

## Test Report

Report No: ASH17-006387-06

Date: Mar 14 2017

Client name: HUZHOU Ochem Chemical Co.,Ltd  
Client address: No.688 Xifeng Road,Economic&Technologic Development Zone,Huzhou,Zhejiang,China  
Sample name: alcohol based two-component polyurethane adhesive A/B  
Sample Batch No.: /  
Product Date: 2017-2-10  
Manufacturer: HUZHOU Ochem Chemical Co.,Ltd

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**Above information and sample(s) was/were submitted and certified by the client, SGS quoted the information with no responsibility as to the accuracy, adequacy and/or completeness.**

SGS Sample No.: ASH17-006387.003  
SGS reference No.: SHAFD1703113700 /SHAFD1703137105 /SHAFD1703146505 /SL517052041625TX /SHAFD1704170600  
Date of sample received: Feb 27 2017  
Testing period: Feb 27 2017 ~ Mar 14 2017

### TEST(S) REQUESTED:

Selected test(s) as requested by applicant

### TEST METHOD(S):

Please refer to the next page(s)

### TEST RESULT(S):

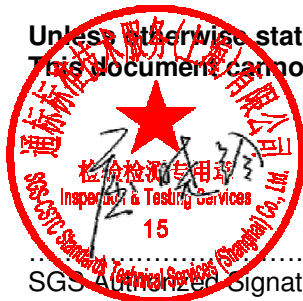
Please refer to the next page(s)

### Conclusion :

Based on the performed tests on submitted sample(s), the results of Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) do not exceed the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Chinese shall prevail in this report.

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3<sup>rd</sup> Building, No.889, Yishan Road, Shanghai, China 200233

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**TEST RESULT(S):**

Test item(s)	Unit(s)	Test method(s)	Test result(s)	Method detection limit(s)
Dibutyl Phthalate (DBP)	mg/kg	Refer to GB/T 21928-2008	ND*	0.3
Benzylbutyl Phthalate (BBP)	mg/kg	Refer to GB/T 21928-2008	ND*	1.5
Bis-(2-ethylhexyl) Phthalate (DEHP)	mg/kg	Refer to GB/T 21928-2008	ND*	1.5
Di-n-octyl Phthalate(DNOP)	mg/kg	Refer to GB/T 21928-2008	ND*	1.5
Dimethyl Phthalate (DMP)	mg/kg	Refer to GB/T 21928-2008	ND*	1.5
Diethyl Phthalate (DEP)	mg/kg	Refer to GB/T 21928-2008	ND*	1.5
Diisobutyl Phthalate (DIBP)	mg/kg	Refer to GB/T 21928-2008	ND*	1.5
Dipentyl Phthalate (DPP)	mg/kg	Refer to GB/T 21928-2008	ND*	1.5
Dicyclohexyl Phthalate(DCHP)	mg/kg	Refer to GB/T 21928-2008	ND*	1.5
Dinonyl Phthalate(DNP)	mg/kg	Refer to GB/T 21928-2008	ND*	1.5
Bis(2-methoxyethyl)ester(DMEP)	mg/kg	Refer to GB/T 21928-2008	ND*	1.5
Diphenyl Phthalate(DPhP)	mg/kg	Refer to GB/T 21928-2008	ND*	1.5
Dihexyl Phthalate (DHXP)	mg/kg	Refer to GB/T 21928-2008	ND*	1.5
Bis(4-methy-2-pentyl) Phthalate(BMPP)	mg/kg	Refer to GB/T 21928-2008	ND*	1.5
Bis(2-n-butoxyethyl) Phthalate (DBEP)	mg/kg	Refer to GB/T 21928-2008	ND*	1.5
Bis(2-ethoxyethyl) Phthalate (DEEP)	mg/kg	Refer to GB/T 21928-2008	ND*	1.5
Diisononyl phthalate(DINP)	mg/kg	Refer to GB/T 21928-2008	ND	1.5



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Bisphenol-A	mg/kg	Refer to Part II Section D2 of Japan External Trade Organization,2009,analysis was performed by LC-MS	ND	0.1
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Remark:

1.\*Results are only for reference

## RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU

Test Method :

- (1) With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.
- (2) With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.
- (3) With reference to IEC 62321-4:2013, determination of Mercury by ICP-OES.
- (4) With reference to IEC 62321:2008, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis.
- (5) With reference to IEC 62321-6:2015, determination of PBBs and PBDEs by GC-MS.

