



TEST REPORT

LAB LOCATION:TURKEY
LAB NO. : (7212)053-0102
SERVICE TYPE: Regular
DATE IN: February 22th, 2012
DATE OUT:March 7th, 2012

MATERIAL SUBMITTED : LAVA METAL DÖKÜM SAN.TIC A.Ş.
Organize San. Bölgesi 22.cadde No:3 Eskişehir
(Attn: İlhan Argın)

SUPPLIER REFERENCE : Emayeli Demir Döküm Tencere/siyah

SAMPLE DESCRIPTION : Enameled Cast iron cookware/black

SUMMARY OF TEST RESULTS

TEST REQUIRED	PASS	FAIL	
Sensory Test – two simulants (LFGB)	X		
Leachable Lead and Cadmium (84/500/EEC)	X		
Leachable Cobalt (LFGB)	X		
Extractable Lead and Cadmium (FDA)	X		

Bureau Veritas Consumer Products Services Turkey
BV CPS Test Lab. Ltd. Sti.

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Customer Service Supervisor-Hardline

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Team Leader - Analytical

Remark: Sensory Test was sub-contracted to BV- Germany in this report.

EXECUTIVE SUMMARY:

As per customer's request, submitted samples have been tested for the Sensory Analysis, Leachable Lead and Cadmium, and Cobalt and Extractable Lead and Cadmium according to the requirements of LFGB, 84/500/EEC and FDA. The Samples are rated as "PASS". Please see enclosed test results.

C/N AC

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Remark: The tests which can not be performed in Turkey were sub-contracted to BV CPS Germany for those results in this report.

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-SUBMITTED SAMPLES-



Sample Description Assigned by Laboratory:

Test Item	Description	Client Claimed Material
1	Enameled Cast iron cookware/black	Enameled cast iron



TEST RESULTS

Sensory Test per LFGB –Change of Odour (Fatty food-Aqueous)-Butter: DIN 10955

Parameter	Unit	Result	Maximum Allowable Limit
		Item 1	
Sensory Test (grade)	-	0	≤ 2.5
Conclusion	-	PASS	-

Note: “ \leq ” = less than and equal

Ratings:

- 0= no observable deviation
- 1= minor deviation
- 2= small deviation
- 3= clear deviation
- 4= significant deviation

Method: Change of odour through direct contact, fatty food (aqueous)-butter DIN 10955

Sensory Test per LFGB –Change of Odour (Acidic and Aqueous food)- Still Water: DIN 10955

Parameter	Unit	Result	Maximum Allowable Limit
		Item 1	
Sensory Test (grade)	-	0	≤ 2.5
Conclusion	-	PASS	-

Note: “ \leq ” = less than and equal

Ratings:

- 0= no observable deviation
- 1= minor deviation
- 2= small deviation
- 3= clear deviation
- 4= significant deviation

Method: Change of odour through direct contact, Acidic and Aqueous food- Still Water: DIN 10955



Sensory Test per LFGB –Change of Taste (Fatty food-Aqueous)-Butter: DIN 10955

Parameter	Unit	Result	Maximum Allowable Limit
		Item 1	
Sensory Test (grade)	-	0	≤ 2.5
Conclusion	-	PASS	-

Note: “≤” = less than and equal

Ratings:

0= no observable deviation

1= minor deviation

2= small deviation

3= clear deviation

4= significant deviation

Method: Change of taste through direct contact, fatty food (aqueous)-butter DIN 10955

Sensory Test per LFGB –Change of Taste (Acidic and Aqueous food)- Still Water: DIN 10955

Parameter	Unit	Result	Maximum Allowable Limit
		Item 1	
Sensory Test (grade)	-	0	≤ 2.5
Conclusion	-	PASS	-

Note: “≤” = less than and equal

Ratings:

0= no observable deviation

1= minor deviation

2= small deviation

3= clear deviation

4= significant deviation

Method: Change of taste through direct contact, Acidic and Aqueous food- Still Water: DIN 10955

Leachable Lead and Cadmium –FDA Requirements

Test conditions: 4% acetic acid extraction at 20-24 °C for 24 hours

Parameter	Unit	Result	Maximum Allowable Limit
		Item 1	
Lead -Pb	ppm	< 0.05	1.0
Cadmium -Cd	ppm	<0.01	0.25
Conclusion	-	PASS	-

Note: < less than

ppm: parts per million

Method: 4% acetic acid extraction at 20-24 °C for 24 hours, determination with ICP-MS



**Extractable Lead and Cadmium from Ceramicwares – 84/500/EEC & 2005/31/EC
EN 1388-1 & 2: 1995**

Test conditions: 4% acetic acid extraction at 20-24 °C for 24 hours

Parameter	Unit	Result	Maximum Allowable Limit
		Item 1 Body and Lid	
Lead –Pb	ppm	< 0.05	1.0
Cadmium –Cd	ppm	<0.01	0.25
Cobalt (per LFGB)	ppm	0.07	≤0.2
Conclusion	-	PASS	-

