



TEST REPORT

Applicant : Orbbec Inc.

Product Name : 3D camera packing material

Model Name : See page 2

Brand Name : ORBBEC

Test Request : Test as requested by client

Receipt Date : 2024-07-05

Test Date : 2024-07-06 to 2024-07-18

Issue Date : 2024-08-14

Conclusion : Based on the test results of the submitted samples, the results comply with the limits as set by US Model Toxics in Packaging Legislation (TPCH: Toxics in Packaging Clearing House)



Edited by : Deng Baijian
Deng Baijian (Rapporteur)

Approved by : Kenny Li
Kenny Li (Supervisor)

NOTE: This document is issued by Shenzhen Morlab Communications Technology Co., Ltd., the test report shall not be reproduced except in full without prior written permission of the company. The test results apply only to the particular sample(s) tested and to the specific tests carried out which is available on request for validation and information confirmed at our website.





1. Applicant Information

Applicant : Orbbec Inc.

Applicant Address : Orbbec Technology Building, No.88 High-tech North 1st Road, Nanshan District, Shenzhen, China

Manufacturer : Orbbec Inc.

Manufacturer Address : Orbbec Technology Building, No.88 High-tech North 1st Road, Nanshan District, Shenzhen, China

Model Name : Gemini 336L/G40055-180/Gemini 336/G40155-180/
Gemini 335L/G40055-170/Gemini 335/G40155-170/
Gemini 330L/G45055-170/Gemini 330/G45155-170/
Gemini DM330L/G05055-170/Gemini DM330/G05155-170/
Gemini 335Lg/G40055-270/Gemini 335Le/G40055-570/
Gemini 336Le/G40055-580/Gemini 330Le/G45055-570/
Gemini 335Lg/G40055-270/Gemini 336Lg/G40055-280/
Gemini 330Lg/G45055-270/G21 Board/CP0000-G21/
G22 Board/CP0000-G22/G23 Board/CP0000-G23/
Gemini 330e/G44155-470/Gemini 345/G40174-192/
Gemini 345Lg/G40075-272/Gemini 335e/G40155-470/Gemini 336e/
G40155-480

2. Test Requests

According to TPCH(CONEG) packaging directive, to determine the submitted sample

- (1) Lead, Mercury, Cadmium, Hexavalent chromium
- (2) PAEs
- (3) Perfluorinated and polyfluorinated compounds (PFASs)

3. Component Description

Specimen No.	Components Description	Color and Material	Item
1 [#]	Wireless Headphones	All plastic mixed test	See test result page(s).
2 [#]		All paper mixed test	



Part No.	Sample No.	Sample Description	Sample Material
1	A-1	Brown Paper Box	Composite
2	A-2	Brown Paper Box	Composite
3	A-3	Brown Paper Box	Composite
4	A-4	White Paper Label With Black Printing	Composite
5	A-5	Red Pearl Wool	Composite
6	A-6	White Pearl Wool	Composite
7	A-7	Transparent Plastic Packing Bag	Polymer
8	A-8	White Paper Packing Box With Colour Printing	Composite
9	A-9	White Plastic Sealing Film	Polymer
10	A-10	Black Paper Tray	Composite
11	A-11	Black Plastic Nether	Polymer
12	A-12	White Paper Instruction Book With Lettering	Composite
13	A-13	Data Line Transparent Plastic Cable Ties	Polymer

4. Test Results

(1) Lead, Mercury, Cadmium, Hexavalent chromium

Standard/Foundation:

Test Item	Procedure	Apparatus
Hg	EPA 3052:1996	ICP-OES
Cd、Pb		ICP-OES
Cr ⁶⁺	EPA 7196A:1992	UV-VIS



Test results:

Test Item	Test Result(s) (mg/kg)					MDL (mg/kg)	Limit (mg/kg)
	A-1	A-2	A-3	A-4	A-5		
Lead (Pb)	N.D.	N.D.	N.D.	N.D.	N.D.	2	-
Cadmium (Cd)	N.D.	N.D.	N.D.	N.D.	N.D.	2	-
Mercury (Hg)	N.D.	N.D.	N.D.	N.D.	N.D.	2	-
Hexavalent Chromium (Cr ⁶⁺)	N.D.	N.D.	N.D.	N.D.	N.D.	2	-
Cd+Pb+Hg+Cr ⁶⁺	N.D.	N.D.	N.D.	N.D.	N.D.	-	100

