

# TEST REPORT

**Technical Report:** (6717)306-0442

May 16, 2017

Date Received: March 10, 2017

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**DYECHEM INTERNATIOANL PVT. LTD.**  
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 5 ASHU BISWAS ROAD, NEAR CHAKRABERIA SCHOOL, PADAPUKUR,  
 BHOWANIPUR, KOLKATA-700025, WEST BENGAL, INDIA

Sample Description: : METALLIC GREEN FABRIC  
 (Sample received in good condition)

Color:	METALLIC GREEN	Style No.:	/
Order No.:	/	Fiber Content:	/
Article No.:	/	Agency:	/
Age Grade:	/	Product End Use:	/
Vendor:	DYECHEM INTERNATIOANL PVT.LTD	Retest No.:	/
Tannery Name:	/	Supplier Reference:	/
Pre Testing For	/	Country of Origin:	/
Client Name:	/	Country:	/
Test Period:	March 10, 2017 to May 16, 2017		


## SUMMARY OF TEST RESULTS


TEST REQUESTED	CONCLUSION	REMARK
FORMALDEHYDE TEST	PASS	
EXTRACTABLE HEAVY METALS TEST	PASS	
AZO DYES CONTENT	PASS	
pH VALUE TEST	PASS	

**NOTE:** The test has been conducted as per vendor's request.

**BUREAU VERITAS CONSUMER PRODUCTS SERVICES (INDIA) PVT. LTD.**

## SIGNATORIES

  
**CHHATISH KUMAR NATH**  
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 (Manager – Analytical)

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C/N: (6717)306-0442 RS/VS

**"Pls. refer the website [www.nabl-india.org](http://www.nabl-india.org) to view our Scope of accredited Test"**

Bureau Veritas Consumer Products Services (India)  
 Pvt. Ltd.,  
 C-19, Sec – 7 Noida (U.P.) 201301 PH: 4368283/205

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**PHOTO OF THE SUBMITTED SAMPLE**





## TEST RESULTS

### FORMALDEHYDE

**Test Method** : BS EN ISO 14184-1: 2011

**Tested Item(s)** : A METALLIC GREEN FABRIC

<b>Maximum Limit:</b>	<b>75 mg/kg</b>		
<b>Tested Item(s)</b>	<b>Result</b>	<b>Unit</b>	<b>Conclusion</b>
A	ND	mg/kg	PASS

Note:

ND = Not detected

">" = More than

mg/kg = milligram per kilogram

Detection Limit (mg/kg): 5

### Extractable Heavy Metals Content

**Test Method** : Artificial perspiration solution extraction according to ISO 105 E04:1996 and analyzed by Inductively Coupled Plasma Mass Spectrometer (ICP-MS) or ultraviolet-visible (UV-Vis) spectrophotometer.

**Tested Item(s)** : A METALLIC GREEN FABRIC

<b>Maximum Limit:</b>	<b>Class I</b>	<b>Element (mg/kg)</b>								
		<b>As</b>	<b>Pb</b>	<b>Cd</b>	<b>Cr</b>	<b>Co</b>	<b>Cu</b>	<b>Ni</b>	<b>Sb</b>	<b>Hg</b>
		0.2	0.2	0.1	2.0	1.0	25	1.0 (0.5) <sup>#</sup>	30	0.02
	<b>Class II &amp; III</b>	<b>Element (mg/kg)</b>								
		<b>As</b>	<b>Pb</b>	<b>Cd</b>	<b>Cr</b>	<b>Co</b>	<b>Cu</b>	<b>Ni</b>	<b>Sb</b>	<b>Hg</b>
		1.0	1.0	0.1	2.0 (200*)	4.0	50	4.0 (1.0) <sup>#</sup>	30	0.02
	<b>Class IV</b>	<b>Element (mg/kg)</b>								
		<b>As</b>	<b>Pb</b>	<b>Cd</b>	<b>Cr</b>	<b>Co</b>	<b>Cu</b>	<b>Ni</b>	<b>Sb</b>	<b>Hg</b>
		1.0	1.0	0.1	2.0 (200*)	4.0	50	4.0 (1.0) <sup>#</sup>	-	0.02

