

TEST REPORT

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Applicant : NANJING HAM-NING CO., LTD.
Address : ROOM 303, BUILDING D, 21 RUANJIAN AVE. 210012, NANJING, CHINA

Below information submitted by the applicant:

Product Name : Sublimation Printable Face Mask
Model : HTMK001P
Model may cover : /
Reference info. : /
Manufacturer info. : GlazeKing Ceramic Technology Co.,Ltd.
Supplier info. : /
Buyer info. : /
Country of Destination : Europe/US
Country of Origin : China

Sample Received : 04.21, 2020
Test Period : 04.21, 2020 – 04.24, 2020
Test Requirement : Refer to next pages
Test Method : Refer to next pages
Test Result : Refer to next pages
Test Conclusion : Refer to next pages

Jerry Zhao, Technical Director
Signed for and on behalf of
TUV THURINGEN SHANGHAI CO., LTD.
Shanghai

TÜV Thüringen CHINA

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TEST RESULTS

As the applicant required, to carry the test items as below:

Test Items	Verdict
1. European Regulation REACH, No.1907/2006 Annex XVII entry 43 (including its amendments) - AZO dyes content	PASS
2. Allergenic Dyestuffs content - OEKO-TEX 100	PASS
3. Carcinogenic Dyestuffs content - DIN 54231:2005-11	PASS
4. Color fastness to washing	DATA

SAMPLE DESCRIPTION

Sample description : 1#. White polyester mask
2#. Black fabric edge with elastomer core

TEST RESULTS

1, AZO Dyes content

Test Method: with reference to Leather – ISO 17234-1:2010/ ISO 17234-2:2011; Textile - EN 14362-1:2012 / BS EN 14362-3:2012, analysis was conducted with GC-MS/HPLC-DAD

Test Items	Units	MDL	Test Results		Permissible Limit
			1#	2#	
4-aminobiphenyl CAS No.92-67-1	mg/kg	5	n.d.	n.d.	≤30
Benzidine CAS No.92-87-5	mg/kg	5	n.d.	n.d.	≤30
4-chloro-o-toluidine CAS No.95-69-2	mg/kg	5	n.d.	n.d.	≤30
2-naphthylamine CAS No.91-59-8	mg/kg	5	n.d.	n.d.	≤30
o-aminoazotoluene CAS No.97-56-3	mg/kg	5	n.d.	n.d.	≤30
5-nitro-o-toluidine/ 2-amino-4-nitrotoluene CAS No.99-55-8	mg/kg	5	n.d.	n.d.	≤30
4-chloroaniline CAS No.106-47-8	mg/kg	5	n.d.	n.d.	≤30
4-methoxy-m-phenylene--diamine/ 2,4-diaminoanisole CAS No.615-05-4	mg/kg	5	n.d.	n.d.	≤30
4,4'-diaminodiphenylmethane CAS No.101-77-9	mg/kg	5	n.d.	n.d.	≤30
3,3'-dichlorobenzidine CAS No.91-94-1	mg/kg	5	n.d.	n.d.	≤30
3,3'-dimethoxybenzidine CAS No.119-90-4	mg/kg	5	n.d.	n.d.	≤30
3,3'-dimethylbenzidine CAS No.119-93-7	mg/kg	5	n.d.	n.d.	≤30
3,3'-dimethyl-4,4'-diaminodiphenyl-methane/ 4,4'-methylenedi-o-toluidine CAS No.838-88-0	mg/kg	5	n.d.	n.d.	≤30
p-cresidine CAS No.120-71-8	mg/kg	5	n.d.	n.d.	≤30

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Test Items	Units	MDL	Test Results		Permissible Limit
			1#	2#	
4,4'-methylene-bis-(2-chloro-aniline) CAS No.101-14-4	mg/kg	5	n.d.	n.d.	≤30
4,4'-oxydianiline CAS No.101-80-4	mg/kg	5	n.d.	n.d.	≤30
4,4'-thiodianiline CAS No.139-65-1	mg/kg	5	n.d.	n.d.	≤30
o-toluidine CAS No.95-53-4	mg/kg	5	n.d.	n.d.	≤30
4-methyl-m-phenylenediamine/ 2,4-toluylenediamine CAS No.95-80-7	mg/kg	5	n.d.	n.d.	≤30
2,4,5-trimethylaniline CAS No.137-17-7	mg/kg	5	n.d.	n.d.	≤30
4-aminoazobenzene CAS No.60-09-3	mg/kg	5	n.d.	n.d.	≤30
o-anisidine CAS No.90-04-0	mg/kg	5	n.d.	n.d.	≤30

Note:

(1) The EN 14362-1:2012/ISO 17234-1:2010 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/ISO 17234-2:2011 will be employed to verify the presence of 4-aminoazobenzene.

