

**TEST REPORT**No. **8621.SH.2004.0258.2** Date: **04.24, 2020** Page: **1 / 5**

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. Compliance for European Toys Safety Requirement 2009/48/EC - EN 71-3:2009 migration of certain elements	PASS

## SAMPLE DESCRIPTION

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

## TEST RESULTS

### 1. Migration of certain elements

**Test Method:** As specified in European standard on safety of toys EN 71-3:2019 – Migration of certain elements, acid extraction method was used and toxic elements content were determined by ICP-OES, ICP-MS, HPLC-ICP-MS and GC-MS.

Test Parameter	Units	MDL	Results		Permissible Limit
			1#	2#	
Aluminum, Al	mg/kg	50	n.d.	n.d.	70000, max
Antimony, Sb	mg/kg	10	42	73	560, max
Arsenic, As	mg/kg	1.0	n.d.	n.d.	47, max
Barium, Ba	mg/kg	50	350	425	18750, max
Boron, B	mg/kg	50	n.d.	n.d.	15000, max
Cadmium, Cd	mg/kg	1.0	n.d.	n.d.	17, max
Chromium, Cr	mg/kg	0.5	n.d.	n.d.	---
Chromium III, Cr3+ <sup>#1</sup>	mg/kg	0.5	n.d.	n.d.	460, max
Chromium VI, Cr6+ <sup>#2</sup>	mg/kg	0.005	n.d.	n.d.	0.2, 0.053 <sup>a</sup> max
Cobalt, Co	mg/kg	5.0	n.d.	n.d.	130, max
Copper, Cu	mg/kg	50	n.d.	n.d.	7700, max
Lead, Pb	mg/kg	1.0	n.d.	n.d.	23, max
Manganese, Mn	mg/kg	50	n.d.	n.d.	15000, max
Nickel, Ni	mg/kg	50	n.d.	n.d.	930, max
Mercury, Hg	mg/kg	0.5	n.d.	n.d.	94, max
Selenium, Se	mg/kg	5.0	n.d.	n.d.	460, max
Strontium, Sr	mg/kg	50	n.d.	n.d.	56000, max
Tin, Sn <sup>#3</sup>	mg/kg	50	n.d.	n.d.	180000, max
Orgaic tin, TBT <sup>#4</sup>	mg/kg	0.5	n.d.	n.d.	12, max
Zinc, Zn	mg/kg	50	n.d.	n.d.	46000, max

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**Table 1, Cross-reference table for determining category**

Toys Materials	Category I	Category II	Category III
Coatings of paints, varnishes, lacquers, printing inks, polymers, foams, and similar coatings			X
Polymeric and similar materials, including laminates, whether textile reinforced or not, but excluding other textiles			X
Paper and paper board			X
Textiles, whether natural or synthetic			X
Glass, ceramic, metallic materials			X
Wood, fibre board, hard board, bone, leather and other solid materials			X
Compressed paint tablets, materials intended to leave a trace or similar materials in solid form appearing as such in the toy (e.g. the cores of coloring pencils, chalk, crayons)	X		
Pliable modelling materials, including modelling clays and plaster	X		
Liquid paints, including finger paints, varnishes, lacquers, liquid inks in pens and similar materials in liquid form appearing as such in the toy (e.g. slimes, bubble solution)		X	
Glue sticks		X	

**Table 2, migration limits from toy materials**

Elements	Category I mg/kg	Category II mg/kg	Category III mg/kg
Aluminum, Al	5625	1406	70000
Antimony, Sb	45	11.3	560
Arsenic, As	3.8	0.9	47
Barium, Ba	1500	375	18750
Boron, B	1200	300	15000
Cadmium, Cd	1.3	0.3	17
Chromium (III), Cr <sup>3+</sup>	37.5	9.4	460
Chromium (VI), Cr <sup>6+</sup>	0.02	0.005	0.2/0.053 <sup>a</sup>
Cobalt, Co	10.5	2.6	130
Copper, Cu	622.5	156	7700
Lead, Pb	2.0	0.5	23
Manganese, Mn	1200	300	15000
Mercury	7.5	1.9	94
Nickel, Ni	75	18.8	930
Selenium, Se	37.5	9.4	460
Strontium, Sr	4500	1125	56000
Tin, Sn	15000	3750	180000
Organic tin	0.9	0.2	12
Zinc, Zn	3750	938	46000

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## Note A:

- #1 Chromium (Cr) content can be used for screen test for hexavalent chromium and trivalent chromium analysis and to show compliance with the requirement of EN 71-3:2019

- #2 Chromium (Cr) = Hexavalent chromium (Cr (VI)) + Trivalent chromium (Cr (III)), where the chromium content exceeded the limits of hexavalent chromium and/or trivalent chromium, then hexavalent chromium was analyzed by HPLC-ICP-MS and trivalent chromium content was calculated using the formula

- #3 Tin (Sn) content can be used for screen test for organic tins analysis to show compliance with the requirement of EN 71-3:2019.

- #4 The migration of organic tin is expressed as tributyltin (TBT). where the tin content exceeded the limit of organic tin, ten organic tins listed in table were determined by GC-MS and the client should be noted there are other organic tins may be present in toy materials.

Organic tins tested under EN 71-3:2019

Methyl tin (MeT); Butyl tin (BuT); Dibutyl tin (DBT); Tributyl tin (TBT); Tetrabutyl tin (TeBT); n-Octyl tin (MOT); Di-n-octyl tin (DOT); Di-n-propyl tin (DProT); Diphenyl tin (DPhT); Triphenyl tin (TPhT)

<sup>a</sup> the migration limit for chromium (VI) for category III toy material (scraped-off toy material) has been amended by Commission Directive EU No.2018/757. The new limit value (0.053mg/kg) applies from 2019-11-18, before this date the limit value 0.2mg/kg applied.

## 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 \*\*\*\*\*