Test Item	Test Result(mg/kg)					MDL (mg/kg)	Limit (mg/kg)
	A-6	A-7	A-8	A-9	A-10		
Lead (Pb)	N.D.	N.D.	N.D.	N.D.	N.D.	2	-
Cadmium (Cd)	N.D.	N.D.	N.D.	N.D.	N.D.	2	-
Mercury (Hg)	N.D.	N.D.	N.D.	N.D.	N.D.	2	-
Hexavalent Chromium (Cr ⁶⁺)	N.D.	N.D.	N.D.	N.D.	N.D.	2	-
Cd+Pb+Hg+Cr ⁶⁺	N.D.	N.D.	N.D.	N.D.	N.D.	-	100

Test Item	Test Result(mg/kg)			MDL (mg/kg)	Limit (mg/kg)
	A-11	A-12	A-13		
Lead (Pb)	N.D.	N.D.	N.D.	2	-
Cadmium (Cd)	N.D.	N.D.	N.D.	2	-
Mercury (Hg)	N.D.	N.D.	N.D.	2	-
Hexavalent Chromium (Cr ⁶⁺)	N.D.	N.D.	N.D.	2	-
Cd+Pb+Hg+Cr ⁶⁺	N.D.	N.D.	N.D.	-	100

**(2) PAEs**

Standard/Foundation:

With reference to EPA 3550C:2007, EPA 8270E:2018, Analysis was performed by GC-MS.

Test Item(s)	CAS No.	Unit	MDL	Test Result(s)				Limit (mg/kg)
				A-1	A-2	A-3	A-4	
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Benzyl butyl phthalate (BBP)	85-68-7	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Dibutyl phthalate (DBP)	84-74-2	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Diisobutyl phthalate (DIBP)	84-69-5	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Diisononyl phthalate (DINP)	68515-48-0 28553-12-0	mg/kg	50	N.D.	N.D.	N.D.	N.D.	-
Di-isodecyl phthalate (DIDP)	68515-49-1 26761-40-0	mg/kg	50	N.D.	N.D.	N.D.	N.D.	-
Di-n-hexyl phthalate (DnHP)	84-75-3	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Di-n-octyl phthalate (DnOP)	117-84-0	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	mg/kg	50	N.D.	N.D.	N.D.	N.D.	-
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear (DPP)	84777-06-0	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Bis(2-methoxyethyl) Phthalate (DMEP)	117-82-8	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Di-iso-pentyl phthalate (DIPP)	605-50-5	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Di-n-pentyl phthalate (DnPP)	131-18-0	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Diethyl phthalate (DEP)	84-66-2	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-



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Test Item(s)	CAS No.	Unit	MDL	Test Result(s)				Limit (mg/kg)
				A-1	A-2	A-3	A-4	
N-pentyl-isopentyl phthalate (PIPP)	776297-69-9	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ of dihexyl phthalate	68515-51-5 68648-93-1	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Dicyclohexyl phthalate (DCHP)	84-61-7	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Diisohexyl phthalate (DiHP)	68515-50-4	mg/kg	50	N.D.	N.D.	N.D.	N.D.	-
Diisohexyl phthalate	71850-09-4	mg/kg	50	N.D.	N.D.	N.D.	N.D.	-
Dimethyl phthalate (DMP)	131-11-3	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Dinonyl phthalate (DNP)	84-76-4	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Dipropyl phthalate (DPrP)	131-16-8	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Diisooctyl phthalate (DIOP)	27554-26-3	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Total Phthalates	-	mg/kg	-	N.D.	N.D.	N.D.	N.D.	100

Test Item(s)	CAS No.	Unit	MDL	Test Result(s)				Limit (mg/kg)
				A-5	A-6	A-7	A-8	
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Benzyl butyl phthalate (BBP)	85-68-7	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Dibutyl phthalate (DBP)	84-74-2	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Diisobutyl phthalate (DIBP)	84-69-5	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Diisononyl phthalate (DINP)	68515-48-0 28553-12-0	mg/kg	50	N.D.	N.D.	N.D.	N.D.	-