(2) Max. limit specified by entry 43 of Regulation (EC) No 552/2009 amending Annex XVII of REACH Regulation (EC) No 1907/2006 (previously restricted under Directive 2002/61/EC).

(3) Whenever 4-aminodiphenyl (CAS no. 92-67-1), 2-naphylamine (CAS no. 91-59-8) and 4-methoxy-m-phenylene-diamine (CAS no. 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 no. 101-77-9) and 2,4-toluylen-diamine (TDA, CAS no. 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 no.101-77-9) is not released from a source of banned azo colorants but from e.g. a chemical fixing agent.

2, Dyestuffs classified as allergenic

Test Method: with reference to OEKO-TEX 100 and DIN 54231:2005, analyzed by LC-DAD, LC-MS

Test Items	Units	MDL	Test Results		Permissible Limit
			1#	2#	
C.I. Disperse Blue 1	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Blue 3	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Blue 7	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Blue 26	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Blue 35	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Blue 102	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Blue 106	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Blue 124	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Brown 1	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Orange 1	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Orange 3	mg/kg	15	n.d.	n.d.	≤50

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Test Items	Units	MDL	Test Results		Permissible Limit
			1#	2#	
C.I. Disperse Orange 37	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Orange 76	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Red 1	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Red 11	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Red 17	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Yellow 1	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Yellow 3	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Yellow 9	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Yellow 39	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Yellow 49	mg/kg	15	n.d.	n.d.	≤50

3, Dyestuffs classified as carcinogenic

Test Method: with reference to DIN 54231:2005-11, analyzed by LC-DAD, LC-MS

Test Items	Units	MDL	Test Results		Permissible Limit
			1#	2#	
C.I. Acid Red 26	mg/kg	15	n.d.	n.d.	≤50
C.I. Basic Red 9	mg/kg	15	n.d.	n.d.	≤50
C.I. Basic Violet 14	mg/kg	15	n.d.	n.d.	≤50
C.I. Direct Black 38	mg/kg	15	n.d.	n.d.	≤50
C.I. Direct Blue 6	mg/kg	15	n.d.	n.d.	≤50
C.I. Direct Red 28	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Blue 1	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Orange 11	mg/kg	15	n.d.	n.d.	≤50
C.I. Disperse Yellow 3	mg/kg	15	n.d.	n.d.	≤50

4, Color fastness to rubbing

Test Method: with reference to ISO 105 X12:2016, Size of rubbing finger: circular 16 mm diameter.

Test Items		Units	MDL	Test Results		Permissible Limit
				1#	2#	
Wrap	Dry, color staining	---	---	4-5	3-4	---
	Wet, color staining	---	---	4-5	3-4	---
Weft	Dry, color staining	---	---	4-5	3-4	---
	Wet, color staining	---	---	4-5	3-4	---

Remarks: Grey scale rating is based on the 5-step scale of 1 to 5, where 1 is bad and 5 is good.

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5, Color fastness to Washing

Test Method: with reference to ISO 105-C06:2006

Test Items		Units	MDL	Test Results		Permissible Limit
				1#	2#	
Color change	In shade	---	---	4-5	4	---
Color staining	of, acetate	---	---	4-5	4	---
	of, cotton	---	---	4-5	4	---
	of, nylon	---	---	4-5	4	---
	of, polyester	---	---	4-5	4	---
	of, acrylic	---	---	4-5	4	---
	of, wool	---	---	4-5	4	---
	Self	---	---	4-5	4	---

Remarks: Grey scale rating is based on the 5-step scale of 1 to 5, where 1 is bad and 5 is good.

Note A: Explanation of Color fastness Results

- Grade 5 Negligible or no change or staining
- Grade 4 Slightly changed or stained
- Grade 3 Noticeably changed or stained
- Grade 2 Considerably changed or stained
- Grade 1 Much changed or heavily stained

Note B:

- 1, %, percentage; mg, milligrams; g, grams; kg, kilograms
- 2, mg/kg = milligrams per kilograms
- 3, mg/L = milligrams per litre
- 4, 0.1% = 1000mg/kg = 1000mg/L
- 5, < = less than
- 6, > = greater than
- 7, MDL = method detection limit
- 8, N.D. = not detected, < MDL
- 9, N.A. = not applicable
- 10, N.R. = not required
- 11, EX = abbr. of Exempted

***** To be continued *****

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SAMPLE IMAGES



Tested samples

***** END OF REPORT *****