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1000	mg/kg	2	ND
Mercury (Hg)	1000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1000	mg/kg	2	ND
Sum of PBBs	1000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1000	mg/kg	-	ND

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t 400 - 691 - 0488

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Test Item(s)	Limit	Unit	MDL	003
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND

### Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
- (2) On 4 June 2015, Commission Directive (EU) 2015/863 was published in the Official Journal of the European Union (OJEU) to include the phthalates BBP, DBP, DEHP and DIBP into ANNEX II of the Rohs Recast Directive. The new law restricts each phthalate to no more than 0.1% in each homogeneous material of an electrical product.
- (3) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.
- (4) The restriction of DEHP, BBP, DBP and DIBP shall not apply to cables or spare parts for the repair, the reuse, the updating of functionalities or upgrading of capacity of EEE placed on the market before 22 July 2019, and of medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, placed on the market before 22 July 2021.
- (5) The restriction of DEHP, BBP and DBP shall not apply to toys which are already subject to the restriction of DEHP, BBP and DBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.

### **EN71-3:2013+A1:2014 under European Directive 2009/48/EC-Migration of certain elements(Category II:for liquid or sticky toy material)**

### Test Method :

With reference to EN71-3:2013+A1:2014, analysis was performed by ICP-MS

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Test Item(s)	Limit	Unit	MDL	003
Soluble Chromium (VI) (Cr VI)	0.005	mg/kg	0.005	ND
Soluble Lead (Pb)	3.4	mg/kg	0.5	ND
Soluble Antimony (Sb)	11.3	mg/kg	1	ND
Soluble Arsenic (As)	0.9	mg/kg	0.5	ND
Soluble Barium (Ba)	375	mg/kg	50	ND
Soluble Cadmium (Cd)	0.3	mg/kg	0.1	ND
Soluble Chromium (III) (Cr III)	9.4	mg/kg	5	ND
Soluble Mercury (Hg)	1.9	mg/kg	0.5	ND
Soluble Selenium (Se)	9.4	mg/kg	5	ND
Soluble Boron (B)	300	mg/kg	50	ND
Soluble Cobalt (Co)	2.6	mg/kg	0.5	ND
Soluble Manganese (Mn)	300	mg/kg	50	ND
Soluble Strontium (Sr)	1125	mg/kg	50	ND
Soluble Zinc (Zn)	938	mg/kg	50	ND
Soluble Copper (Cu)	156	mg/kg	50	ND
Soluble Aluminum (Al)	1406	mg/kg	50	ND
Soluble Nickel (Ni)	18.8	mg/kg	10	ND
Soluble Tin (Sn)	3750	mg/kg	0.08	ND
Soluble Organic Tin*	0.2	mg/kg	-	ND

### Notes :

(1) for sample 002, Confirmation test of soluble chromium (III) & chromium (VI) is not required in case of soluble chromium does not exceed their requirements as specified in EN71-3:2013+A1:2014.

(2) \*Confirmation test of soluble organic tin is not required in case of soluble tin, after conversion, does not exceed the soluble organic tin requirement as specified in EN71-3:2013+A1:2014

### Halogen

#### Test Method :

With reference to EN 14582: 2007, analysis was performed by Ion Chromatograph (IC).

Test Item(s)	Unit	MDL	003
Fluorine (F)	mg/kg	50	ND
Chlorine (Cl)	mg/kg	50	113
Bromine (Br)	mg/kg	50	ND

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<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Iodine (I)	mg/kg	50	ND

### Volatile Organic Compounds(VOCs)

Test Method :

With reference to YC/T 207-2014, analysis was performed by HS-GC-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Ethyl alcohol	mg/kg	3.2	550.4
Isopropyl Alcohol	mg/kg	3.2	1146.8
Acetone	mg/kg	3.2	>2000
Butanone	mg/kg	3.2	ND
Ethyl Acetate	mg/kg	3.2	>2000
Isopropyl acetate	mg/kg	3.2	6.2
n-Butanol	mg/kg	3.2	ND
Benzene	mg/kg	0.16	ND
n-Propyl acetate	mg/kg	3.2	ND
4-Methyl-2-Pentanone	mg/kg	3.2	ND
Toluene	mg/kg	0.32	0.6
n-Butyl acetate	mg/kg	3.2	ND
Ethylbenzene	mg/kg	0.32	ND
o-Xylene	mg/kg	0.32	ND
m-Xylene+p-Xylene	mg/kg	0.64	ND
Cyclohexanone	mg/kg	3.2	ND
Methanol	mg/kg	3.2	>2000
1-Ethoxy-2-propanol	mg/kg	3.2	ND
Styrene	mg/kg	3.2	ND
1-Propanol	mg/kg	3.2	ND
1-Methoxy-2-propanol	mg/kg	3.2	ND
2-Ethoxyethanol	mg/kg	3.2	ND
2-Ethoxyethyl acetate	mg/kg	3.2	ND
Dimethyl succinate	mg/kg	3.2	ND
Dimethyl glutarate	mg/kg	3.2	ND
Dimethyl adipate	mg/kg	3.2	ND

