DEKRA Testing and Certification (Shanghai) Ltd., Guangzhou branch

Caffitaly System S.p.A.
Via Panigali, 38, 40041 Gaggio Montano (BO) - Italy

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TEST REPORT

Test Report No. : 4325721.50
Project No. : 4325721.00

Job No.	:	GZTC2015110594
Applicant	:	Caffitaly System S.p.A. Via Panigali, 38, 40041 Gaggio Montano (BO) - Italy
Product Name	:	Espresso Coffee Maker
Model No.	:	S03/S04/S14/C14/C12/S12/S15/S20
Manufacture	:	Caffitaly System S.p.A.
Test Requested	:	German Food, Articles of Daily Use and Feed Code of September 1, 2005 (LFGB), Section 30 & 31 and BfR recommendation and applicant's requirement.
Test Method	:	Please refer to next pages
Sample Received	:	2015-11-11
Testing Period	:	2015-11-12 to 2015-12-21

Test Results

- following pages -

Resume:

No.	Parameter	Product Name: Espresso Coffee Maker
1.	Sensorial examination - odour and taste test	PASS
2.	Overall migration	PASS
3.	Specific migration of heavy metals	PASS
4.	Specific migration of Primary Aromatic Amine (PAA)	PASS
5.	Volatile Organic Matter (VOM)	PASS
6.	Peroxide value	PASS
7.	Chromium, hafnium, vanadium & zirconium contents	PASS
8.	Extractable components	PASS
9.	Specific migration of formaldehyde	PASS
10.	Zinc content	PASS
11.	Extractable heavy metals	PASS
12.	Specific migration of Bisphenol A (BPA)	PASS
13.	Extractable of lead, cadmium	PASS
14.	Extractable cobalt	SEE RESULTS
15.	Total Platinum (Pt)	PASS
16.	Zinc, lead contents	PASS
17.	N-Nitrosamines and N-Nitrosatable substances	PASS
18.	Specific migration of hexamethylenediamine	PASS
19.	Specific migration of Perfluorooctanoic acid (PFOA) & Perfluorooctane sulfonates (PFOS)	PASS

Remark: As per applicant’s request, all conclusions were based on components listed in the report.

Guangzhou, December 23, 2015
Signed for and on behalf of
DEKRA Testing and Certification (Shanghai) Ltd., Guangzhou branch
Chemical, Hardgoods & Toys

Raymond Yu
Manager

Sample Descriptions:

No.	Sample Descriptions	Materials (claimed by applicant)
(1)	Water tank up / Tank down	MS
(2)	Tank valve base	PP
(3)	Plastic part in water tank filter / Water tank valve	PP
(4)	Metal part in water tank filter	SUS304
(5)	Slider / Capsule box	PBT
(6)	Capsule connector / Coffee outlet	POM
(7)	Connector / Outlet tube	POM
(8)	Outlet connector (Big/Small)	POM
(9)	Dispenser	PC
(10)	Tie in screw/pump connector	PA66+30%GF
(11)	Pump connector / Syphon connector / Transform connector / Inlet tube	PEI
(12)	PTFE tube	PTFE
(13)	Boiler connector O-ring / Pierce cutter O-ring / Pierce cutter sealing ring	Silicone
(14)	Water tube O-ring	Silicone
(15)	Water tank valve O-ring / Water tube O-ring	Silicone
(16)	Silicone syphon connector	Silicone
(17)	Inlet tube O-ring	Silicone
(18)	Water tank base gasket / Press valve silicone ring / Capsule connector ring	Silicone
(19)	Tank valve base connector	Silicone
(20)	Pump syphon connector	Silicone
(21)	Silicone tube	Silicone
(22)	Slider silicone ring	Silicone
(23)	Ceramic nozzle	Ceramic
(24)	Cutter of pierce capsule	SUS
(25)	Water tank valve spring / Press valve spring	SUS
(26)	Rivet	Brass
(27)	Press valve core	Ceramic