<b>-</b>	<b>Unit</b>	<b>Result</b>
<b>Tested Item(s)</b>	-	A
<b>Parameter</b>	-	-
Arsenic (As)	mg/kg	ND
Lead (Pb)	mg/kg	ND
Cadmium (Cd)	mg/kg	ND
Chromium (Cr)	mg/kg	ND
Cobalt (Co)	mg/kg	ND
Copper (Cu)	mg/kg	ND
Nickel (Ni)	mg/kg	ND
Antimony (Sb)	mg/kg	ND
Mercury (Hg)	mg/kg	ND
<b>Conclusion</b>	-	<b>PASS</b>

Note:

ND = Not detected

">" = More than

mg/kg = milligram per kilogram

Detection Limit (mg/kg):

Each (As & Cd) 0.02; Each (Co, Cr, Ni & Pb) 0.1; Each Sb 0.5; Cu 5; Hg 0.005

Remark:



## TEST RESULTS

### AZO DYES TEST

**Test Method I** : EN 14362-1:2017

**Test Method II** : ISO 17234-1:2010

**Test Method III** : EN 14362-3:2017 (For textile)/ ISO 17234-2:2011 (For leather)

Quantification analysis by GC-MS and confirmation by LC-DAD.

**TESTED ITEM(S)** : A METALLIC GREEN FABRIC

<b>Maximum Limit:</b>	<b>30 mg/kg</b>
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Test Item(s)	Test Method	Result			Conclusion
		Detected Analyte(s)	Conc.	Unit	
A	I	ND	ND	mg/kg	PASS

Note: mg/kg = milligram per kilogram  
Detection Limit = 5 ppm

“<” = less than “>” = more than  
ND = not detected

#### 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.
- Azo colorants that are able to form p-aminoazobenzene, generate aniline and 1,4-phenylenediamine under the condition of this method. Aniline and 1,4-phenylenediamine are not detected under the condition of this method.
- The presence of these colorants cannot be confirmed by the method stated as above. The result of p-aminoazobenzene shown is analysed and confirmed by EN 14362-3/ ISO 17234-2.

### pH VALUE

**Test Method** : ISO 3071: 2005, extraction with potassium chloride (For Textile)

**Tested Item(s)** : A METALLIC GREEN FABRIC

<b>Maximum Limit:</b>	<b>Textile: 4.0-7.5</b>			
Tested Item(s)	Result	Unit	Conclusion	
A	6.3	-	PASS	

Note:

ND = Not detected

“>” = More than



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## APPENDIX

List of Amines in Azo Dyestuff:					
No.	Name of Analytes	CAS-No.	No.	Name of Analytes	CAS-No.
1	4-Aminodiphenyl	92-67-1	13	4,4'-Methylenedi-o-toluidine (3,3'-Dimethyl-4,4'-diaminodiphenylmethane)	838-88-0
2	Benzidine	92-87-5	14	p-Cresidine	120-71-8
3	4-Chloro-o-toluidine	95-69-2	15	4,4'-Methylene-bis-(2-chloraniline)	101-14-4
4	2-Naphthylamine	91-59-8	16	4,4'-Oxydianiline	101-80-4
5	o-Aminoazotoluene	97-56-3	17	4,4'-Thiodianiline	139-65-1
6	5-nitro-o-toluidine (2-Amino-4-nitrotoluene)	99-55-8	18	o-Toluidine	95-53-4
7	4-Chloroaniline (p-Chloroaniline)	106-47-8	19	4-Methyl-m-phenylenediamine (2,4-Toluenediamine)	95-80-7
8	4-Methoxy-m-phenylenediamine (2,4-Diaminoanisole)	615-05-4	20	2,4,5-Trimethylaniline	137-17-7
9	4,4'-Diaminodiphenylmethane (4,4'-Methylenedianiline)	101-77-9	21	o-Anisidine	90-04-0
10	3,3'-Dichlorobenzidine	91-94-1	22	4-Aminoazobenzene (p-Aminoazobenzene)	60-09-3
11	3,3'-Dimethoxybenzidine (o-Dianisidine)	119-90-4	23	2,4-Xylidine	95-68-1
12	3,3'-Dimethylbenzidine (4,4'-Bi-o-toluidine)	119-93-7	24	2,6-Xylidine	87-62-7

**END**