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Notes :

test result is only for reference

### Nonylphenol (NP)

Test Method :

solvent extraction, analysis was performed by LC-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Nonylphenol(NP)	mg/kg	50	ND

Notes :

(1) NP Reference Information: Entry 46 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2003/53/EC): Shall not be placed on the market, or used, as substances or in mixtures in concentrations equal to or greater than 0,1 % by weight for industrial and institutional cleaning, domestic cleaning, textiles and leather processing, emulsifier in agricultural teat dips, metal working, manufacturing of pulp and paper, cosmetic products, other personal care products and co-formulants in pesticides and biocides. Please refer to Regulation (EC) No 552/2009 to get more detail information

### Polycyclic aromatic hydrocarbons (PAHs)

Test Method :

With reference to ZEK 01.4-08 of German ZLS and its amendments, analysis was performed by GC-MS.

<u>Test Item(s)</u>	<u>Unit</u>	<u>MDL</u>	<u>003</u>
Sum of 18 PAHs	mg/kg	-	ND
Naphthalene(NAP)	mg/kg	0.1	ND
Acenaphthylene(ANY)	mg/kg	0.1	ND
Acenaphthene(ANA)	mg/kg	0.1	ND
Fluorene(FLU)	mg/kg	0.1	ND
Phenanthrene(PHE)	mg/kg	0.1	ND
Anthracene(ANT)	mg/kg	0.1	ND

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Fluoranthene(FLT)	mg/kg	0.1	ND
Pyrene(PYR)	mg/kg	0.1	ND
Benzo(a)anthracene(BaA)	mg/kg	0.1	ND
Chrysene(CHR)	mg/kg	0.1	ND
Benzo(b)fluoranthene(BbF) and Benzo(j)fluoranthene(BjF)	mg/kg	0.1	ND
Benzo(k)fluoranthene(BkF)	mg/kg	0.1	ND
Benzo(a)pyrene(BaP)	mg/kg	0.1	ND
Benzo(e)pyrene(BeP)	mg/kg	0.1	ND
Indeno(1,2,3-c,d)pyrene(IPY)	mg/kg	0.1	ND
Dibenzo(a,h)anthracene(DBA)	mg/kg	0.1	ND
Benzo(g,h,i)perylene(BPE)	mg/kg	0.1	ND

### Notes :

Above 8 PAHs(BaA,CHR,BbF,BjF.BkF,BeP,BaP,DBA) are listed in Commission Regulation (EU) No 1272/2013 amending Annex XVII to Regulation (EC) No 1907/2006.

(1) In order to protect the health of consumers from the risk arising from exposure to PAHs in articles, limits on the PAH content in the accessible plastic or rubber parts of articles should be set, and the placing on the market of articles containing any of the PAHs in concentrations greater than 1 mg/kg in those parts should be prohibited.

(2) Taking into account the vulnerability of children a lower limit value should be established.

Therefore the placing on the market of toys and childcare articles, containing any of the PAHs in concentrations greater than 0,5 mg/kg in their accessible plastic or rubber parts, should be prohibited.  
Remark: The German committee on Product Safety (AfPS) adopted a new PAHs document on August 4, 2014, which was taken into account by the GS certification bodies for the certification process of the GS mark. The previously valid PAK-document (ZEK 01.4-08, English version) was repealed on June 30, 2015.

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SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.  
Testing Center Agency of Shanghai Free-Trade Laboratory

3<sup>rd</sup> Building, No.889, Yishan Road, Shanghai, China 200233

t 400 - 691 - 0488

f (86-21) 6140 2547

[www.sgs.com](http://www.sgs.com)

中国·上海·宜山路889号3号楼

邮编:200233

t 400 - 691 - 0488

f (86-21) 6140 2547

e [sgs.china@sgs.com](mailto:sgs.china@sgs.com)



ZEK 01.4-08: Restraining maximum values for products

Parameter	Category 1	Category 2	Category 3
	Material indented to be put in the mouth or material for toys with normal skin contact for children aged < 36 months	Materials those are not included in Category 1, with predictable contact with the skin longer than 30 s. (long-term skin contact).	Materials those are not included in Category 1 or 2, with predictable skin contact up to 30 s (short-term skin contact).
Benzo(a)pyrene (mg/kg)	<0.2**	1	20
Sum of 18 PAHs (mg/kg)*	<0.2**	10	200

Notes:

\* = Only PAH substances >0.1 mg/kg are taken into account while calculating the sum of PAHs  
 \*\* = In case that the maximum values exceed the limits of category 1, but are within the limits of category 2, one may confirm the suitability of the tested material which is indented to be put in the mouth by additional specific migration tests of PAH components based on DIN EN 1186ff and §64 LFGB 80.30-1. The conclusion of the migration test results must be made based on food law criteria.

