Test Report No.: **0154174816b 001** *Page 1 of 20*

Client:	**Hangzhou Hikvision Digital Technology Co., Ltd.** No.555 Qianmo Road,Binjiang District Hangzhou310052,China
Buyer's name:	N/A
Manufacturer's name:	N/A
Test item(s):	**Video Intercom Vandal-Proof Door Station**
Identification/Model No(s):	DS-KB8112-IM DS-KB81XX-YY DS-KB8XYZUVW-ABCDEF
Sample Receiving date:	(1) 2016-06-13 (2) 2016-11-01 (3) 2016-11-24
Delivery condition:	**Apparent good, Samples tested as received**
Test location:	**TÜV Rheinland (Shanghai) Co. Ltd.** 12F, TÜV Rheinland Building No. 177 Lane 777, Guangzhong Road West Shanghai 200072, P.R.China

Test specification: ***Test result:***

Overall results according to tests performed **Pass**

Reference to RoHS (recast): Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, 2011/65/EU last amended by (EU) 2015/863

Other Information:

Test materials were selected as per client's request.

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

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

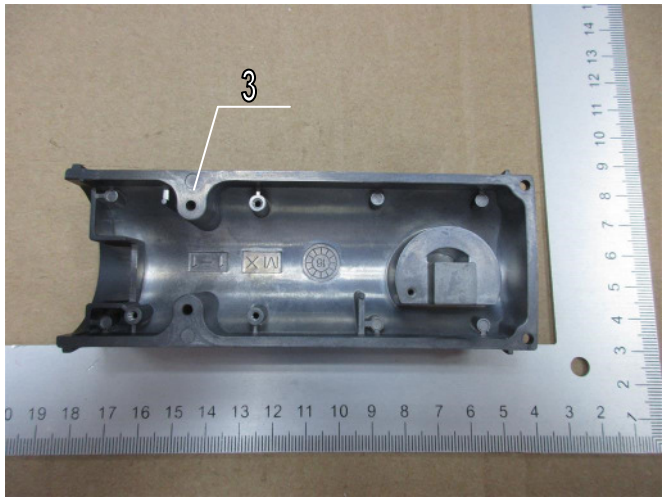
2016-12-07 Joanna Qiao Assistant Manager
Date *Name/Position*

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.

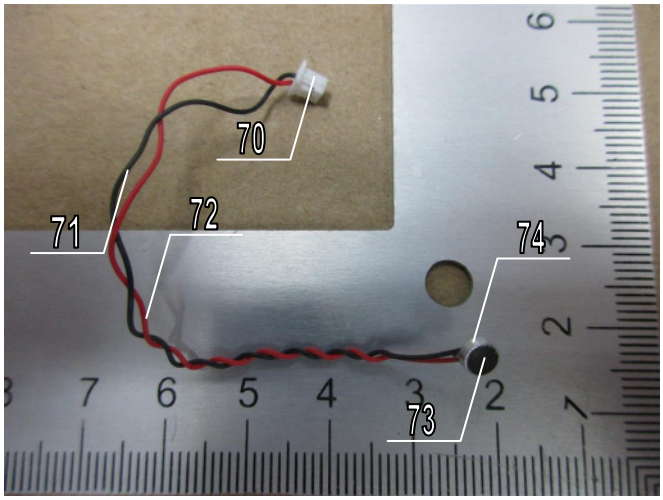
A. Screening Test by XRF Spectroscopy

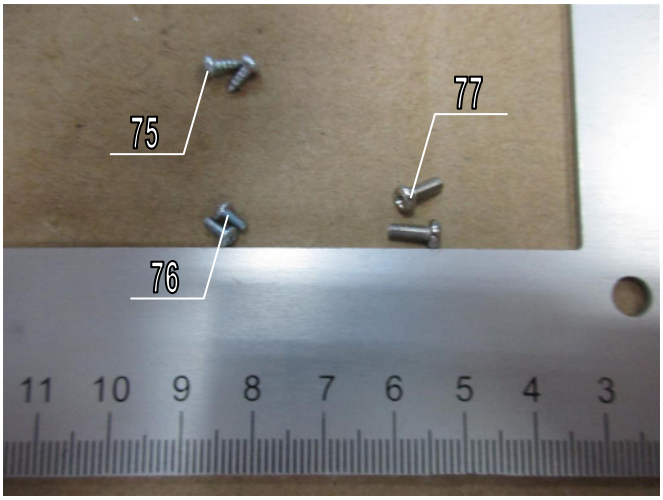
Test Method: Cadmium, Lead, Mercury, Chromium, Bromine
- With reference to IEC 62321-3-1:2013