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Test Item(s)	CAS No.	Unit	MDL	Test Result(s)				Limit (mg/kg)
				A-5	A-6	A-7	A-8	
Di-isodecyl phthalate (DIDP)	68515-49-1 26761-40-0	mg/kg	50	N.D.	N.D.	N.D.	N.D.	-
Di-n-hexyl phthalate (DnHP)	84-75-3	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Di-n-octyl phthalate (DnOP)	117-84-0	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	mg/kg	50	N.D.	N.D.	N.D.	N.D.	-
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear (DPP)	84777-06-0	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Bis(2-methoxyethyl) Phthalate (DMEP)	117-82-8	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Di-iso-pentyl phthalate (DIPP)	605-50-5	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Di-n-pentyl phthalate (DnPP)	131-18-0	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Diethyl phthalate (DEP)	84-66-2	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
N-pentyl-isopentyl phthalate (PIPP)	776297-69-9	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ of dihexyl phthalate	68515-51-5 68648-93-1	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Dicyclohexyl phthalate (DCHP)	84-61-7	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Diisohexyl phthalate (DiHP)	68515-50-4	mg/kg	50	N.D.	N.D.	N.D.	N.D.	-
Diisohexyl phthalate	71850-09-4	mg/kg	50	N.D.	N.D.	N.D.	N.D.	-



REPORT No.: SZ24070067R03

Test Item(s)	CAS No.	Unit	MDL	Test Result(s)				Limit (mg/kg)
				A-5	A-6	A-7	A-8	
Dimethyl phthalate (DMP)	131-11-3	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Dinonyl phthalate (DNP)	84-76-4	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Dipropyl phthalate (DPrP)	131-16-8	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Diisooctyl phthalate (DIOP)	27554-26-3	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Total Phthalates	-	mg/kg	-	N.D.	N.D.	N.D.	N.D.	100

Test Item(s)	CAS No.	Unit	MDL	Test Result(s)				Limit (mg/kg)
				A-9	A-10	A-11	A-12	
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Benzyl butyl phthalate (BBP)	85-68-7	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Dibutyl phthalate (DBP)	84-74-2	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Diisobutyl phthalate (DIBP)	84-69-5	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Diisononyl phthalate (DINP)	68515-48-0 28553-12-0	mg/kg	50	N.D.	N.D.	N.D.	N.D.	-
Di-isodecyl phthalate (DIDP)	68515-49-1 26761-40-0	mg/kg	50	N.D.	N.D.	N.D.	N.D.	-
Di-n-hexyl phthalate (DnHP)	84-75-3	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Di-n-octyl phthalate (DnOP)	117-84-0	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	mg/kg	50	N.D.	N.D.	N.D.	N.D.	-
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-



REPORT No.: SZ24070067R03

Test Item(s)	CAS No.	Unit	MDL	Test Result(s)				Limit (mg/kg)
				A-9	A-10	A-11	A-12	
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear (DPP)	84777-06-0	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Bis(2-methoxyethyl) Phthalate (DMEP)	117-82-8	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Di-iso-pentyl phthalate (DIPP)	605-50-5	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Di-n-pentyl phthalate (DnPP)	131-18-0	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Diethyl phthalate (DEP)	84-66-2	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
N-pentyl-isopentyl phthalate (PIPP)	776297-69-9	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl diesters with $\geq 0.3\%$ of dihexyl phthalate	68515-51-5 68648-93-1	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Dicyclohexyl phthalate (DCHP)	84-61-7	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Diisohexyl phthalate (DiHP)	68515-50-4	mg/kg	50	N.D.	N.D.	N.D.	N.D.	-
Diisohexyl phthalate	71850-09-4	mg/kg	50	N.D.	N.D.	N.D.	N.D.	-
Dimethyl phthalate (DMP)	131-11-3	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Dinonyl phthalate (DNP)	84-76-4	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Dipropyl phthalate (DPrP)	131-16-8	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Diisooctyl phthalate (DIOP)	27554-26-3	mg/kg	30	N.D.	N.D.	N.D.	N.D.	-
Total Phthalates	-	mg/kg	-	N.D.	N.D.	N.D.	N.D.	100

