

## TEST REPORT

Test Report # 21W-024632 Date of Report Issue: November 5, 2021  
Date of Sample Received: October 22, 2021 Pages: Page 1 of 22

### CLIENT INFORMATION:

Company: Polyconcept GBS  
Recipient: kathy lu  
Recipient Email: kathy.lu@polyconceptgbs.com



### SAMPLE INFORMATION:

Description: Thor Copper Vacuum Insulated Bottle 25oz Straw Lid  
Arctic Zone® Titan Thermal HP® Tumbler 24oz

Article No.: 1600-36WH/BK/NY/GY, Purchase Order Number: 1916602:1600-36WH 1916600:  
1600-39WH/BK/NY/GY/SL 1600-36GY 1916601:  
1600-36NY 1916603:  
1600-36BK  
1916616:1600-39WH 1916613:  
1600-39GY 1916614:  
1600-39NY 1916615:  
1600-39BK 1916612:  
1600-39SL

Factory No.: 10942 Toy Co./Agency: -  
Vendor No.: 10531 Country of Origin: China  
Country of Distribution: United States Labeled Age Grade: -  
Quantity Submitted: 9 styles Requested Age Grade: -  
Testing Period: 10/26/2021-11/04/2021 Tested Age Grade: -



## TEST REPORT

Test Report # 21W-024632 Date of Report Issue: November 5, 2021  
Date of Sample Received: October 22, 2021 Pages: Page 2 of 22

---

**OVERALL RESULT:**

**🔍 PASS with information**

Please refer to the following pages for test result summary and appropriate notes.

QIMA (HANGZHOU) TESTING CO., LTD.

QIMA (HANGZHOU) TESTING CO., LTD.

*Ada Guo*

*Jeremy Xu*

---

Ada Guo  
Assist Physical Laboratory Manager

---

Jeremy Xu  
Chemical Laboratory Supervisor



**TEST RESULTS SUMMARY:**

At the request of the client, the following tests were conducted:

CONCLUSION	TEST(S) CONDUCTED
PASS	CPSIA Section 101 & 16 CFR 1303, Total Lead in Paints and Surface Coatings
PASS	California Proposition 65, Total Lead in Paints and Surface Coatings
PASS	California Proposition 65, Total Lead in Substrate Materials
PASS	Canadian Surface Coating Materials Regulations SOR/2016-193, Total Lead in Paints and Surface Coatings
PASS	Canadian Consumer Products Containing Lead Regulations (SOR/2018-83), Total Lead Content
PASS	Client's requirement, Bisphenol A content
PASS	California Proposition 65, Phthalates (DBP, BBP, DEHP, DINP, DIDP, DnHP)
PASS	FDA 21 CFR 177.1520, Polypropylene Copolymers
PASS	FDA 21 CFR 177.1520, Polyethylene
PASS	FDA 21 CFR 180.22 and 181.32, Acrylonitrile/Butadiene/Styrene Copolymers
PASS	FDA GRAS Specifications, Total Chromium in Stainless Steel Food Containers
PASS	FDA 21 CFR 177.1210, Closures with Sealing Gaskets
PASS	FDA 21 CFR 177.2600, Rubber
Information only	Heat Retention Test
Information only	Cold Retention Test



**DETAILED RESULTS:**

**CPSIA Section 101 & 16 CFR 1303, Total Lead in Paints and Surface Coatings**

Test Method: CPSC-CH-E1003-09.1

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	7+8	9+10	---	---	---	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	47	25	---	---	---	<b>90</b>
<b>Conclusion</b>	PASS	PASS	---	---	---	

*Note:*

mg/kg = Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 15 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.



**DETAILED RESULTS:**

**California Proposition 65, Total Lead in Paints and Surface Coatings**

Test Method: CPSC-CH-E1003-09.1

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	7+8	9+10	---	---	---	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	47	25	---	---	---	<b>90</b>
<b>Conclusion</b>	PASS	PASS	---	---	---	

*Note:*

mg/kg =Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit = 15mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.

*Remark:*

The specification is quoted from client’s requirement.



**DETAILED RESULTS:**

**California Proposition 65, Total Lead in Substrate Materials**

Test Method: CPSC-CH-E1001-08.3 (Metal), CPSC-CH-E1002-08.3 (Non-Metal)  
Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+11+13	2	3+4+5	6	12	Limit (mg/kg)
Test Item	Result (mg/kg)					
Total Lead (Pb)	ND	19	ND	ND	ND	<b>100</b>
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

*Note:*

mg/kg =Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit =15 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.

*Remark:*

The specification is quoted from client's requirement.



