

Test Report No.: SHG20100921002

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Client:

Buyer's name: N/A

Manufacturer's name: N/A

Test item(s): 1. 儿童反光安全背心 Children Safety Vest

**Identification/
Model No(s):** N/A

Sample Receiving date: Sep. 21, 2010

Delivery condition: Apparent good, Samples tested as received

Test location: TÜV Rheinland (Shanghai) Co. Ltd.- Product and Environmental Analyses; 3/4F,
Building No. 10 Lane 777, Guangzhong Road West Shanghai 200072, P.R.China

Test specification:

Test result:

Customer requirement:

Polycyclic Aromatic Hydrocarbons (PAHs) – (GS-Certification)

PASS

Banned AZO Dyes

PASS

Total Cadmium (Directive 91/338/EEC)

PASS

Other Information:

Test period: Sep. 21, 2010 – Sep. 28, 2010

Attachment: Photographic documentation

Abbreviations: ok / P = passed
fail / F = failed
n.a. / N = not applicable

**For and on behalf of
TÜV Rheinland (Shanghai) Co., Ltd.**



Sep. 29, 2010 Rebecca Wang Sr. Project Coordinator

Date

Name/Position

Test result is drawn according to the kind and extent of tests performed.

This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.

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Gegenstand der Prüfung / Test item :

Material No.	Material	Color	Location
1	Yellow fabric	yellow	refer to photo
2	reflecting band	grey	refer to photo
3	Black band	black	refer to photo
4	Elastic band	black	refer to photo

Test result(s):

16 Polycyclic Aromatic Hydrocarbons (PAHs)_ZEK 01.2-08

Test method : Testing and Evaluation of Polycyclic Aromatic Hydrocarbons (PAH) for GS-Certification (QMA36.105.47SHG); ZEK 01.2-08

Requirement : ZEK 01.2 -08

Parameter	Unit	Category 1 Material intended to be put into mouth and toys for children less than 36 months	Category 2 Materials that are not included in Category 1, with predictable contact with the skin longer than 30 seconds	Category 3 Materials that are not included in Category 1 or 2, with predictable skin contact up to 30 sec
Benzo(a)pyrene	mg/kg	Not detectable. (< 0.2)	<1	<20
Sum of listed PAHs	mg/kg	Not detectable (< 0.2)	<10	<200

Parameter	CAS No.	Unit	Detection limit	Item -1+2	Item -3+4
Sum of listed PAHs	--	mg/kg	0.2	ND	0.6
Naphthalene	91-20-3	mg/kg	0.2	ND	ND
Acenaphthylene	208-96-8	mg/kg	0.2	ND	ND
Acenaphthene	83-32-9	mg/kg	0.2	ND	ND
Fluorene	86-73-7	mg/kg	0.2	ND	ND
Phenanthrene	85-01-8	mg/kg	0.2	ND	ND
Anthracene	120-12-7	mg/kg	0.2	ND	ND
Fluoranthene	206-44-0	mg/kg	0.2	ND	ND
Pyrene	129-00-0	mg/kg	0.2	ND	0.4
Chrysene	218-01-9	mg/kg	0.2	ND	ND
Benz(a)anthracene	56-55-3	mg/kg	0.2	ND	ND
Benzo(b)fluoranthene	205-99-2	mg/kg	0.2	ND	ND
Benzo(k)fluoranthene	207-08-9	mg/kg	0.2	ND	ND
Benzo(a)pyrene	50-32-8	mg/kg	0.2	ND	ND
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	0.2	ND	ND
Dibenzo(a,h)anthracene	53-70-3	mg/kg	0.2	ND	ND
Benzo(g,h,i)perylene	191-24-2	mg/kg	0.2	ND	0.2
Category of the test pieces			-	2	2
Summary to above			-	Pass	Pass

Remark:

- 1 "mg/kg" denotes milligram per kilogram
- 2 ND denotes less than detection limit

Main test instruments used for this method:

Instrument	Manufactory	Model / Type
GC-MS	Agilent Technologies	GC (7890)-MS (5975C)
GC-MS	Agilent Technologies	GC (6890)-MS (5973)

Banned AZO Dyes (Directive 2002/61/EC)