Testing Period: 2016-06-15 – 2016-12-06



Material No.	Result (mg/kg)				
	Cd	Pb	Cr	Hg	Br
	Limit(mg/kg)				
	100	1000	Cr(VI): 1000	1000	PBB:1000 PBDE:1000
1(coating)	n.d.	n.d.	n.d.	n.d.	n.d.
2(plastic)	n.d.	n.d.	n.d.	n.d.	n.d.
3(metal)	n.d.	d(^1)	n.d.	n.d.	N.A.
4(plastic)	n.d.	n.d.	n.d.	n.d.	n.d.





Material No.	Result (mg/kg)				
	Cd	Pb	Cr	Hg	Br
	Limit(mg/kg)				
	100	1000	Cr(VI): 1000	1000	PBB:1000 PBDE:1000
70(plastic)	n.d.	n.d.	n.d.	n.d.	n.d.
71(plastic)	n.d.	n.d.	n.d.	n.d.	n.d.
72(plastic)	n.d.	n.d.	n.d.	n.d.	n.d.
73(foam)	n.d.	n.d.	n.d.	n.d.	n.d.
74(metal)	n.d.	n.d.	n.d.	n.d.	N.A.
75(metal)	n.d.	n.d.	d(^2)	n.d.	N.A.
76(metal)	n.d.	n.d.	d(^2)	n.d.	N.A.
77(metal)	n.d.	n.d.	n.d.	n.d.	N.A.

Remark:

(^1) The screening result was found in the inconclusive region (X), thus the further wet chemistry tests are suggested.

(^2) The Chromium (VI) content in surface layer has been confirmed with reference to IEC 62321-7-1:2015 Annex.

(*) Component(s)/ materials(s) with an area of less than 2mm x2 mm will not be selected for testing according to RoHS Directive 2011/65/EU due to technical reason.

For the test sample does not have detail materials information provided by client, visually identical materials (e.g. wire insulation, solder points, etc.) will be considered as the same material.

Solder points on a printing circuit board will be examined several times based on optical anomalies or discoloration of the solder point(s) unless the solder point(s) is obviously generated automatically during production.

All other materials will be sampled and tested at one test point representatively.

Abbreviation:

Pb	denotes Lead
Cd	denotes Cadmium
Hg	denotes Mercury
Cr	denotes Chromium
Cr(VI)	denotes Chromium(VI)
Br	denotes Bromine
PBBs	denotes Total Polybrominated Biphenyls
PBDEs	denotes Total Polybrominated Diphenyl Ethers
<	denotes less than
N.A.	denotes Not Applicable
n.d.	denotes Not Detected
d	denotes Detected

XRF Screening limits for different materials:

Materials	Concentration (mg/kg)				
	Cd	Cr	Pb	Hg	Br
Metallic material	P≤ 50 < X ≤150 < F	P≤ 630 < X	P≤ 690 < X≤1360 < F	P≤ 520 < X≤1560 < F	NA
Polymeric material	P≤ 50 < X ≤150 < F	P≤ 630 < X	P≤ 690 < X≤1360 < F	P≤ 520 < X≤1560 < F	P≤ 300 < X
Electronic material	P≤ 50 < X ≤180 < F	P≤ 500 < X	P≤ 550 < X≤1640 < F	P≤410 < X≤1870 < F	P≤ 240 < X

B. Confirmation Test by Wet Chemistry

Material list:

