

TEST REPORT

Test Report # 21W-022033 Date of Report Issue: September 23, 2021
Date of Sample Received: September 7, 2021 Pages: Page 1 of 19

CLIENT INFORMATION:

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



SAMPLE INFORMATION:

Description: Arctic Zone® Titan Thermal HP® Copper Tumbler 12oz
Article No.: 1600-28WH/BK Purchase Order Number: 1916617-1600-28WH
1916618-1600-28BK
Factory No.: 11054 Toy Co./Agency: -
Vendor No.: 10583 Country of Origin: China
Country of Distribution: United States Labeled Age Grade: -
Quantity Submitted: 6 pcs per color Requested Age Grade: -
Testing Period: 09/09/2021-09/22/2021 Tested Age Grade: -

OVERALL RESULT:

PASS with information

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

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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 GRAS Specifications, Total Chromium in Stainless Steel Food Containers
PASS	FDA 21 CFR 177.1210, Closures with Sealing Gaskets
PASS	FDA 21 CFR 180.22 and 181.32, Acrylonitrile/Styrene Copolymers
PASS	FDA 21 CFR 177.1240, 1,4-Cyclohexylene Dimethylene Terephthalate and 1,4-Cyclohexylene Dimethylene Isophthalate Copolymer ^φ
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.	1+2	---	---	---	---	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	ND	---	---	---	---	90
Conclusion	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.	1+2	---	---	---	---	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	ND	---	---	---	---	90
Conclusion	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.	3	4+5	6	---	---	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	ND	ND	ND	---	---	100
Conclusion	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.	1+2	---	---	---	---	Total Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	ND	---	---	---	---	90
Conclusion	PASS	---	---	---	---	

Note:

mg/kg=Milligrams per kilogram

LT = Less than

ND = Not detected (Reporting Limit: Pb=15 mg/kg; Hg = 10 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.	3	4+5	6	---	---	Limit (mg/kg)
Test Item	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	Result (mg/kg)	
Total Lead (Pb)	ND	ND	ND	---	---	90
Conclusion	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: Gas Chromatography-Mass Spectrometer
 Liquid Chromatography-Mass Spectrometer (LC-MS)

Specimen No.	4	5	6	---	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	---	Not Detected
Conclusion	PASS	PASS	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+2	4+5	6	---	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	---	1000
Benzyl butyl phthalate (BBP)	85-68-7	ND	ND	ND	---	1000
Di-(2-ethylhexyl) phthalate (DEHP)	117-81-7	ND	ND	ND	---	1000
Diisononyl phthalate (DINP)	28553-12-0 68515-48-0	ND	ND	ND	---	1000
Diisodecyl phthalate (DIDP)	26761-40-0 68515-49-1	ND	ND	ND	---	1000
Di-n-hexyl phthalate (DnHP)	84-75-3	ND	ND	ND	---	1000
Conclusion		PASS	PASS	PASS	---	

Note:

mg/kg (Milligrams per kilogram) = 0.0001 % m/m (Percent by mass)
 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 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.	3	---	---	---	---	Limit (% m/m)
Test Item	Result (% m/m)	Result (% m/m)	Result (% m/m)	Result (% m/m)	Result (% m/m)	
Total Chromium (Cr)	18.21	---	---	---	---	GT 16
Conclusion	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.			6	RL	Limit
Test Item	Test Condition		Result		
	Temp.	Duration			
Distilled water extractive (mg/kg)	Fill boiling	Cooling to 100°F	ND	10	50
n-Heptane extractive (mg/kg)	120°F	0.25 hours	ND	10	50
8% Ethanol extractive (mg/kg)	Fill boiling	Cooling to 100°F	ND	10	50
Conclusion			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 180.22 and 181.32, Acrylonitrile/Styrene Copolymers

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

Acrylonitrile Monomers:

Specimen No.		4		Result	RL	Limit
Test Simulant	Test Condition		ND			
	Temp.	Duration				
3% Acetic acid extractive (mg/in ²)	120°F	2 hours	ND	0.001	0.003	
Conclusion			PASS			

Note:

Temp. = Temperature
 °F = Degree Fahrenheit
 mg/in² = 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 21 CFR 177.1240, 1,4-Cyclohexylene Dimethylene Terephthalate and 1,4- Cyclohexylene Dimethylene Isophthalate Copolymer^φ

Test Method: FDA 21 CFR 177.1240

Specimen No.		5	---			
Test Item	Test Condition		Result (%)	Result (%)	RL (%)	Limit (%)
	Temp.	Duration				
Distilled water extractive	Reflux	2 hours	ND	---	0.01	0.05
n-Hexane extractive	Reflux	2 hours	ND	---	0.01	0.05
Ethyl acetate extractive	Reflux	2 hours	0.577	---	0.01	0.7
Conclusion			PASS	---		

Note:

Temp. = Temperature

% w/w = Percent by weight

LT = Less than

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



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® Copper Tumbler 12oz
A	4hrs52mins
B	2hrs06mins
C	4hrs29mins
D	4hrs22mins
E	4hrs53mins
F	2hrs04mins

