

Test Report No: D20190746 001

Date: 04th June , 2019

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APPLICANT : RAVINDRA VASANT DHURI
CONTACT PERSON : Mr. RAVINDRA DHURI
ADDRESS : VASANT SMRUTI, JADHAV COLONY, NANGARGAON INDIA
LONAVALA PUNE 410401 INDIA

Sample Description : Copper Bottle
Agent : None
Buyer Name : Forrest & Love
Buyer Address : Vilniusstr. 6, 80992 Munich, Germany
Style No : None
SKU No : None
Po No : None
Colour Name : None
End Use : Food Contact
Destination : India
Sample Receiving Date : 29th May, 2019
Testing Period : 29th May, 2019 to 04th June, 2019
Delivery Condition : Sample received in good condition

For and on behalf of
TÜV Rheinland (India) Pvt.Ltd



Ashish Bersurda
Lab Manager hardline

Test result is drawn according to the kind and extent of tests performed.

Without permission of the test centre this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products. This test report represents the test parameters as requested by the customer based on submitted samples only.

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Conclusion:

Test Property	Pass	Fail	Remarks
Lead In Substrate Content	X		
Lead In Surface Coating	X		
Cadmium In Substrate Content	X		
Cadmium In Surface Coating	X		
Nickle Spot	X		
Specific Release of Metals	X		
Sensorial examination	X		
Material Composition			Refer Result No. 08

Remark: Above chemical Tests have been subcontract to TUVR Chemical.

Material No.	Material	Color	Location
M001	Whole product		Copper Bottle
M002	Coating	Lacquer	Coating of M001
M003	Metal	Coper	Bottle/Cap of M001

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Test results:**Result 01:- Lead In Substrate Content :** (Acid Digestion- Analysis By ICP-MS)

Detection limit: 10 mg/kg

<u>Sample</u>	<u>Results(mg/kg)</u>	<u>Requirement (mg/kg)</u>
M002	32	500

Note:- above requirement is taken from REACH Annexure article 17

Result 02:- Lead In Surface Content : (Acid Digestion- Analysis By ICP-MS)

Detection limit: 10 mg/kg

<u>Sample</u>	<u>Results(mg/kg)</u>	<u>Requirement (mg/kg)</u>
M003	62	500

Note:- above requirement is taken from REACH Annexure article 17

Result 03:- Cadmium In Substrate Content : (Acid Digestion-Analysis by ICP -MS)

Detection limit: 10 mg/kg

<u>Sample</u>	<u>Results(mg/kg)</u>	<u>Requirement (mg/kg)</u>
M002	Not Detected	100

Note:- above requirement is taken from REACH Annexure article 17

Result 04:- Cadmium In Surface Content : (Acid Digestion-Analysis by ICP -MS)

Detection limit: 10 mg/kg

<u>Sample</u>	<u>Results(mg/kg)</u>	<u>Requirement (mg/kg)</u>
M003	Not Detected	1000

Note:- above requirement is taken from REACH Annexure article 17

Result 05:- Nickel Spot

PD CR 12471:2002

<u>Sample</u>	<u>Result</u>	<u>Requirement</u>
M003	Negative	Negative

Result 06-:**Specific Release of Metals**

Test method: The sample preparation is performed with reference to “*Technical Guide on Metals and alloys used in food contact materials*”. Test conditions were chosen with reference to Directive 82/711/EEC, Council Directive 85/572/EEC and its corresponding regulations. The determination of amounts of metals that were released is done via ICP-OES and ICP-MS with reference to ISO 11885:2007 / DIN EN ISO 17294

Limit: Technical guide on metal & alloys used in food contact materials

The following food simulant and condition was applied:

