
Technical Report: 16240200149

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FEBRUARY 02, 2024



Bureau Veritas Consumer Products Service Vietnam Limited (Hanoi Branch),

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AROMA BAY CANDLES CO LTD
TIEU TRA, HUNG DAO, DUONG KINH DISTRICT

OVERALL RATING
X

PASS
FAIL

ATTN: VIVIAN
CC: /

Date Received: JANUARY 20, 2024
Date of Report: FEBRUARY 02, 2024
Date of Revision: /
Full Package Test: NO

Test Type:			
☐ Fabric	☐ Garment	☐ Trim	☐ Home Soft goods
☐ Accessories	☐ Footwear	☐ Jewelry	☒ Home Hard goods
☐ Leather, Suede, and Shearling			

Product Phase:			
☐ Development	☒ Bulk Production	☐ Licensee Request	☐ RLC Request
☐ Sub-Component	☐ Retest Retest, Previous Report No.		

Style Info			
Brand:	RALPH LAUREN	Season:	US OPEN
Style #:	615958219001	Board #'s:	/
Color Name (s):	WHITE	Material Weight/ Thickness:	/
Material Type:	CANDLES	Finishing (Treatment):	NO
Sample Description:	SANDALWOOD-SINGLE WICK	Merch. Org:	HOME

Vendor Name:	AROMA BAY CANDLES CO LTD	Vendor SAP#:	0200010648
Agent / Sourcing Office:	/	Country of Destination:	US REGION, EU REGION
PO #s:	4701783442, 4701783447, 4701783448, 4701783449, 4701783450, 4701783451, 4701783452, 4701783453, 4701783454, 4701783455, 4701783456, 4701783457, 4701783458, 4701783459	Material ID No. :	000000000
Raw Material Vendor:	/	Claimed Fiber content	/
Supp. Art. Name/#	/	GCC/CPC Required:	NO
Azo Dye Certificate	NO	Allergenic Disperse Dye Certificate	NO

Tests Selected	
Material & Product Stage:	CANDLE
Test Requested:	CANDLES V.040418 CONTAINER OR ACCESSORIES V. 040418 HF - GLASS NON-FOOD CONTACT V.090216 HF - METAL NON-FOOD CONTACT V.090216
Functional Claims:	NO
Previous Report No.:	N/A

Regulatory Test Performed	Pass	Fail	Data
Lead Cored Wick	X		
Lead (Pb) and Cadmium (Cd) in Externally Decorated Area	X		
Mercury (Hg) of Homogeneous Materials	X		
Lead in Accessible Components	X		
Performance Test Performed	Pass	Fail	Data
Assessment of Afterglow	X		
Aesthetic Attributes of Candles	X		
Behaviour by Self-Extinguishing at End of Burning Process	X		
Fire Safety for Candle Surface Temperature	X		
Flame Height	X		
Re-ignition after Extinguishing	X		
Secondary ignition	X		
Smoke after Extinguishing	X		
Stability	X		
Standard Specification for Fire Safety of Candles	X		
Standard Specification for Fire Safety of Candles			X
Annealing and Heat Strength of Glass Containers: Glass Containers Produced for use as Candle Containers	X		
End of Useful Life	X		
Thermal Shock: Glass Containers for use as Candle Containers	X		
Corrosion Resistance - Salt Spray Test	X		

EXECUTIVE SUMMARY:

The submitted sample is rated as **PASS** with satisfactory performance in the requested test(s). Please refer to enclosed worksheets for the test results.

Note(s):

- This report includes the test result(s) which was conducted & reviewed by Analytical department.

If there is any question regarding this report, please contact the following lab personnel:

Primary contact:

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Backup contact

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BUREAU VERITAS CPS VIETNAM LTD.