Table 1

Remark:

- Specimen A - Style: Arctic Zone® Titan Thermal HP® Copper Tumbler 12oz-White
- Specimen B - Style: Arctic Zone® Titan Thermal HP® Copper Tumbler 12oz-Black
- Specimen C - Style: Arctic Zone® Titan Thermal HP® Copper Tumbler 12oz-White
- Specimen D - Style: Arctic Zone® Titan Thermal HP® Copper Tumbler 12oz-Black
- Specimen E - Style: Arctic Zone® Titan Thermal HP® Copper Tumbler 12oz-White
- Specimen F - Style: Arctic Zone® Titan Thermal HP® Copper Tumbler 12oz-Black

	Style
	Arctic Zone® Titan Thermal HP® Copper Tumbler 12oz
Average time from initial temperature drop to 120°F	3hrs48mins

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® Copper Tumbler 12oz
A	27hrs09mins
C	24hrs51mins
D	25hrs32mins
G	26hrs35mins
H	27hrs20mins
I	27hrs37mins

Table 3

Remark:

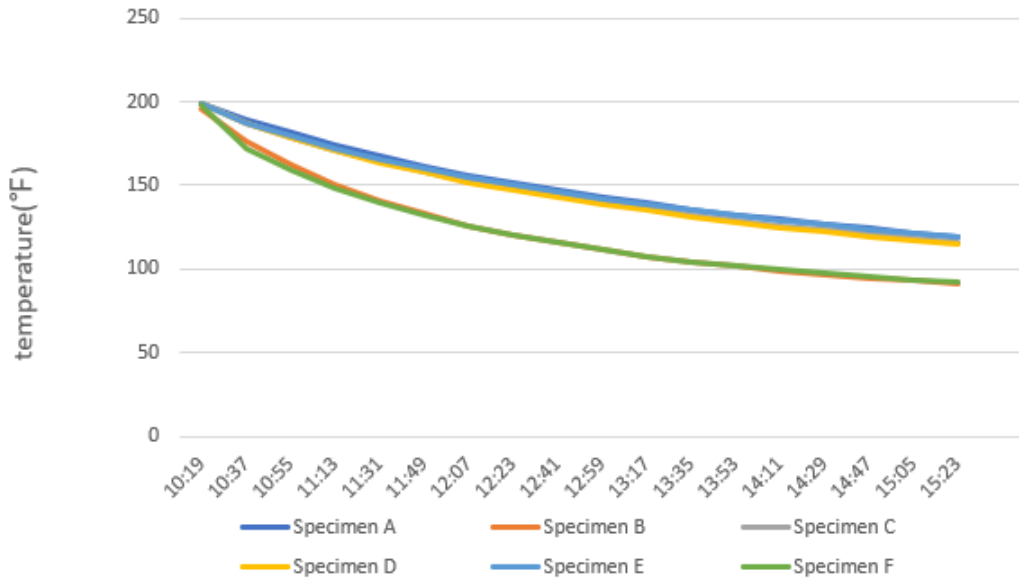
- Specimen A - Style: Arctic Zone® Titan Thermal HP® Copper Tumbler 12oz-White
- Specimen C - Style: Arctic Zone® Titan Thermal HP® Copper Tumbler 12oz-White
- Specimen D - Style: Arctic Zone® Titan Thermal HP® Copper Tumbler 12oz-Black
- Specimen G - Style: Arctic Zone® Titan Thermal HP® Copper Tumbler 12oz-Black
- Specimen H - Style: Arctic Zone® Titan Thermal HP® Copper Tumbler 12oz-Black
- Specimen I - Style: Arctic Zone® Titan Thermal HP® Copper Tumbler 12oz-White

	Style
	Arctic Zone® Titan Thermal HP® Copper Tumbler 12oz
Average time from initial temperature rise to 72 °F	26hrs30mins

