECHA) website in January 2010.
Analysis based on GCMS, ICP- OES/AAS, and HPLC-DAD.

| Test Item | CAS | SVHC classification | Result (%) | Reporting Limit (%) |
|---|---|---|---|---|
| | | | 001 | |
| 2,4-Dinitrotoluene | 121-14-2 | Carcinogen Cat.2 | N.D. | 0.005 |
| Diisobutyl phthalate | 84-69-5 | Toxic to Reproduction Cat. 2 | N.D. | 0.005 |
| Tris(2chloroethyl) phosphate | 115-96-8 | Toxic to Reproduction Cat. 2 | N.D. | 0.005 |
| Anthracene oil^ | 90640-80-5 | PBT | N.D. | 0.010 |
| Anthracene oil, anthracene paste; distn. Lights^ | 91995-17-4 | PBT | | |
| Anthracene oil, anthracene paste, anthracene fraction^ | 91995-15-2 | PBT | | |
| Anthracene oil, anthracene-low^ | 90640-82-7 | PBT | | |
| Anthracene oil, anthracene paste^ | 90640-81-6 | PBT | | |
| Coal tar pitch, high temperature^ | 65996-93-2 | PBT | N.D. | 0.010 |
| Aluminosilicate Refractory Ceramic Fibres* | 650-017-00-8 (Index no.) | Carcinogen Cat.2 | N.D. | 0.010 |
| Zirconia Aluminosilicate Refractory Ceremic Fibres* | 650-017-00-8 (Index no.) | Carcinogen Cat.2 | N.D. | 0.010 |
| Lead sulfochromate yellow (C.I. Pigment Yellow 34)* | 1344-37-2 | Carcinogen Cat.2; Toxic to Reproduction Cat.1 | N.D. | 0.010 |
| Lead chromate molybdate sulfate red (C.I. Pigment Red 104)* | 12656-85-8 | Carcinogen Cat.2; Toxic to Reproduction Cat.1 | N.D. | 0.010 |
| Lead chromate* | 7758-97-6 | Carcinogen Cat.2; Toxic to Reproduction Cat.1 | N.D. | 0.010 |

| Test Item | CAS | SVHC classification | Result (%) | Reporting Limit (%) |
|---|---|---|---|---|
| | | | 002 | |
| 2,4-Dinitrotoluene | 121-14-2 | Carcinogen Cat.2 | N.D. | 0.005 |
| Diisobutyl phthalate | 84-69-5 | Toxic to Reproduction Cat. 2 | N.D. | 0.005 |
| Tris(2chloroethyl) phosphate | 115-96-8 | Toxic to Reproduction Cat. 2 | N.D. | 0.005 |
| Anthracene oil^ | 90640-80-5 | PBT | N.D. | 0.010 |
| Anthracene oil, anthracene paste; distn. Lights^ | 91995-17-4 | PBT | | |
| Anthracene oil, anthracene paste, anthracene fraction^ | 91995-15-2 | PBT | | |
| Anthracene oil, anthracene-low^ | 90640-82-7 | PBT | | |
| Anthracene oil, anthracene paste^ | 90640-81-6 | PBT | | |
| Coal tar pitch, high temperature^ | 65996-93-2 | PBT | N.D. | 0.010 |
| Aluminosilicate Refractory Ceramic Fibres* | 650-017-00-8 (Index no.) | Carcinogen Cat.2 | N.D. | 0.010 |
| Zirconia Aluminosilicate Refractory Ceremic Fibres* | 650-017-00-8 (Index no.) | Carcinogen Cat.2 | N.D. | 0.010 |
| Lead sulfochromate yellow (C.I. Pigment Yellow 34)* | 1344-37-2 | Carcinogen Cat.2; Toxic to Reproduction Cat.1 | N.D. | 0.010 |
| Lead chromate molybdate sulfate red (C.I. Pigment Red 104)* | 12656-85-8 | Carcinogen Cat.2; Toxic to Reproduction Cat.1 | N.D. | 0.010 |
| Lead chromate* | 7758-97-6 | Carcinogen Cat.2; Toxic to Reproduction Cat.1 | N.D. | 0.010 |

### 3.3 1 Item SVHC Test Result

Analysis of the 1 substance of very high concern (SVHC) on the Candidate List for authorization, concerning Regulation (EC) No 1907/2006 as published on the European Chemicals Agency (ECHA) website in March 2010.
Analysis based on LCMS.