**JESSY CAI
DEPUTY LAB MANAGER**

SAMPLE DESCRIPTION ASSIGNED BY LABORATORY

Test Item(s)	Sample description/ Location	Material	Style(s)
I001	White core wick (inside candle)	Textile	-
I002	Transparent glass (Glass candle)	Glass	-
I003	Silvery metal (Brand name on glass candle)	Metal	-

TEST RESULT

Total Lead Cored Wick Content

Test Method : 16 CFR 1500.17(a)(13)

Maximum Allowable Limit :		Not allowed
-	Unit	Result
Test Item(s)	-	I001
Parameter	-	-
Total Lead (Pb)	mg/kg	ND
Conclusion	-	PASS

Note / Key :

ND = Not detected

NA = Not applicable

">" = Greater than

mg/kg = milligram(s) per kilogram = ppm = part(s) per million

Detection Limit (mg/kg) : 10

Tested per client's request

TEST RESULT

Total Lead (Pb) and Cadmium (Cd) Content in Externally Decorated Area:

Test Method : With reference to EPA 3052

Maximum Allowable Limit :		90 mg/kg
-	Unit	Result
Test Item(s)	-	I002
Parameter	-	-
Total Lead (Pb)	mg/kg	ND
Total Cadmium (Cd)	mg/kg	ND
Conclusion	-	PASS

Note / Key :

ND = Not detected

NA = Not applicable

">" = Greater than

mg/kg = milligram(s) per kilogram = ppm = part(s) per million

Detection Limit (mg/kg) : 10

Tested per client's request.

TEST RESULT

Total Mercury of Homogeneous Materials Content

Test Method : Wet Chemistry Method (SOR/2014-254)

Maximum Allowable Limit :		1000 mg/kg	
-	Unit	Result	
Test Item(s)	-	I002	I003
Parameter	-	-	-
Total Mercury (Hg)	mg/kg	ND	ND
Conclusion	-	PASS	PASS

Note / Key :

ND = Not detected

">" = Greater than

NR = Not requested

mg/kg = milligram(s) per kilogram = ppm = part(s) per million

% = percent

10 000 mg/kg = 1 %

Detection Limit (mg/kg) : 10

Tested per client's request.

TEST RESULT

Lead in Accessible components:

Test Method : EPA 3050B and/ or 6010B

Maximum Allowable Limit :		90 mg/kg
-	Unit	Result
Test Item(s)	-	I003
Parameter	-	-
Total Lead (Pb)	mg/kg	ND
Conclusion	-	PASS

Note / Key :

ND = Not detected

NA = Not applicable

">" = Greater than

mg/kg = milligram(s) per kilogram = ppm = part(s) per million

Detection Limit (mg/kg) : 10



**BUREAU
VERITAS**

BV Lab Number: Technician **16240200149**
 Name: NHAT
 Test Date: JANUARY 20, 2024
 Reviewed By/Date: JUN/ FEBRUARY 02, 2024

TEST PROTOCOL REPORT
CANDLE COMPLIANCE PROTOCOLS: CANDLES V.040418

TEST NAME	TEST METHOD	GLOBAL DEFAULT STANDARD			NOTES
		CRITERIA		REQUIREMENT	
Assessment of Afterglow	EN 15493, Sec. 4.5(a) & 9.3	Afterglow extinguishes within time period	≤	20 seconds (Afterglow that exceeds 20 seconds = FAIL)	M/PASS
Aesthetic Attributes of Candles	EN 15493	Visual Inspection during candle burning performance tests: 1) If candle produces excessive smoky flame during use; 2) If any liquid wax release (leakage) occurs through sidewall of candle or container 3) If the wick falls into the wax, causing the candle to prematurely self-extinguish 4) If the candle sidewall collapses 5) Wax consumption 6) Soot buildup Grade 5: Negligible or no build-up Grade 4: Slight build-up Grade 3: Noticeable build-up Grade 2: Considerable build-up Grade 1: Severe build-up	IV V	The following characteristics will be noted if observed: 1) Excessive smoky flame 2) Leakage 3) Premature Self-extinguish 4) Sidewall Collapse 70% 4	M/PASS
Behaviour by Self-Extinguishing at End of Burning Process	EN 15493, Sec. 4.4. (Modified)	Candle shall cease to support combustion, and candle flame shall go out on its own and cannot be relit.	=	Pass	M/PASS
Fire Safety for Candle Surface Temperature	Internal Method: UL-TS-106: edition 5.05	Top Temperature Metal Non-Metallic Middle Temperature Metal Non-Metallic	IV V IV V	50°C 60°C 50°C 60°C	M/PASS