## DETAILED RESULTS:

### Canadian Surface Coating Materials Regulations SOR/2016-193, Total Lead in Paints and Surface Coatings

Test Method: ASTM F963-17 Clause 8.3.1

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	7+8	9+10	---	---	---	Total Limit (mg/kg)
Test Item	Result (mg/kg)					
Total Lead (Pb)	47	25	---	---	---	90
Conclusion	PASS	PASS	---	---	---	

#### Note:

mg/kg=Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit: Pb=15 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.



**DETAILED RESULTS:**

**Canadian Consumer Products Containing Lead Regulations (SOR/2018-83), Total Lead Content**

Test Method: ASTM F963-17 Clause 8.3.1

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	1+11+13	2	3+4+5	6	12	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	ND	19	ND	ND	ND	<b>90</b>
<b>Conclusion</b>	PASS	PASS	PASS	PASS	PASS	

*Note:*

mg/kg=Milligrams per kilogram)

LT = Less than

ND = Not detected (Reporting Limit = 15 mg/kg)

Composite results are based on specimen of least mass resulting in highest potential concentration.



**DETAILED RESULTS:**

**Client's requirement, Bisphenol A content**

Test Method: In-House Method

Analytical Method: Liquid Chromatography-Mass Spectrometer Mass Spectrometer (LC-MS/MS)

Specimen No.		1	3	5	11	Client's limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Bisphenol A (BPA)	80-05-7	ND	ND	ND	ND	<b>Not Detected</b>
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

Specimen No.		13	---	---	---	Client's limit (mg/kg)
Test Item	CAS No.	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Bisphenol A (BPA)	80-05-7	ND	---	---	---	<b>Not Detected</b>
<b>Conclusion</b>		PASS	---	---	---	

*Note:*

mg/kg=milligram per kilogram

ND=Not Detected(Reporting limit = 1.0mg/kg)



**DETAILED RESULTS:**

**California Proposition 65, Phthalates (DBP, BBP, DEHP, DINP, DIDP, DnHP)**

Test Method: CPSC-CH-C1001-09.4  
 Analytical Method: Gas Chromatography with Mass Spectrometry

Specimen No.		1+11+13	3+4+5	7+8	9+10	Limit ( mg/kg)
Test Item	CAS No.	Result ( mg/kg)	Result ( mg/kg)	Result ( mg/kg)	Result ( mg/kg)	
Dibutyl phthalate (DBP)	84-74-2	ND	ND	ND	ND	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	ND	ND	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	ND	ND	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	ND	ND	1000
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	ND	ND	ND	1000
Di-n-hexyl phthalate (DnHP)	84-75-3	ND	ND	ND	ND	1000
<b>Conclusion</b>		PASS	PASS	PASS	PASS	

*Note:*  
 mg/kg (Milligrams per kilogram) = 0.0001 % w/w (Percent by weight)  
 LT = Less than  
 ND = Not detected (Reporting Limit = 150 mg/kg)  
 Composite results are based on specimen of least mass resulting in highest potential concentration.

*Remark:*  
 The specification is quoted from client's requirement.



**DETAILED RESULTS:**

**FDA 21 CFR 177.1520, Polypropylene Copolymers**

Test Method: FDA 21 CFR 177.1520

Specimen No.			11	RL	Limit
Test Item	Test Condition		Result		
	Temp.	Duration			
Density (g/cc)	NA	NA	0.92	NA	0.85 – 1.00
n-Hexane extractive (% w/w)	Reflux	2 hours or total dissolved	ND	0.4	5.5
Xylene extractive (% w/w)	Reflux	2 hours or total dissolved	ND	1	30
<b>Conclusion</b>			PASS		

*Note:*

Temp. = Temperature

°C = Degree Celsius

g/cc = Grams per cubic centimeter

% w/w = Percent by weight

NA = Not applicable

LT = Less than

ND = Not detected. Result value is less than reporting limit (RL).

*Remark:*

The specification is quoted from 21 CFR 177.1520 (c) 3.1a.



**DETAILED RESULTS:**

**FDA 21 CFR 177.1520, Polyethylene**

Test Method: FDA 21 CFR 177.1520

Specimen No.			13	RL	Limit
Test Item	Test Condition		Result		
	Temp.	Duration			
Density (g/cc)	NA	NA	0.91	NA	0.85-1.00
n-Hexane extractive (% m/m)	Reflux	2 hours	0.5	0.4	5.5
Xylene extractive (% m/m)	Reflux	2 hours	1	1.0	11.3
<b>Conclusion</b>			PASS		

*Note:*

Temp. = Temperature

°C = Degree Celcius

g/cc = Grams per cubic centimeter

% m/m = Percent by mass

NA = Not applicable

LT = Less than

ND = Not detected. Result value is less than reporting limit (RL).