| Test Item | CAS | SVHC classification | Result (%) | Reporting Limit (%) |
|---|---|---|---|---|
| | | | 001 | |
| Acrylamide | 79-06-1 | Carcinogen, Cat.2; Mutagen, category 2 | N.D. | 0.010 |

| Test Item | CAS | SVHC classification | Result (%) | Reporting Limit (%) |
|---|---|---|---|---|
| | | | 002 | |
| Acrylamide | 79-06-1 | Carcinogen, Cat.2; Mutagen, category 2 | N.D. | 0.010 |

### 3. 4 8 Item SVHC Test Results

Analysis of the 8 substances of very high concern (SVHC) on the Candidate List for authorization, concerning Regulation (EC) No 1907/2006 as published on the European Chemicals Agency (ECHA) website in June 2010.
Analysis based on GCMS, ICP- OES/AAS and UV-VIS.

| Test Item | CAS | SVHC classification | Result (%) | Reporting Limit (%) |
|---|---|---|---|---|
| | | | 001 | |
| Trichloroethylene | 79-01-6 | Carcinogen, Cat.2; | N.D. | 0.005 |
| Boric acid * | 10043-35-3<br>11113-50-1 | Toxic for reproduction Cat.2 | N.D. | 0.010 |
| Disodium tetraborate, anhydrous (also include the pentahydrate and decahydrate salts) * | 1330-43-4<br>12179-04-3<br>1303-96-4 | Toxic for reproduction Cat.2 | N.D. | 0.010 |
| Tetraboron disodium heptaoxide, hydrate * | 12267-73-1 | Toxic for reproduction Cat.2 | N.D. | 0.010 |
| Sodium chromate * | 7775-11-3 | Carcinogenic Cat.2; Mutagenic Cat.2; Toxic for Reproduction Cat.2 | N.D. | 0.010 |
| Potassium chromate * | 7789-00-6 | Carcinogenic Cat.2; Mutagenic Cat.2 | N.D. | 0.010 |
| Ammonium dichromate * | 7789-09-5 | Carcinogenic Cat.2; Mutagenic Cat.2; Toxic for Reproduction Cat.2 | N.D. | 0.010 |
| Potassium dichromate * | 7778-50-9 | Carcinogenic Cat.2; Mutagenic Cat.2; Toxic for Reproduc-tion Cat.2 | N.D. | 0.010 |

| Test Item | CAS | SVHC classification | Result (%) | Reporting Limit (%) |
|---|---|---|---|---|
| | | | 002 | |
| Trichloroethylene | 79-01-6 | Carcinogen, Cat.2; | N.D. | 0.005 |
| Boric acid * | 10043-35-3<br>11113-50-1 | Toxic for reproduction Cat.2 | N.D. | 0.010 |
| Disodium tetraborate, anhydrous (also include the pentahydrate and decahydrate salts) * | 1330-43-4<br>12179-04-3<br>1303-96-4 | Toxic for reproduction Cat.2 | N.D. | 0.010 |
| Tetraboron disodium heptaoxide, hydrate * | 12267-73-1 | Toxic for reproduction Cat.2 | N.D. | 0.010 |
| Sodium chromate * | 7775-11-3 | Carcinogenic Cat.2; Mutagenic Cat.2; Toxic for Reproduction Cat.2 | N.D. | 0.010 |
| Potassium chromate * | 7789-00-6 | Carcinogenic Cat.2; Mutagenic Cat.2 | N.D. | 0.010 |
| Ammonium dichromate * | 7789-09-5 | Carcinogenic Cat.2; Mutagenic Cat.2; Toxic for Reproduction Cat.2 | N.D. | 0.010 |
| Potassium dichromate * | 7778-50-9 | Carcinogenic Cat.2; Mutagenic Cat.2; Toxic for Reproduc-tion Cat.2 | N.D. | 0.010 |

Note:

1) * means:
Calculated concentration of cobalt dichloride is based on the identified cobalt by ICP-OES or the identified chloride by IC method.

Calculated concentration of bis(tributyltin)oxide TBTO is based on the identified tin by ICP-OES and TLC

Calculated concentration of diarsenic pentaoxide, diarsenic trioxide , lead hydrogen arsenate, triethyl arsenate and sodium dichromate are based on the identified element result (i.e. Arsenic, Lead, Hexavalent Chromium respectively).

Calculated concentration of Aluminosilicate Refractory Ceramic Fibres, Zirconia Aluminosilicate Refractory Ceremic Fibres , Lead sulfochromate yellow (C.I. Pigment Yellow 34) and Lead chromate are based on the identified element result (i.e. lead, chromium, silicon, aluminum and zirconium respectively).