Test Item(s)	CAS No.	Unit	MDL	Test Result(s)	Limit
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				A-13	(mg/kg)
Bis(2-ethylhexyl) phthalate (DEHP)	117-81-7	mg/kg	30	N.D.	-
Benzyl butyl phthalate (BBP)	85-68-7	mg/kg	30	N.D.	-
Dibutyl phthalate (DBP)	84-74-2	mg/kg	30	N.D.	-
Diisobutyl phthalate (DIBP)	84-69-5	mg/kg	30	N.D.	-
Diisononyl phthalate (DINP)	68515-48-0 28553-12-0	mg/kg	50	N.D.	-
Di-isodecyl phthalate (DIDP)	68515-49-1 26761-40-0	mg/kg	50	N.D.	-
Di-n-hexyl phthalate (DnHP)	84-75-3	mg/kg	30	N.D.	-
Di-n-octyl phthalate (DnOP)	117-84-0	mg/kg	30	N.D.	-
1,2-Benzenedicarboxylic acid, di-C6-8-branched alkyl esters, C7-rich (DIHP)	71888-89-6	mg/kg	50	N.D.	-
1,2-Benzenedicarboxylic acid, di-C7-11-branched and linear alkyl esters (DHNUP)	68515-42-4	mg/kg	30	N.D.	-
1,2-Benzenedicarboxylic acid, dipentylester, branched and linear (DPP)	84777-06-0	mg/kg	30	N.D.	-
Bis(2-methoxyethyl) Phthalate (DMEP)	117-82-8	mg/kg	30	N.D.	-
Di-iso-pentyl phthalate (DIPP)	605-50-5	mg/kg	30	N.D.	-
Di-n-pentyl phthalate (DnPP)	131-18-0	mg/kg	30	N.D.	-
Diethyl phthalate (DEP)	84-66-2	mg/kg	30	N.D.	-
N-pentyl-isopentyl phthalate (PIPP)	776297-69-9	mg/kg	30	N.D.	-
1,2-benzenedicarboxylic acid, di-C6-10-alkyl esters; 1,2-benzenedicarboxylic acid, mixed decyl and hexyl and octyl	68515-51-5 68648-93-1	mg/kg	30	N.D.	-



Test Item(s)	CAS No.	Unit	MDL	Test Result(s)	Limit (mg/kg)
				A-13	
diesters with $\geq 0.3\%$ of dihexyl phthalate					
Dicyclohexyl phthalate (DCHP)	84-61-7	mg/kg	30	N.D.	-
Diisohexyl phthalate (DiHP)	68515-50-4	mg/kg	50	N.D.	-
Diisohexyl phthalate	71850-09-4	mg/kg	50	N.D.	-
Dimethyl phthalate (DMP)	131-11-3	mg/kg	30	N.D.	-
Dinonyl phthalate (DNP)	84-76-4	mg/kg	30	N.D.	-
Dipropyl phthalate (DPrP)	131-16-8	mg/kg	30	N.D.	-
Diisooctyl phthalate (DIOP)	27554-26-3	mg/kg	30	N.D.	-
Total Phthalates	-	mg/kg	-	N.D.	100

(3) Perfluorinated and polyfluorinated compounds (PFASs)

Standard/Foundation:

With reference to EN14582:2016, Analysis was performed by IC.