Material No.	Material	Color	Test Plan A = Test HM only B = Test HM + FR C = Test 4P only D = Test HM + FR +4P E = Test HM + 4P F = Test FR + 4P G = Test FR only
1	Coating	Black	C
2	Plastic + printing	White + black	C
3	Metal	Grey	A
6	Textile	Black	C
7	Plastic	Yellow	C
8	Plastic	Black	C
9	Plastic	Black	C
10	Plastic	Black	C
12	PCB board	Green	F
13	Paper + printing	White + black	C
15	Plastic + printing	White + black	F
17	Plastic	Black	C
18	Plastic	Black	C
19	Plastic	Black	C
20	Plastic	Black	C
21	Plastic	Yellow	C
22	Plastic	Light yellow	F
23	Plastic	Black	F
25	Plastic	White	C
27	Paper + printing	White + black	C
28	Plastic	Green	C
30	Plastic	White	C
34	Plastic + printing	Blue + white	C
36	PCB board	Green	F
37	Plastic	Black	C
38	Plastic	Yellow	F
41	Plastic	Black	F
42	Plastic	Black	C
43	Plastic	Black	F
47	Plastic	Black	F

48	Metal	Silver + white	A
49	Plastic	Transparent	C
52	Plastic	White	C
53	Plastic	White	C
54	Metal	Silver	A
55	Plastic	White	C
56	Plastic	Black	C
57	Plastic	Red	C
58	Plastic	Transparent	C
60	Plastic	Black	C
61	Metal	Silver	A
62	Metal	Silver	A
63	Plastic	White	C
64	Foam	Black	C
65	Plastic	Red	C
66	Plastic	White	C
67	Plastic	Orange	C
68	Plastic + printing	White + orange	C
69	Plastic	White	C
70	Plastic	White	C
71	Plastic	Black	C
72	Plastic	Red	C
73	Foam	Black	C
75	Metal	Silver	A
76	Metal	Silver	A

Abbreviation: HM (Heavy metal) = Cd, Pb, Hg, Cr (VI)
FR (Flame Retardant) = PBBs, PBDEs
4P = BBP,DBP,DEHP,DIBP

1. Cadmium, Lead, Chromium (VI), Mercury, Polybrominated biphenyls (PBB) and Polybrominated diphenyl ethers (PBDE)

Test method : Total Cadmium, Lead, Mercury, Chromium
- Ref. to IEC 62321-4:2013 and IEC 62321-5:2013

Chromium (VI)
- For Metal material - Ref. to IEC 62321-7-1:2015
- For Plastic or Electronic material – Ref. to IEC 62321:2008 Annex C
- For Leather material - Ref. to ISO 17075:2007

PBBs, PBDEs – Ref. to IEC 62321-6:2015

Test result:

	Cd	Pb	Cr (VI)	Hg	PBBs (*)	PBDEs (*)
Maximum Permissible Limit ppm (mg/kg)	100	1000	1000	1000	1000	1000

Material No.	(mg/kg)					
	Cd	Pb	Cr^	Hg	PBBs (*)	PBDEs (*)
	RL (mg/kg)					
	10	10	10	10	5	5
3	N.A.	704	N.A.	N.A.	N.A.	N.A.
12	N.A.	N.A.	N.A.	N.A.	N.D.	N.D.
15	N.A.	N.A.	N.A.	N.A.	N.D.	N.D.
22	N.A.	N.A.	N.A.	N.A.	N.D.	N.D.
23	N.A.	N.A.	N.A.	N.A.	N.D.	N.D.
36	N.A.	N.A.	N.A.	N.A.	N.D.	N.D.
38	N.A.	N.A.	N.A.	N.A.	N.D.	N.D.
41	N.A.	N.A.	N.A.	N.A.	N.D.	N.D.
43	N.A.	N.A.	N.A.	N.A.	N.D.	N.D.
47	N.A.	N.A.	N.A.	N.A.	N.D.	N.D.

Material no.	Hexavalent Chromium Content (µg/cm^2)(*1)
	RL: 0.10 µg/cm^2
48	Negative
54	Negative
61	Negative
62	Negative
75	Negative
76	Negative

Abbreviation:	Pb	= Lead
	Cd	= Cadmium
	Hg	= Mercury
	Cr	= Chromium
	Cr (VI)	= Chromium
	PBBs	= Total Polybrominated Biphenyls
	PBDEs	= Total Polybrominated Diphenyl Ethers
	n.d.	= Not Detected (< Reporting Limit)
	RL	= Reporting Limit
	N.A.	= Not Applicable
	^	= The total Chromium have been determined.
	mg/kg	= milligram per kilogram

Remark:

(*1) The total chromium content in Metal sample was found to be exceeded the maximum permissible limit (1000mg/kg). Thus, the Chromium (VI) content in surface layer have been confirmed with reference to IEC 62321-7-1:2015 Annex.

