

HUANGSHAN JIAJIA FLUORESCENT MATERIAL CO.,LTD.  
 NO.8 WEIYI ROAD SHEXIAN CIRCULAR ECONOMY PARKS HUANGSHAN CITY CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : LWF SLURRY COATING

SGS Job No. : SHHG1403006545SD - SH  
 Style No. : LWF SLURRY COATING  
 Date of Sample Received : 12 Mar 2014  
 Testing Period : 12 Mar 2014 - 22 Mar 2014  
 Test Requested : Selected test(s) as requested by client.  
 Test Method : Please refer to next page(s).  
 Test Results : Please refer to next page(s).

Result Summary :

Test Requested	Conclusion
EN71-3:2013 under European Directive 2009/48/EC-Migration of certain elements(for liquid or sticky toy material)	See Results
Formaldehyde	See Results
Alkylphenol Ethoxylates (APEOs) (Nonylphenol Ethoxylates (NPEOs), Octylphenol Ethoxylates (OPEOs))	See Results
Azo Dyes	See Results
Polycyclic aromatic hydrocarbons (PAHs)	See Results

Signed for and on behalf of  
 SGS-CSTC Ltd.



Serena Wang  
 Approved Signatory



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# Test Report

No. SHAHG1403657801

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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SHA14-036578.001	Red liquid

Remarks :

- (1) 1 mg/kg = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected ( < MDL )
- (4) "-" = Not Regulated

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

Test Method : With reference to EN 71 Part 3:2013, analysis was performed by ICP-MS  
Soluble Chromium (VI) was analyzed by IC-UV or LC-ICP-MS

Test Item(s)	Limit	Unit	MDL	001
Soluble Chromium (VI)	0.005	mg/kg	0.005	ND
Soluble Lead (Pb)	3.4	mg/kg	0.5	0.9
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 Tin (Sn)	3750	mg/kg	0.08	ND
Soluble Zinc (Zn)	938	mg/kg	50	236
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 Organic Tin (expressed as Tin)*	0.2	mg/kg	0.08	ND

Notes :

- (1) \*Confirmation test of soluble organic tin is not required in case of soluble tin, after conversion, does



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not exceed the soluble organic tin requirement as specified in EN71-3: 2013

### Formaldehyde

Test Method : In-house method (SHTC-CHEM-SOP-315-T), analysis was performed by UV-Vis.

Test Item(s)	Unit	MDL	001
Formaldehyde	g/kg	0.02	ND

### Alkylphenol Ethoxylates (APEOs) (Nonylphenol Ethoxylates (NPEOs), Octylphenol Ethoxylates (OPEOs))

Test Method : In-house method (SHTC-CHEM-SOP-92-T), analysis was performed by LC-MS.

Test Item(s)	Unit	MDL	001
Nonylphenol ethoxylates (NPEOs)	mg/kg	50	ND
Octylphenol ethoxylates (OPEOs)	mg/kg	50	ND

Notes :

1. NPEOs 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.

### Azo Dyes

Test Method : According to Ref. EN 14362-1:2012- Analysis was conducted with GC-MS/HPLC-DAD.

Test Item(s)	CAS NO.	Unit	MDL	001
4-Aminobiphenyl	92-67-1	mg/kg	5	ND
Benzidine	92-87-5	mg/kg	5	ND
4-chloro-o-toluidine	95-69-2	mg/kg	5	ND
2-naphthylamine	91-59-8	mg/kg	5	ND
o-aminoazotoluene	97-56-3	mg/kg	5	ND
5-nitro-o-toluidine /	99-55-8	mg/kg	5	ND
2-Amino-4-nitrotoluene				
4-chloroaniline	106-47-8	mg/kg	5	ND



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Test Item(s)	CAS NO.	Unit	MDL	001
4-methoxy-m-phenylenediamine / 2,4-Diaminoanisole	615-05-4	mg/kg	5	ND
4,4'-diaminodiphenylmethane	101-77-9	mg/kg	5	ND
3,3'-dichlorobenzidine	91-94-1	mg/kg	5	ND
3,3'-dimethoxybenzidine	119-90-4	mg/kg	5	ND
3,3'-dimethylbenzidine	119-93-7	mg/kg	5	ND
3,3'-Dimethyl-4,4'-diaminodiphenylmethane / 4,4'-methylenedi-o-toluidine	838-88-0	mg/kg	5	ND
p-cresidine	120-71-8	mg/kg	5	ND
4,4'-methylene-bis-(2-chloroaniline)	101-14-4	mg/kg	5	ND
4,4'-oxydianiline	101-80-4	mg/kg	5	ND
4,4'-thiodianiline	139-65-1	mg/kg	5	ND
o-toluidine	95-53-4	mg/kg	5	ND
4-methyl-m-phenylenediamine / 2,4-Toluyldiamine	95-80-7	mg/kg	5	ND
2,4,5-trimethylaniline	137-17-7	mg/kg	5	ND
4-aminoazobenzene	60-09-3	mg/kg	5	ND
O-Anisidine	90-04-0	mg/kg	5	ND
<b>Conclusion</b>				<b>**</b>

### Notes :

- (1) Test result for 4-aminoazobenzene (CAS no.: 60-09-3) is considered as "not detected" (i.e. <5mg/kg) since both aniline and/or 1,4-phenylenediamine is not found (i.e. <5mg/kg) by mentioned test method
- (2) \*\*= 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.
- (3) 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.
- (4) 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.
- (5) 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.

### Polycyclic aromatic hydrocarbons (PAHs)



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

Test Item(s)	Unit	MDL	001
Sum of 18 PAHs	mg/kg	-	ND
Naphthalene(NAP)	mg/kg	0.2	ND
Acenaphthylene(ANY)	mg/kg	0.2	ND
Acenaphthene(ANA)	mg/kg	0.2	ND
Fluorene(FLU)	mg/kg	0.2	ND
Phenanthrene(PHE)	mg/kg	0.2	ND
Anthracene(ANT)	mg/kg	0.2	ND
Fluoranthene(FLT)	mg/kg	0.2	ND
Pyrene(PYR)	mg/kg	0.2	ND
Benzo(a)anthracene(BaA)	mg/kg	0.2	ND
Chrysene(CHR)	mg/kg	0.2	ND
Benzo(b)fluoranthene(BbF) and Benzo(j)fluoranthene(BjF)	mg/kg	0.4	ND
Benzo(k)fluoranthene(BkF)	mg/kg	0.2	ND
Benzo(a)pyrene(BaP)	mg/kg	0.2	ND
Benzo(e)pyrene(BeP)	mg/kg	0.2	ND
Indeno(1,2,3-c,d)pyrene(IPY)	mg/kg	0.2	ND
Dibenzo(a,h)anthracene(DBA)	mg/kg	0.2	ND
Benzo(g,h,i)perylene(BPE)	mg/kg	0.2	ND

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 PAH (mg/kg)*	<0.2**	10	200

Notes:

- \* = Only PAH substances >0.2 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/EN13130 and §64 LFGB 80.30-1. The conclusion of the migration test results must be made based on food law criteria.



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Remark: (1) Result shown is of the total weight of wet sample.

Sample photo:



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