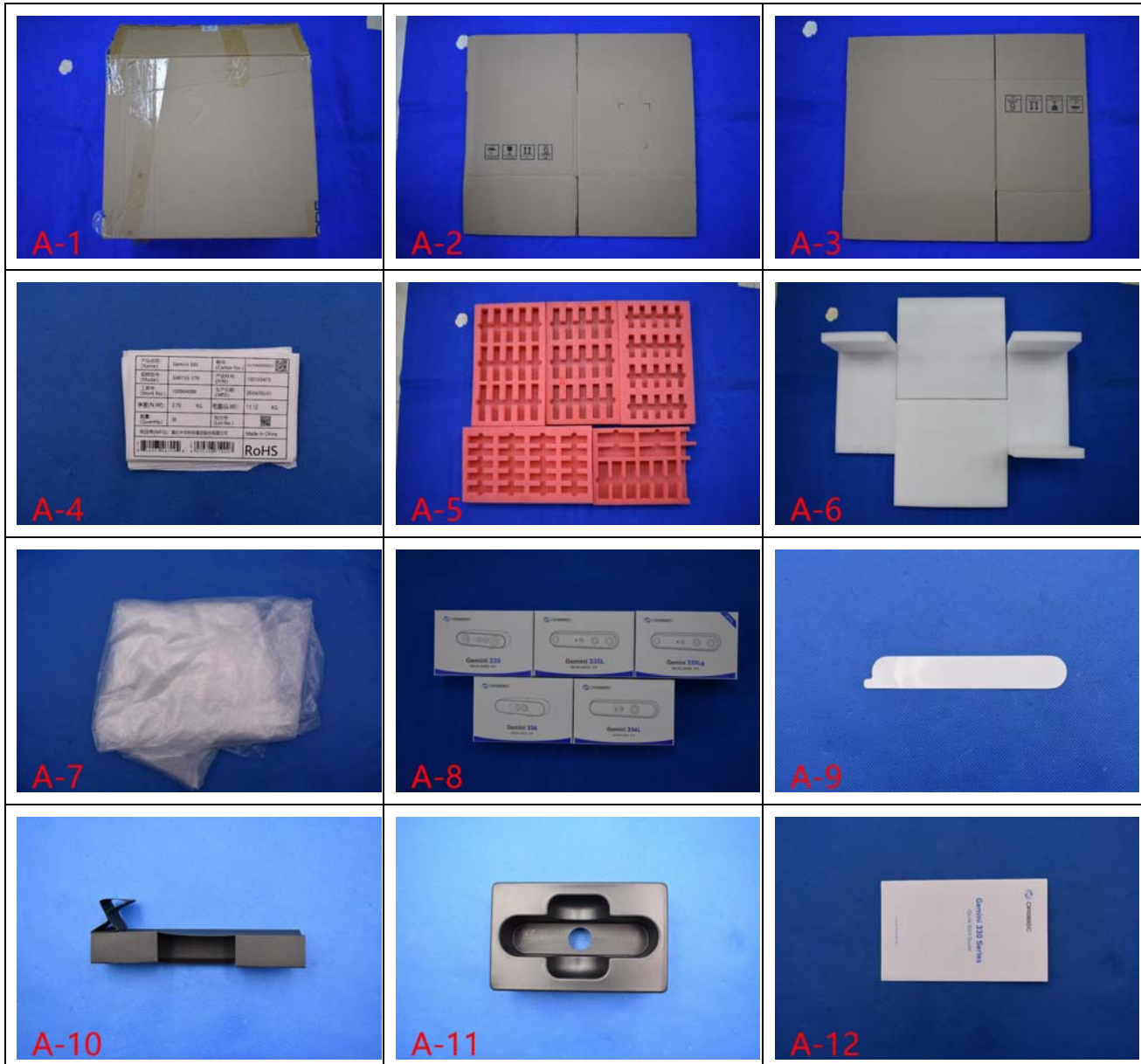
Test Item	Test Result(s) (mg/kg)		MDL (mg/kg)	Limit (mg/kg)
	1 [#]	2 [#]		
Fluorine (F)	N.D.	N.D.	50	-
Perfluorinated and polyfluorinated compounds (PFASs)	**N.D.	**N.D.	-	Not Detected

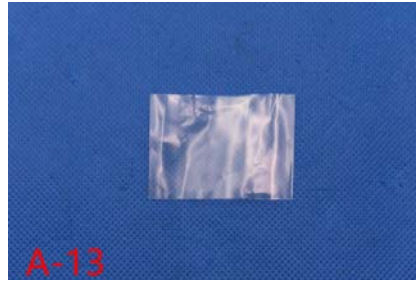
Remark:

- 1) ppm = mg/kg
- 2) N.D. = Not Detected (<MDL)
- 3) MDL = Method Detection Limit
- 4) "-" = Not Regulated
- 5) When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% Confidence intervals.
- 6) ** The substance is calculated by using the test results of Fluorine.

- 7) # Mixed test was requested by the client, the test results do not represent the individual content of single material, the test data are for reference only.
- 8) As requested by the client, Perfluorinated and polyfluorinated compounds (PFASs) test result of the report is quoted from test report 20240710R12661X-1 dated on Jul. 18, 2024.

5. Photo of Sample





Annex A General Information

1.1 Identification of the Responsible Testing Laboratory

Laboratory Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Laboratory Address:	FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

1.2 Identification of the Responsible Testing Location

Name 1:	Shenzhen Morlab Communications Technology Co., Ltd.
Address 1:	FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Name 2:	CCIC Southern Testing CO., Ltd.
Address 2:	Electronic Testing Building, No. 43 Shahe Road, Xili Jiedao, Nanshan District, Shenzhen, Guangdong, China (pc: 518055)

1.3 Change History

Change History		
Version	Date	Reason for change
1.0	2024-08-14	First edition

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