	Chromium (VI) concentration	Qualitative result
Negative	<0.1μg/cm^2	The sample is negative (-ve) for Cr(VI). The Cr(VI) concentration is below the limit of quantification. The coating is considered a non-Cr(VI) based coating.
Inconclusive	≥0.1μg/cm^2 and ≤0.13 μg/cm^2	The result is considered to be inconclusive. Unavoidable coating variations may influence the determination. Recommendation: if additional samples are available, perform a total of 3 trials to increase sampling surface area. Use the averaged result of the 3 trails for the final determination.
Positive	>0.13 μg/cm^2	The sample is positive (+ve) for Cr(VI). Concentration is above the limit of quantification and the statistical margin of error. The sample coating is considered to contain Cr(VI).

(*) The reporting limit for each individual PBBs and individual PBDEs are :

Reporting Limit (mg/kg)		
PBBs	Bromobiphenyl	5
	Dibromobiphenyl	5
	Tribromobiphenyl	5
	Tetrabromobiphenyl	5
	Pentabromobiphenyl	5
	Hexabromobiphenyl	5
	Heptabromobiphenly	5
	Octabromobiphenyl	5
	Nonabromobiphenyl	5
	Decabromobiphenyl	5
PBDEs	Bromodiphenylether	5
	Dibromodiphenyl ether	5
	Tribromodiphenyl ether	5
	Tetrabromodiphenyl ether	5
	Pentabromodiphenyl ether	5
	Hexabromodiphenyl ether	5
	Heptabromodiphenyl ether	5
	Octabromodiphenyl ether	5
	Nonabromodiphenyl ether	5
	Decabromodiphenyl ether	5

2. BBP, DBP, DEHP, DIBP content

Test method**:** Organic solvent extraction, analyzed by GCMS (Ref. to DIN EN 62321-8:2014 (IEC 111/321/CD:2013))

Test result:

	BBP	**DBP**	**DEHP**	**DIBP**
Maximum permissible Limit (mg/kg)	1000	1000	1000	1000

Test No.	**Material No.**	**(mg/kg)**			
		BBP	**DBP**	**DEHP**	**DIBP**
		RL (mg/kg)			
		50	**50**	**50**	**50**
T001	1	n.d.	n.d.	n.d.	n.d.
T002	2+7+8	n.d.	n.d.	n.d.	n.d.
T003	6+64+73	n.d.	n.d.	n.d.	n.d.
T004	9+10+12	n.d.	n.d.	n.d.	n.d.
T005	13+27	n.d.	70	103	n.d.
T006	15+17+18	n.d.	n.d.	n.d.	n.d.
T007	19+20+21	n.d.	n.d.	n.d.	n.d.
T008	22+23+25	n.d.	n.d.	n.d.	n.d.
T009	28+30+34	n.d.	n.d.	n.d.	n.d.
T010	36+37+38	n.d.	n.d.	n.d.	n.d.
T011	41+42+43	n.d.	n.d.	n.d.	n.d.
T012	52+53+55	n.d.	n.d.	n.d.	n.d.
T013	60+63+65	n.d.	n.d.	n.d.	n.d.
T014	66+67+68	n.d.	n.d.	n.d.	n.d.
T015	69+70	n.d.	n.d.	n.d.	n.d.
T016	71+72	n.d.	n.d.	n.d.	n.d.

Abbreviation :

BBP = Benzylbutyl phthalate
DBP = Dibutyl phthalate
DEHP = Bis(2-ethylhexyl) phthalate
DIBP = Diisobutyl phthalate
n.d. = Not Detected (< Reporting Limit)
RL = Reporting Limit
N.A. = Not Applicable
mg/kg = milligram per kilogram

Sample photo:

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