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TEST NAME	TEST METHOD	GLOBAL DEFAULT STANDARD			NOTES
		CRITERIA		REQUIREMENT	
Flame Height	EN 15493, Sec. 4.3 & 9.4 (Modified); ASTM F2417 (Modified)	Flame height (for tea lights) Flame height (for all candles, EXCEPT tea lights)	< <	30 mm (1.18 inches) 50 mm (2 inches) (MODIFICATION: flame height for all candle types reduced from 75 mm (3 inches)).	M/PASS Sample 1: 1 in Sample 2: 18 mm Sample 3: 16 mm Sample 4: 18 mm
Flame Impingement Test	Internal Method	Sidewall of interior surface of the candleholder/vessel is oriented at about 45 deg., and is burnt by a candle flame for 5 minutes	"FOR DATA PURPOSES ONLY"	There shall not be ignition, cracks or breaks that result in sharp point/sharp edge, or that allow the flame to reach outside of the candleholder/vessel.	NT
Flammability of raw material fragrance or liquid	16 CFR 1500.43a/16 CFR 1500.3(c)(6)	Flashpoint	>	150F	NA
Lead Cored Wick	16 CFR 1500.17(a)(13)	BANNED	-	NOT ALLOWED	M/PASS
Lead in Surface Coating	CPSD-AN-00001-MTHD	Total Lead	≤	90 ppm (0.009% by weight)	NA
Re-ignition after Extinguishing	EN 15493, Sec. 4.5(c) & 9.3	After extinguishing, the wick shall not spontaneously relight.	=	Pass	M/PASS
Secondary ignition	EN 15493, Sec. 4.2 & 9.3. (Modified); ASTM F2417	No secondary ignition shall occur when candle is burned as specified, including flashover.	=	Pass (MODIFICATION: removal of "requirement for more than 10 seconds from product requirement"; addition of flashover)	M/PASS
Smoke after Extinguishing	EN 15493, Sec. 4.5(b) & 9.3	Smoke shall not last longer than 20 seconds after extinguishing.	=	Pass	M/PASS
Stability	EN 15493, Sec. 4.1 & 9.2; ASTM F2417	Free-standing candle shall not tip over when tested on a slope of 10 degrees.	=	Pass	M/PASS



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TEST NAME	TEST METHOD	GLOBAL DEFAULT STANDARD			NOTES
		CRITERIA		REQUIREMENT	
Standard Specification for Fire Safety of Candles	ASTM F2417 (Modified)	Burn Test parameters: - candles burned in 4-hour burn cycles until end of useful life (FOR GEL CANDLES, use 8-hour burn cycle) ; - wicks will NOT be trimmed prior to burn test; - laboratory temperature between 68F to 86F with minimum draft; - candles spaced at least 20cm apart;	-	Flame heights observed at periodic intervals and recorded at end of each burn cycle.	M/PASS Sample 1: 1 in
Standard Specification for Fire Safety of Candles	ASTM F2417 (Modified)	Burn Test parameters: - one candle (1) specimen for each fragrance/style shall be burned using an 8-hour burn cycle until end of useful life; - wicks will NOT be trimmed prior to burn test; - laboratory temperature between 68F to 86F with minimum draft; - candles spaced at least 20cm apart;	"FOR DATA PURPOSES ONLY"	Results noted "FOR DATA PURPOSES ONLY." Flame heights observed at periodic intervals and recorded at end of each burn cycle. (MODIFICATION: Burn cycle changed from 4-hours to 8-hours and wicks will not be trimmed despite manufacturer instructions.)	DATA Sample 5: 1 in
Protocol Notes:					
1. Flame Impingement Test to be conducted only UPON REQUEST. Results to be recorded and marked "FOR DATA PURPOSES ONLY."					