*Remark:*

The specification is quoted from 21 CFR 177.1520 (c) 2.1.



**DETAILED RESULTS:**

**FDA 21 CFR 180.22 and 181.32, Acrylonitrile/Butadiene/Styrene Copolymers**

Test Method: FDA 21 CFR 180.22 and 181.32, EN 13130-3:2004  
 Analytical Method: Headspace-Gas Chromatography with Mass Spectrometry

Acrylonitrile Monomers:

Specimen No.		1	RL	Limit	
Test Simulant	Test Condition				Result
	Temp.	Duration			
3% Acetic acid extractive (mg/in <sup>2</sup> )	120°F	2 hours	ND	<b>0.001</b>	<b>0.003</b>
<b>Conclusion</b>			PASS		

*Note:*

Temp. = Temperature  
 °F = Degree Fahrenheit  
 mg/in<sup>2</sup> = Milligrams per square inch  
 LT = Less than  
 ND = Not detected. Result value is less than reporting limit (RL).

*Remark:*

The specification is quoted from 21 CFR 181.32 (b) (3).



**DETAILED RESULTS:**

**FDA GRAS Specifications, Total Chromium in Stainless Steel Food Containers**

Test Method: SN/T 2718-2010

Analytical Method: Inductively Coupled Plasma-Optical Emission Spectrometry

Specimen No.	6	---	---	---	---	Limit (% m/m)
Test Item	Result (% m/m)					
Total Chromium (Cr)	17.91	---	---	---	---	<b>GT 16</b>
<b>Conclusion</b>	PASS	---	---	---	---	

*Note:*

% m/m = Percent by mass

GT = Greater than

*Remark:*

The limit is quoted from ANSI/NSF 51-1997 Section 7.1.2.



**DETAILED RESULTS:**

**FDA 21 CFR 177.1210, Closures with Sealing Gaskets**

Test Method: FDA 21 CFR 177.1210

Specimen No.			3	RL	Limit
Test Item	Test Condition		Result		
	Temp.	Duration			
Distilled water extractive (mg/kg)	Fill boiling	Cooling to 100°F	ND	<b>10</b>	<b>50</b>
n-Heptane extractive (mg/kg)	120°F	0.25 hours	ND	<b>10</b>	<b>50</b>
8% Ethanol extractive (mg/kg)	Fill boiling	Cooling to 100°F	ND	<b>10</b>	<b>50</b>
<b>Conclusion</b>			PASS		

Specimen No.			5	RL	Limit
Test Item	Test Condition		Result		
	Temp.	Duration			
Distilled water extractive (mg/kg)	Fill boiling	Cooling to 100°F	ND	<b>10</b>	<b>50</b>
n-Heptane extractive (mg/kg)	120°F	0.25 hours	ND	<b>10</b>	<b>50</b>
8% Ethanol extractive (mg/kg)	Fill boiling	Cooling to 100°F	ND	<b>10</b>	<b>50</b>
<b>Conclusion</b>			PASS		

*Note:*

Temp. = Temperature

°F = Degree Fahrenheit

ppm (Parts per million) = mg/kg (Milligrams per kilogram)

LT = Less than

ND = Not detected. Result value is less than reporting limit (RL).

*Remark:*

The specification is quoted from 21 CFR 177.1210 Table 2 Section 3.



**DETAILED RESULTS:**

**FDA 21 CFR 177.2600, Rubber**

Test Method: FDA 21 CFR 177.2600

Specimen No.			4	RL	Limit
Test Item	Test Condition		Result		
	Temp.	Duration			
Distilled water extractive (mg/in <sup>2</sup> )	Reflux	First 7 hours	ND	<b>2</b>	<b>20</b>
Distilled water extractive (mg/in <sup>2</sup> )	Reflux	Succeeding 2 hours	ND	<b>0.1</b>	<b>1</b>
n-Hexane extractive (mg/in <sup>2</sup> )	Reflux	First 7 hours	ND	<b>15</b>	<b>175</b>
n-Hexane extractive (mg/in <sup>2</sup> )	Reflux	Succeeding 2 hours	0.9	<b>0.4</b>	<b>4</b>
<b>Conclusion</b>			PASS		

*Note:*

Temp. = Temperature

mg/in<sup>2</sup> = Milligrams per square inch

LT = Less than

ND = Not detected. Result value is less than reporting limit (RL).

*Remark:*

The specification is quoted from 21 CFR 177.2600 (e) and 177.2600 (f).