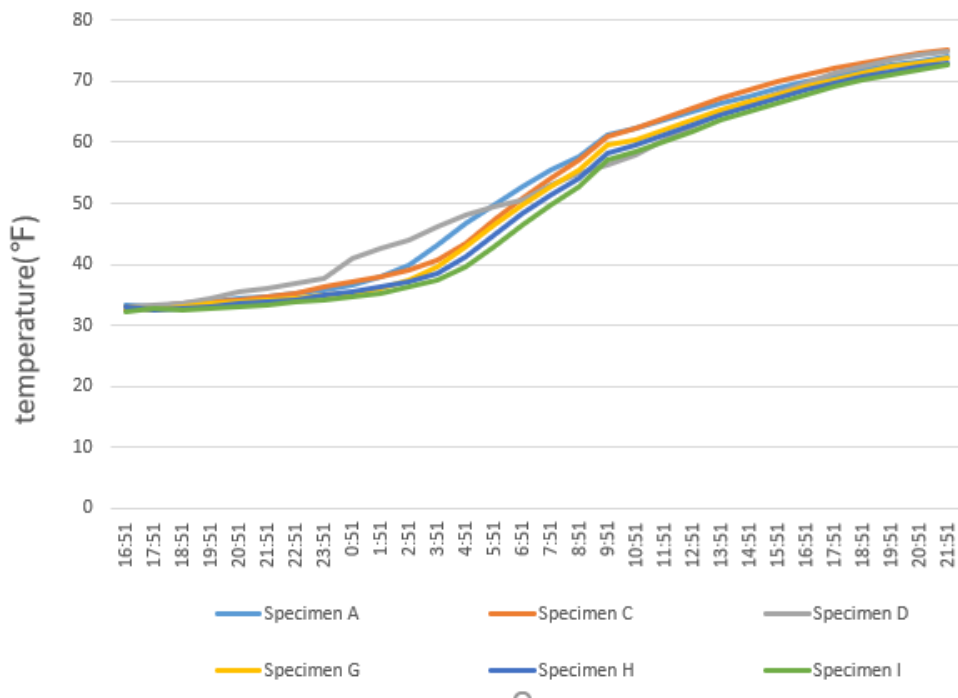
Table 4



DETAILED RESULTS:



Graph 1 - Heat Retention of Arctic Zone® Titan Thermal HP® Copper Tumbler 12oz



Graph 2 - Cold Retention of Arctic Zone® Titan Thermal HP® Copper Tumbler 12oz



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SPECIMEN DESCRIPTION:

Specimen No.	Specimen Description	Location
1	White coating	Main body (white style)
2	Black coating	Main body (black style)
3	Silvery metal	Interior (black style)
4	Transparent plastic	Lid (black style)
5	Transparent plastic	Slider (black style)
6	Translucent soft plastic	Sealing ring (black style)



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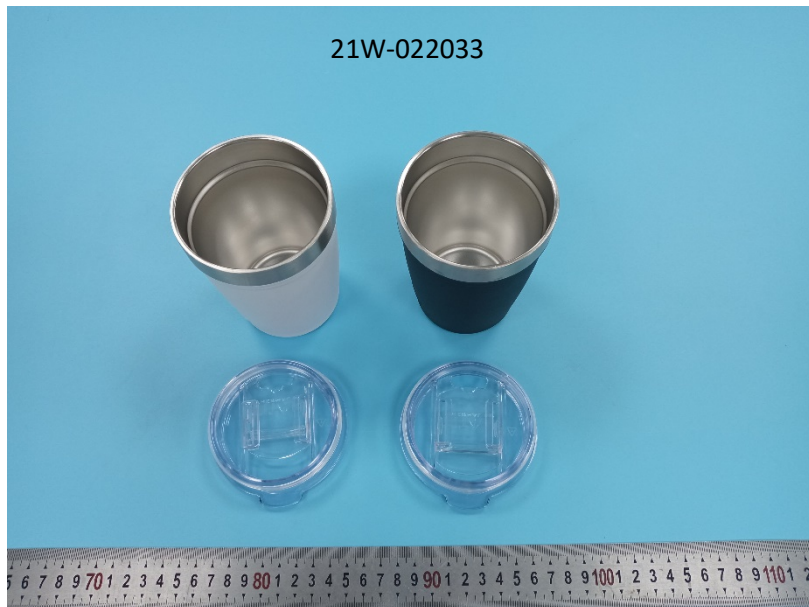
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SAMPLE PHOTO:



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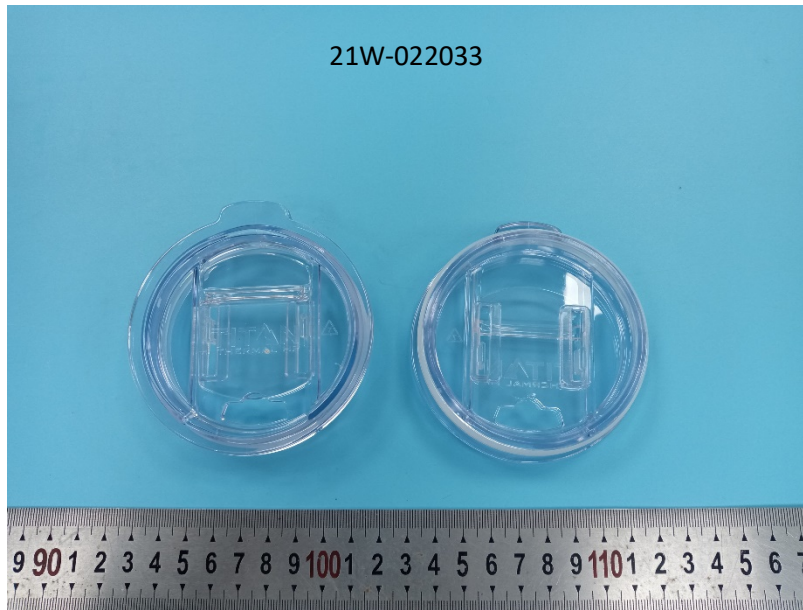
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SAMPLE PHOTO:



-End Report-