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TEST PROTOCOL REPORT					
CANDLE COMPLIANCE PROTOCOLS: CONTAINER OR ACCESSORIES V. 040418					
TEST NAME	TEST METHOD	GLOBAL DEFAULT STANDARD			NOTES
		CRITERIA		REQUIREMENT	
Annealing and Heat Strength of Glass Containers: Glass Containers Produced for use as Candle Containers	ASTM F2179, Sec 4.1, 5.1.1, 5.4.2.1 & 5.4.3.	Scratch test without fractures or show a real temper of <4 using a polariscope.	-	Report the number of fractures, if any.	M/PASS
End of Useful Life	ASTM F2417	Container shall not crack or break	=	Pass	M/PASS
Fire Safety for Candle Accessories (Candle Rings, Candle Burners, Potpourri Burners, Holders)	ASTM F2601-12, Sec. 4.1., 4.2., 4.3. and 4.4.	Maximum Average Burn Time Recorded Maximum Individual Burn Time Flame Spread Observed Flame Height Cracking/Breakage of Burner Secondary Ignition	≤ ≤ = ≤ = =	30 seconds 60 seconds NO 3 inches (76mm) NO NO	NA
Flammability of Solids	16 CFR 1500.44 (Modified)	Burn rate	≤	0.1 inches/seconds	NA
Surface Temperature Test for Candle Holder or Tart Burner during Burning	UL-TS-106 Edition 5.0; ASTM F2417-04, Sec. 5.2 (Modified)	Maximum measured surface temperature Metal Surfaces Non-Metallic Surfaces	≤ ≤	122F (50C) 140F (60C) NOTE: If temperature exceeds requirements, location and temperature must be stated on test report.	NA
Thermal Shock: Glass Containers for use as Candle Containers	ASTM F2179, Sec. 4.2	Withstand a 90°F thermal shock differential between the hot and cold water baths. (Typical bath temperatures are 160F for hot water bath and 70F for cool water bath). (70°F - 160°F)	-	Product shall withstand one thermal shock cycle without any visible cracking or fractures.	M/PASS
			-		
Protocol Notes:					
1. See HOME NON-FOOD CONTACT Protocols for additional testing requirements based on container material type and any paint/surface coating.					



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TDCR- TECHNICAL DEVELOPMENT CENTER RESOURCE

TEST PROTOCOL REPORT

HF - GLASS NON-FOOD CONTACT V.090216

CATEGORY	TEST NAME	TEST METHOD	HOME/GLOBAL DEFAULT STANDARD			NOTES
Home	Lead (Pb) and Cadmium (Cd) in Externally Decorated Area	EPA 3052	Total Lead (Pb) Content	<=	90 ppm	M/PASS
			Total Cadmium (Cd) Content	<=	90 ppm	
Home	Total Mercury of Homogeneous Materials	Wet Chemistry Method (SOR/2014-254)	Mercury (Hg)	<=	1000 ppm	M/PASS

Protocol Notes:

1. If the glass is soldered, add the **Lead in Solder** test (EPA 3052)

TDCR- TECHNICAL DEVELOPMENT CENTER RESOURCE

TEST PROTOCOL REPORT

HF - METAL NON-FOOD CONTACT V.090216

CATEGORY	TEST NAME	TEST METHOD	HOME/GLOBAL DEFAULT STANDARD			NOTES
Home	Corrosion Resistance - Salt Spray Test	ISO 9227	No noticeable corrosion, oxidation, or visual change observed	=	Pass	M/PASS
Home	Total Mercury of Homogeneous Materials	Wet Chemistry Method (SOR/2014-254)	Mercury (Hg)	<=	1000 ppm	M/PASS
Home	Lead in Accessible Components	EPA 3050B and/or 6010B	Lead (Pb)	<=	90 ppm	M/PASS

Protocol Notes:

1. If metal is in direct and prolonged skin contact, add the **Nickel (Ni) Release** test (EC No. 1907/2006 Annex XVII and its amendments item no.27/ EN 1811 / EN 12472).