**DETAILED RESULTS:**

**Heat Retention Test**

Test Method: Pour boiling water into the container (to a height of approximately 1 inch under the rim). Temperature measurement was then taken and the lid screwed on hand-tight. The temperature is measured in °F at every 1 minute until the temperature reaches 120°F, the amount of time to drop from the initial temperature to 120°F is shown in Table 1. Average time from initial temperature drop to 120°F is shown in Table 2.

Specimen	Style
	Arctic Zone® Titan Thermal HP® Tumbler 24oz
A	8hrs52mins
B	8hrs50mins
C	8hrs58mins
D	8hrs39mins
E	8hrs24mins
F	8hrs27mins

Table 1

Remark:

- Specimen A - Style: Arctic Zone® Titan Thermal HP® Tumbler 24oz - White
- Specimen B - Style: Arctic Zone® Titan Thermal HP® Tumbler 24oz - Grey
- Specimen C - Style: Arctic Zone® Titan Thermal HP® Tumbler 24oz - Black
- Specimen D - Style: Arctic Zone® Titan Thermal HP® Tumbler 24oz - White
- Specimen E - Style: Arctic Zone® Titan Thermal HP® Tumbler 24oz - Navy
- Specimen F - Style: Arctic Zone® Titan Thermal HP® Tumbler 24oz - Grey

	Style
	Arctic Zone® Titan Thermal HP® Tumbler 24oz
Average time from initial temperature drop to 120°F	8hrs42mins

Table 2



**DETAILED RESULTS:**

**Cold Retention Test**

Test Method: The products were conditioned at 72°F for 1 minute. The products were then filled with ice cube as much as the container can fit in. Fill the product to its normal capacity of 60°F water, insert thermocouple, and the lid was screwed hand-tight. The temperature was measured in °F at every 1 minute until the temperature reaches 72°F, the amount of time to change from initial temperature to 72°F was recorded in Table 3. Average time from initial temperature rise to 72°F is shown in Table 4.

Specimen	Style
	Arctic Zone® Titan Thermal HP® Tumbler 24oz
A	122hrs44mins
B	122hrs18mins
C	114hrs50mins
D	114hrs41mins
E	122hrs55mins
F	124hrs30mins

Table 3

**Remark:**

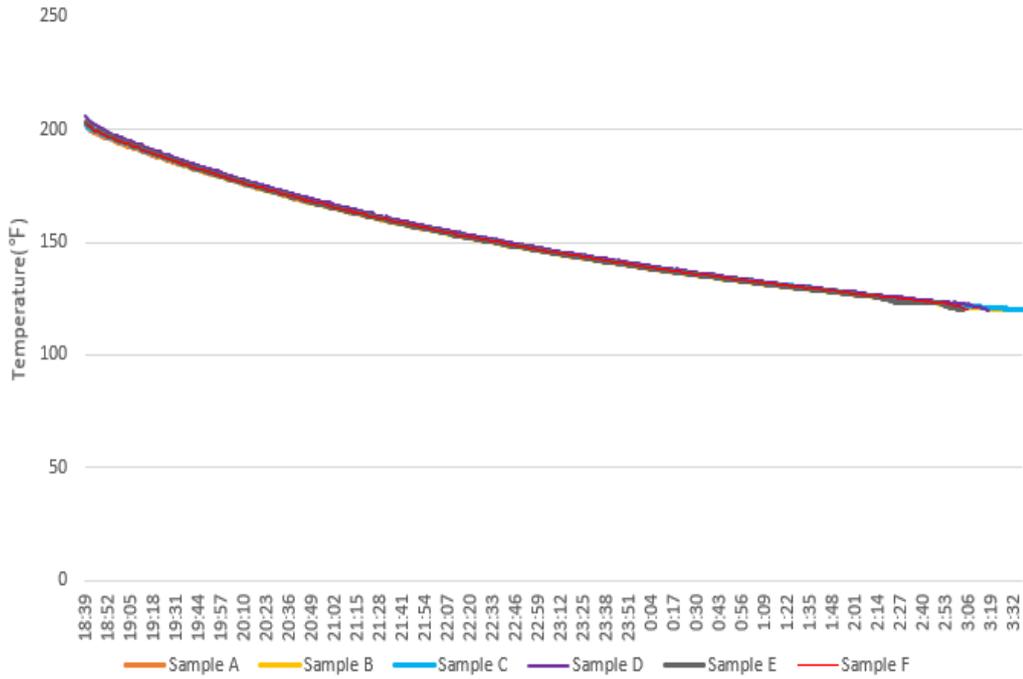
- Specimen A - Style: Arctic Zone® Titan Thermal HP® Tumbler 24oz - Black
- Specimen B - Style: Arctic Zone® Titan Thermal HP® Tumbler 24oz - White
- Specimen C - Style: Arctic Zone® Titan Thermal HP® Tumbler 24oz - Navy
- Specimen D - Style: Arctic Zone® Titan Thermal HP® Tumbler 24oz – White
- Specimen E - Style: Arctic Zone® Titan Thermal HP® Tumbler 24oz - Grey
- Specimen F - Style: Arctic Zone® Titan Thermal HP® Tumbler 24oz - Grey