Note: < less than
ppm: parts per million

Method: 4% acetic acid extraction at 20-24 °C for 24 hours, determination with ICP-MS
Leaching volume of cookware: 1000 ml
Leaching volume of lid: 100 ml



APPENDIX

1. FDA Compliance Policy Guides - CPG 7117.06, CPG 7117.07, California Health and Safety Code 108860

Classification	Lead (ppm)	Cadmium (ppm)
Flatware (average of 6)	3.0	0.5
Small hollow ware (any one of 6)	2.0	0.5
Large hollow ware (any one of 6)	1.0	0.25
Cups & mugs (any one of 6)	0.5	0.5
Pitchers (any one of 6)	0.5	0.5/ 0.25*

*Remark: the limit of cadmium content of pitchers refers to large or small hollow ware depending on their capacity.

Initial Test (1 specimen)

Initial Test (1 specimen)						
Category	Classification basis	Lead	Cadmium	Cobalt (FOR German Standard Only)		Conclusion
1	Articles which cannot be filled or articles which can be filled with internal depth ≤ 25 mm	≤ 0.8 mg/dm ²	≤ 0.07 mg/dm ²	Both ceramic and glass ware ≤ 0.1 mg/dm ²		Pass
		> 1.2 mg/dm ²	> 0.105 mg/dm ²	> 0.15 mg/dm ²		Fail
		0.8 < x ≤ 1.2 mg/dm ²	0.07 < x ≤ 0.105 mg/dm ²	0.1 < x ≤ 0.15 mg/dm ²		Confirmation test is required
2	All other articles which can be filled	≤ 4.0 mg/L	≤ 0.3 mg/L	Ceramic ware ≤ 0.2 mg/L	Glass ware ≤ 0.01 mg/L	Pass
		> 6.0 mg/L	> 0.45 mg/L	> 0.3 mg/L	> 0.015 mg/L	Fail
		4.0 < x ≤ 6.0 mg/L	0.3 < x ≤ 0.45	0.2 < x	0.01 < x	Confirmation test is required
			mg/L	≤ 0.3 mg/L	≤ 0.015 mg/L	required
3	Cooking ware, packaging and storage vessels having a capacity of more than 3 litres	≤ 1.5 mg/L	≤ 0.1 mg/L	Both ceramic and glass ware ≤ 0.1 mg/L		Pass
		> 2.25 mg/L	> 0.15 mg/L	> 0.15 mg/L		Fail
		1.5 < x ≤ 2.25 mg/L	0.1 < x ≤ 0.15 mg/L	0.1 < x ≤ 0.15 mg/L		Confirmation test is required



Confirmation Test (3 specimens)

Confirmation Test (3 specimens)						
Category	Classification basis	Lead	Cadmium	Cobalt (FOR Germany Standard Only)		Conclusion
1	Articles which cannot be filled or articles which can be filled with internal depth \leq 25 mm	\leq 0.8 mg/dm ² (average) and \leq 1.2 mg/dm ² (all)	\leq 0.07 mg/dm ² (average) and \leq 0.105 mg/dm ² (all)	Both ceramic and glass ware		Pass
		\leq 0.1 mg/dm ² (average) and \leq 0.15 mg/dm ² (all)				
		$>$ 0.8 mg/dm ² (average) and $>$ 1.2 mg/dm ² (anyone)	$>$ 0.07 mg/dm ² (average) and $>$ 0.105 mg/dm ² (anyone)	$>$ 0.1 mg/dm ² (average) and $>$ 0.15 mg/dm ² (anyone)		Fail
2	All other articles which can be filled	\leq 4.0 mg/L (average) and \leq 6.0 mg/L (all)	\leq 0.3 mg/L (average) and \leq 0.45 mg/L (all)	Ceramic ware	Glass ware	Pass
		\leq 0.2 mg/L (average) and \leq 0.3 mg/L (all)	\leq 0.01 mg/L (average) and \leq 0.015 mg/L (anyone)			
		$>$ 4.0 mg/L (average) and $>$ 6.0 mg/L (anyone)	$>$ 0.3 mg/L (average) and $>$ 0.45 mg/L (anyone)	$>$ 0.2 mg/L (average) and $>$ 0.3 mg/L (anyone)	$>$ 0.01 mg/L (average) and $>$ 0.015 mg/L (anyone)	Fail
3	Cooking ware, packaging and storage vessels having a capacity of more than 3 litres	\leq 1.5 mg/L (average) and \leq 2.25 mg/L (all)	\leq 0.1 mg/L (average) and \leq 0.15 mg/L (all)	Both ceramic and glass ware		Pass
		\leq 0.1 mg/L (average) and \leq 0.15 mg/L (all)				
		$>$ 1.5 mg/L (average) and $>$ 2.25 mg/L (anyone)	$>$ 0.1 mg/L (average) and $>$ 0.15 mg/L (anyone)	$>$ 0.1 mg/L (average) and $>$ 0.15 mg/L (anyone)		Fail