Test method : Determination by Gas Chromatography-Mass Selective Detection (GC-MSD) and confirmation by High Performance Liquid Chromatographic Analysis (HPLC/DAD) (QMA36.105.11SHG) ,

Textiles: With reference to § 64 LFGB B 82.02-2 and § 64 LFGB B 82.02-9

Requirement : Directive 2002/61/EC, less than 30 mg/kg per amine component

Parameter	CAS No.	Unit	Item -1+2	Item -3+4
4-Aminobiphenyl	92-67-1	mg/kg	ND	ND
4,4'-Benzidine	92-87-5	mg/kg	ND	ND
4-Chloro-2-methylaniline	95-69-2	mg/kg	ND	ND
2-Naphthylamine	91-59-8	mg/kg	ND	ND
o-Aminoazotoluene ¹	97-56-3	mg/kg	ND	ND
5-Nitro-o-toluidine ²	99-55-8	mg/kg	ND	ND
4-Chloroaniline	106-47-8	mg/kg	ND	ND
4-Methoxy-1,3-phenylenediamine	615-05-4	mg/kg	ND	ND
Bis-(4-aminophenyl)methane	101-77-9	mg/kg	ND	ND
3,3'-Dichlorobenzidine	91-94-1	mg/kg	ND	ND
3,3'-Dimethoxybenzidine	119-90-4	mg/kg	ND	ND
o-Tolidine	119-93-7	mg/kg	ND	ND
3,3'-Dimethyl-4,4'-diaminodiphenylmethane	838-88-0	mg/kg	ND	ND
2-Methoxy-5-methylaniline	120-71-8	mg/kg	ND	ND
4,4'-Methylene bis(o-chloroaniline)	101-14-4	mg/kg	ND	ND
4,4'-Oxydianiline	101-80-4	mg/kg	ND	ND
4,4'-Thiodianiline	139-65-1	mg/kg	ND	ND
o-Toluidine	95-53-4	mg/kg	ND	ND
2,4-Diaminotoluene	95-80-7	mg/kg	ND	ND
2,4,5-Trimethylaniline	137-17-7	mg/kg	ND	ND
o-Anisidine	90-04-0	mg/kg	ND	ND
4-Amino-azobenzene ³	60-09-3	mg/kg	ND	ND
Conclusion	-	-	Pass	Pass

Remarks

ND : Not detected, less than 10 mg/kg (max.)

mg/kg : milligram per kilogram

Note 1 : o-Aminoazotoluene(CAS No.: 97-56-3) is further reduced to o-Toluidine (CAS No.: 95-53-4) and quantified by this.

Note 2 : 5-Nitro-o-toluidine (CAS No.: 99-55-8) is further reduced to 4-Methyl-m-phenylene diamine (CAS No.: 95-80-7) and quantified by this.

Note 3 : 4-Amino-azobenzene (CAS No.:60-09-3) is detected as p-Phenylenediamine and aniline.

When p-Phenylenediamine and Aniline are detected in one sample simultaneously, is this an indication, that the banned 4-Amino-azobenzene (CAS No.:60-09-3) may be contained. An additional analysis is performed to confirm and measure by § 64 LFGB B 82.02-9.

Pass : According to the analysis as carried out, AZO colorants, which release the listed aromatic amines under Directive 2002/61/EC, were less than 30 mg/kg.

Main test instruments used for this method:

Instrument	Manufactory	Model / Type
GC-MS	Agilent Technologies	GC (6890)-MS (5973)
HPLC/DAD	Agilent Technologies	HPLC(1100)

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Cadmium and its compounds (Total Cadmium) _Directive 91/338/EEC

Test method : BS EN 1122: 2001 method B

Requirement : Directive 91/338/EEC amending 76/769/EEC for total cadmium content*

Parameter	Unit	Item _ 1+2	Item _ 3+4
Total Cadmium(Cd)	mg/kg	<2	<2
Conclusion	-	Pass	Pass

Remark:

- 1 *Requirement of Directive 91/338/EEC: 100 mg/kg for non-metal, 1000 mg/kg for paints of high zinc content.
- 2 mg/kg, denotes milligram per kilogram

Main test instruments used for this method:

Instrument	Manufactory	Model / Type
ICP-OES	PerkinElmer	Optima 5300

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Sample Photos:



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