Food simulant	Test duration / Temperature
Distilled Water	2 hour(s) / 70°C

Component No.:	M001						
Volume to surface area ratio	100 ml / 1.26 dm ²						
		Sum 1 st + 2 nd test			3 rd test		
Parameter	Unit	Result	RL	Limits ^{(*)2}	Result	RL	Limits ^{(*)1}
Silver (Ag)	mg/kg	<0.10	<0.10	0.56	<0.05	<0.05	0.08
Aluminum (Al)	mg/kg	<1	< 1	35	<0.1	< 0.1	5
Cobalt (Co)	mg/kg	<0.05	< 0.05	0.14	<0.01	<0.01	0.02
Chromium (Cr)	mg/kg	<0.1	< 0.1	1.75	<0.1	< 0.1	0.25
Copper (Cu)	mg/kg	<1	< 1	28	<0.1	< 0.1	4
Iron (Fe)	mg/kg	<1	< 1	280	<1	< 1	40
Manganese (Mn)	mg/kg	<0.5	< 0.5	12.6	<0.1	< 0.1	1.8
Molybdenum (Mo)	mg/kg	<0.05	< 0.05	0.84	<0.02	< 0.02	0.12
Nickel (Ni)	mg/kg	<0.05	< 0.05	0.98	<0.05	< 0.05	0.14
Tin (Sn)	mg/kg	<1	< 1	700	<1	< 1	100
Vanadium (V)	mg/kg	<0.05	< 0.05	0.07	<0.01	<0.01	0.01
Zinc (Zn)	mg/kg	<1	< 1	35	<1	< 1	5
Arsenic (As)	mg/kg	<0.005	< 0.005	0.014	<0.002	< 0.002	0.002
Barium (Ba)	mg/kg	<0.5	< 0.5	8.4	<0.1	< 0.1	1.2
Beryllium (Be)	mg/kg	<0.01	< 0.01	0.07	<0.01	< 0.01	0.01

Cadmium (Cd)	mg/kg	<0.01	< 0.01	0.035	<0.005	< 0.005	0.005
Mercury (Hg)	mg/kg	<0.01	< 0.01	0.021	<0.003	< 0.003	0.003
Lithium (Li)	mg/kg	<0.05	< 0.05	0.336	<0.02	<0.02	0.048
Lead (Pb)	mg/kg	<0.01	< 0.01	0.07	<0.01	< 0.01	0.01
Antimony (Sb)	mg/kg	<0.05	< 0.05	0.28	<0.02	<0.02	0.04
Thallium (Tl)	mg/kg	<0.0005	< 0.0005	0.0007	<0.0001	<0.0001	0.0001
Magnesium (Mg)	mg/kg	<1	<1	-	<1	<1	--
Titanium (Ti)	mg/kg	<1	<1	-	<1	<1	--

Abbreviations:

mg/kg = Milligram per kilogram

< = Less than

Remark:

- *1 Compliance is established on the findings on the third test for products intended for repeated use.
- *2 In addition, the sum of each metal in the first and second test should not exceed the sevenfold limit.
- *3 The examined item does not meet the requirement.

Result 07-:**Sensorial examination**

Test method: It is examined to the extent of food simulant being used, which comes into contact with the product, undergoes detectable changes in taste and smell.

For this purpose, the food simulant was stored in the product under the below mentioned time and temperature. Afterwards, the food simulant was examined by an appropriate number of tasters with regard to any divergence in smell and taste. Another test sample, which was used as a reference, was treated by the same way except that it had no contact with the product to be tested.

Before testing, the product had been cleaned according to the product's instruction manual or in the absence of such manual, by normal household cleaning.

The test is carried out on the basis of DIN 10955:2004 by paired comparison test:

Evaluation scheme:

- 0 = No discernible deviation
- 1 = Barely discernible deviation
- 2 = Weak deviation
- 3 = Clear deviation
- 4 = Strong deviation

Limit: 3 (failed)

The following food simulants and conditions were applied:

Food simulant	Test duration / Temperature
Distilled Water	2 hour(s) / 70°C

Component No.:	M001
Parameter:	Result
Transfer of Smell:	1
Transfer of Taste:	1

Remark: (will be marked on the result if applicable)

*1 The sensorial deviation has been described by panellists as “xxx” or “xxx”.

*2 The examined item does not meet the requirement

Result 08-: Material Composition-:

Test Method: ASTM E 1086:2014

Element	RESULT %	RESULT %
	<u>Body part</u>	<u>Lid part</u>
Lead (Pb)	0.002	0.006
Tin (Sn)	0.01	0.04
Manganese(Mn)	0.0010	0.0030
Sulphur(S)	0.0038	0.003
Phosphorous(P)	0.0130	0.0330
Zinc (Zn)	0.25	0.29
Nickel(Ni)	0.004	0.005
Cobalt (Co)	0.0020	0.0031
Copper(Cu)	99.70	99.55
Aluminum (Al)	0.001	0.001
Antimony (Sb)	0.003	0.005
Arsenic (As)	0.001	0.001
Ferrous (Fe)	0.0010	0.0440
Bismuth (Bi)	0.002	0.0036

Photo of Product



-End of Test Report-