	Style
	Arctic Zone® Titan Thermal HP® Tumbler 24oz
Average time from initial temperature rise to 72 °F	120hrs40mins

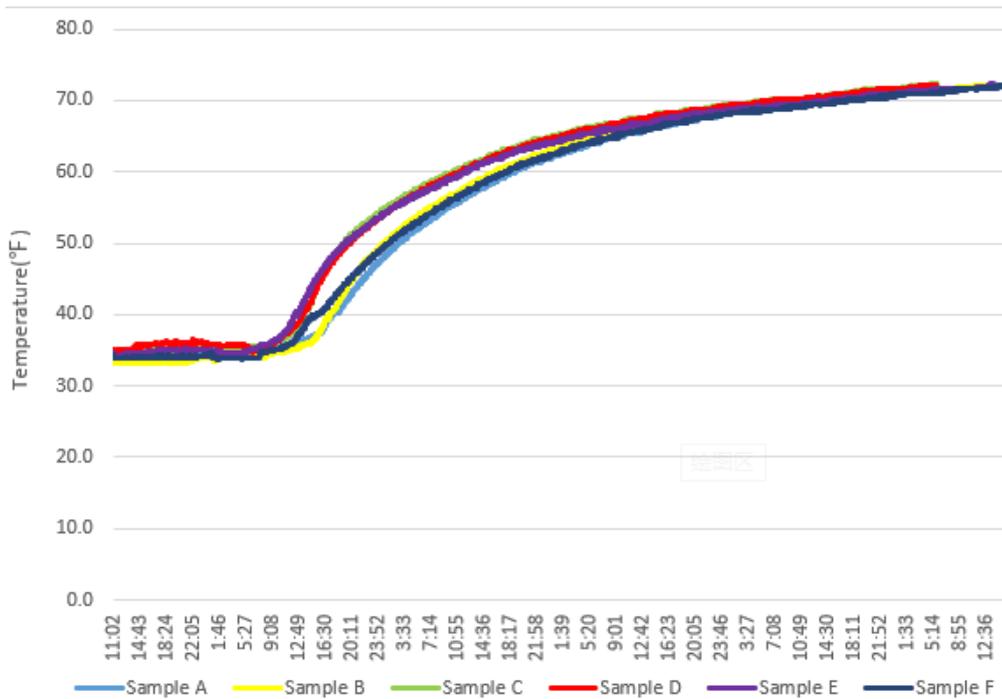
Table 4



**DETAILED RESULTS:**



Graph 1 - Heat Retention of Arctic Zone® Titan Thermal HP® Tumbler 24oz



**SPECIMEN DESCRIPTION:**

Specimen No.	Specimen Description	Location
1	Black plastic	Lid (black style)
2	Silvery metal	Handle (black style)
3	Black soft plastic	Air hole stopper (black style)
4	Black soft plastic	Conjoint part to assemble straw (black style)
5	Translucent soft plastic	Seal ring (black style)
6	Silvery metal	Interior (black style)
7	Grey coating	Main body (grey style)
8	Navy coating	Main body (navy style)
9	Black coating	Main body (black style)
10	White coating	Main body (white style)
11	Black plastic	Lid (white high style)
12	Silvery metal	Handle (white high style)
13	Translucent plastic	Straw (white high style)



QIMA (HANGZHOU) TESTING CO., LTD. ♦ 4-5/F A2 BLDG NO. 1213 HUOJU SOUTH ROAD PUYAN STREET BINJIANG DISTRICT HANGZHOU CHINA

♦ Email: Labtesting@qima.com ♦ Tel: (86) 571 8999 7158.

Test(s) marked with 'φ' was subcontracted to external laboratory.

The test result(s) and conclusion(s) in this report relate only to the sample(s) as received and method /regulation section(s) tested as described herein. If it is not further specified in the report, the decision rule for stating conformity is based on the QIMA decision rule.

This test report may not be reproduced in whole or in part, without written approval of QIMA (Hangzhou) Testing Co., Ltd.

**SAMPLE PHOTO:**



**SAMPLE PHOTO:**



-End Report-