Remark: Result shown is of the total weight of wet sample

**Azo Dyes**

Test Method:

All Textile: According to Ref.EN 14362-1:2012 – Analysis was conducted with GC-MS/HPLC-DAD.

Amines	Result (mg/kg)	
	CAS No.	
4-Aminobiphenyl	92-67-1	ND
Benzidine	92-87-5	ND
4-Chlor-o-toluidine	95-69-2	ND
2-Naphthylamine	91-59-8	ND
o-Aminoazotoluene	97-56-3	ND
5-nitro-o-toluidine / 2-Amino-4-nitrotoluene	99-55-8	ND
4-Chloroaniline	106-47-8	ND
4-methoxy-m-phenylenediamine / 2,4-Diaminoanisole	615-05-4	ND
4,4'-Diaminodiphenylmethane	101-77-9	ND
3,3'-Dichlorobenzidine	91-94-1	ND
3,3'-Dimethoxybenzidine	119-90-4	ND



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# Test Report

Report No: ASH17-006387-06

Date: Mar 14 2017

3,3'-Dimethybenzidine	119-93-7	ND
4,4'-methylenedi-o-toluidine / 3,3'-Dimethyl-4,4'- diaminodiphenylmethane	838-88-0	ND
p-Cresidine	120-71-8	ND
4,4'-Methylene-bis-(2-chloroaniline)	101-14-4	ND
4,4'-Oxydianiline	101-80-4	ND
4,4'-Thiodianiline	139-65-1	ND
o-Toluidine	95-53-4	ND
4-methyl-m-phenylenediamine / 2,4-Toluylendiamine	95-80-7	ND
2,4,5-Trimethylaniline	137-17-7	ND
4-aminoazobenzene	60-09-3	ND
O-Anisidine	90-04-0	ND
<b>Conclusion</b>		<b>#</b>

Note: ND = Not Detected(<MDL)  
MDL(Method Detection Limit)= 5 mg/kg (for individual compound)  
**Max Limit: 30 mg/kg (for individual compound)**

**# Remark: For textiles no relevant amine exceeding 30 ppm (mg/kg) is required, the test method is only applicable for textile and the result is only for client's information.**

**Remark:** Whenever 4-aminodiphenyl (CAS number 92-67-1), 2-naphylamine (CAS number 91-59-8) and 4-methoxy-m-phenylene-diamine (CAS number 615-05-4) is found, the use of banned azo colorants cannot be reliably ascertained without additional information, e.g. the chemical structure of the colorants used.

In case polyurethane materials are used, e.g. PU foams and coatings and in prints, it cannot be ruled out that certain amines, e.g. 4,4'-methylene-dianiline (MDA, CAS number 101-77-9) and 2,4-toluylen-diamine (TDA, CAS number 95-80-7) are released from the PU component and not from a banned azo colorant.

In case of pigment prints care has to be taken that 4,4'-methylene-dianiline (MDA, CAS number 101-77-9) is not released from a source of banned azo colorants but from e.g. a chemical fixing agent.

The EN 14362-1:2012 method will enable further cleavage of 4-aminoazobenzene to non-forbidden amines: aniline and 1,4-phenylenediamine. If aniline and/or 1,4-phenylenediamine is not found (i.e. 5mg/kg) by mentioned test method, test result for 4-aminoazobenzene (CAS no. 60-09-3) is considered as "not detected" (i.e. <5mg/kg). Otherwise, the test method of EN 14362-3:2012 will be employed to verify the presence of 4-aminoazobenzene.

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SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.  
Testing Center Agency (Shanghai) P.R.China Laboratory

3<sup>rd</sup> Building, No.889, Yishan Road, Shanghai, China 200233

t 400 - 691 - 0488

f (86-21) 6140 2547

www.sgs.com.cn

中国·上海·宜山路889号3号楼 邮编:200233

t 400 - 691 - 0488

f (86-21) 6140 2547

e [sgs.china@sgs.com](mailto:sgs.china@sgs.com)

## Test Report

Report No: ASH17-006387-06

Date: Mar 14 2017

Remark:

- 1.ND = Not Detected ( < MDL )
- 2.MDL = Method Detection Limit
- 3.The samples were analyzed on behalf of the applicant as mixing sample/material in one testing. The above results were only given as the informality value.
- 4.The samples were mixed as Adhesive A: Adhesive B=6:1 before test.

**SAMPLE DESCRIPTION:** 2 bottles ca. 200mL/bottle liquid in bottle

**ASH17-006387.003**



\*\*\* End \*\*\*

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中国·上海·宜山路889号3号楼 邮编:200233 t 400 - 691 - 0488 f (86-21) 6140 2547 e [sgs.china@sgs.com](mailto:sgs.china@sgs.com)