Calculated concentration of Boric acid, Disodium tetraborate,anhydrous (also include the pentahydrate and decahydrate salts), Tetraboron disodium heptaoxide, hydrate, Sodium chromate, Potassium chromate, Ammonium dichromate and Potassium dichromate are based on the identified element result (i.e. boron, sodium, hexavalent Chromium respectively).

Reporting limit is evaluated for element ( i.e. lead ,cobalt, arsenic, hexavalent chromium, chromium, silicon, aluminum and zirconium )

Identity of the metal substances present in the article has to be further confirmed.

2) ^ means:
The SVHC consists of a diverse combination of chemical compounds fulfilling the definition of UVCB (substances of Unknown or Variable composition, Complex reaction products or Biological materials) under REACH regulation. Test result is calculated as per selected identifiers of the SVHC. The values are determined based on a reference anthracene oil and coal tar. Calculation is based on the worst-case scenario. Due to the UVCB nature the reported values may be regarded as semi-quantitative.
3) N.D. = Not detected (lower than reporting limit).
4) % means percentage by weight.
5) All reporting limit is based on homogenous material.

## 4 Remark

4.1 Definition of classification is listed in Annex 01 of this report in accordance with Directive 67/548/EEC Regulation (EC) No 1907/2006.

4.2 In accordance with Regulation (EC) No 1907/2006, any producer or importer of articles shall notify the European Chemicals Agency (ECHA), in accordance with Article 59(1) of the Regulation if :

- the substance is present in those articles in quantities totaling over one tone per producer or importer per year;
- the substance is present in those articles above a concentration of 0.1% weight by weight (w/w).

4.3 Article 33 of Regulation (EC) No 1907/2006 requires 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.

4.4 The material is identified and described by client.

4.5 The data and photo of sample 002 were transferred from technical report no. 64.160.10.0765.01A issued on 2010-09-30.

## 5 Documentation

Annex 01: Definition of classification

## 6 Summary

N/A

**Jiangsu TÜV Product Service Ltd. Guangzhou Branch**
**TÜV SÜD Group**

**Engineer:** _____ **Koyi Chen**

**Technical Report checked:** _____ **Winny Wu**

**Annex 01**

| Classification | Definition under Directive 67/548/EEC and Regulation(EC)1907/2006 |
|---|---|
| Carcinogen Category 1: | Substance known to carcinogenic to man. There is sufficient evidence to establish a causal association between human exposure to a substance and the development of cancer. |
| Carcinogen Category 2: | Substances which should be regarded as if they are carcinogenic to man. There is sufficient evidence to provide a strong presumption that human exposure to a substance may result in the development of cancer. Generally on the basis of:<br>- appropriate long-term animal studies;<br>- other relevant information. |
| Mutagen Category 1: | Substance known to mutagenic to man. There is sufficient evidence to establish a causal association between human exposure to a substance and heritable genetic damage. |
| Mutagen Category 2: | Substances which should be regarded as if they are mutagenic to man. There is sufficient evidence to provide a strong presumption that human exposure to the substance may result in the development of heritable genetic damage, generally on the basis of:<br>- appropriate animal studies;<br>- other relevant information. |
| Toxic to Reproduction Category 1: | Substance known to impair fertility in humans. There is sufficient evidence to establish a causal relationship between human exposure to the substance and impaired fertility.<br><br>Substances known to cause development toxicity in humans. There is sufficient evidence to establish a causal relationship between human exposure to the substance and subsequent developmental toxic effects in the progeny. |
| Toxic to Reproduction Category 2: | Substances which should be regarded as if they impair fertility in humans. sufficient evidence to provide a strong presumption that human exposure to the substance may result in impaired fertility on the basis of:<br>- clear evidence in animal studies of impaired fertility in the absence of toxic effects, or, evidence of impaired fertility occurring at around the same does levels as other toxic effects but which is not a secondary nonspecific consequence of the other toxic effects;<br>- other relevant information.<br><br>Substances which should be regarded as if they cause developmental toxicity to humans. There is sufficient evidence to provide a strong presumption that human exposure to the substance may result in developmental toxicity, generally on the basis of:<br><br>- clear results in appropriate animal studies where effects have been observed in the absence of signs of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not a secondary non-specific consequence of the other toxic effects;<br>- other relevant information. |
| PBT & vPvB: | Substances which are persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB) pose a particular challenge to the chemicals safety management. For these substances a “safe” concentration in the environment cannot be established with sufficient reliability. |