No.	Sample Descriptions	Materials (claimed by applicant)
(28)	Main body of self-priming valve	PA66 FV30
(29)	Gasket ring in self-priming valve/O-ring	EPDM
(30)	Valve in self-priming valve	VMQ60 Rubber
(31)	Washer in self-priming valve	PA66
(32)	Spring in self-priming valve	AISI302
(33)	Boiler water pipe	SUS316L
(34)	Boiler water pipe connector	SUS304
(35)	Boiler water pipe	SUS316L
(36)	Heater elbow / Valve head / Valve plug	PA66
(37)	Valve seat / Valve core / Heater bush / Lower driller / Capsule holder / Ejector ring	PA66
(38)	Valve spring / Ejector spring	SUS302
(39)	Coffee outlet tube - various O-rings / Gasket	Silicone
(40)	Coffee outlet elbow	POM
(41)	Gasket holder	PBT
(42)	Screw	SUS304
(43)	Valve body	PA66
(44)	Valve core	PA66
(45)	Valve core O-ring / Valve cover O-ring / Valve O-ring	Silicone
(46)	Safety spring	AISI302
(47)	Finished coffee maker S15	--
(48)	Finished coffee maker C12/S12	--
(49)	Finished coffee maker S04	--
(50)	Finished coffee maker S20	--
(51)	Finished coffee maker S03	--
(52)	Finished coffee maker C14/S14	--

TEST RESULTS

1) Sensorial examination - odour and taste test

With reference to DIN 10955: 2004.

Test Item	Result						Recommended Limit
	(47)	(48)	(49)	(50)	(51)	(52)	
Sensorial examination odour (point scale)	1.0	0	0	0	1.0	0	2.5
Sensorial examination taste (point scale)	1.0	1.0	1.0	1.0	1.0	1.0	2.5

Remark:

1. Test condition is 22℃ at 24 hours for odour test, 100℃ 1 hour for taste test.
2. Test media: Distilled water
3. Number of panelist: Six
4. Scale evaluation:
   - 0 = No perceptible difference in odour /taste
   - 1 = Just perceptible difference in odour /taste (still difficult to define)
   - 2 = Slight difference in odour /taste
   - 3 = Marked difference in odour /taste
   - 4 = Strong difference in odour /taste

2) Overall migration

With reference to (EU) No.10/2011 & EN 1186-3: 2002.

Test Item	Test Condition	Result (mg/dm^2)					Limit (mg/dm^2)
		(1)	(2)	(3)	(10)	(12)	
Overall migration	10%(v/v) Ethanol, 70℃, 2 hours	<3	<3	<3	<3	<3	10

Test Item	Test Condition	Result (mg/dm^2)				Limit (mg/dm^2)
		(28)	(31)	(43)	(44)	
Overall migration	10%(v/v) Ethanol, 70℃, 2 hours	<3	<3	<3	<3	10

Test Item	Test Condition	Result (mg/dm^2)			Limit (mg/dm^2)
		(11)	(36)	(41)	
Overall migration	10%(v/v) Ethanol, 100℃, 1 hour	<3	<3	<3	10

Test Item	Test Condition	Result (mg/dm^2)				Limit (mg/dm^2)
		(5)	(6)	(7)	(8)	
Overall migration	3%(w/v) Acetic acid, 100℃, 1 hour	<3	<3	<3	<3	10

Test Item	Test Condition	Result (mg/dm^2)			Limit (mg/dm^2)
		(9)	(37)	(40)	
Overall migration	3%(w/v) Acetic acid, 100℃, 1 hour	<3	<3	<3	10

Test Item	Test Condition	Result (mg/dm^2)		Limit (mg/dm^2)
		(29)	(30)	
Overall migration	10%(v/v) Ethanol, 40℃ 24 hours	<3	<3	20

Remark:

1. mg/dm^2 = Milligram per square decimeter
2. < = Less than

3) Specific migration of heavy metals

With reference to (EU) No.10/2011 for selection of conditions and test method for specific migration. Analysis was performed by inductively coupled plasma optical emission spectrometer (ICP-OES).

Test Item	Test Condition	Result (mg/kg)				MDL (mg/kg)	Limit (mg/kg)
		(1)	(2)	(3)	(10)		
Barium (Ba)	10%(v/v) Ethanol, 40℃, 2 hours	N.D.	N.D.	N.D.	N.D.	0.1	1
Cobalt (Co)		N.D.	N.D.	N.D.	N.D.	0.05	0.05
Copper (Cu)		N.D.	N.D.	N.D.	N.D.	0.5	5
Iron (Fe)		N.D.	N.D.	N.D.	N.D.	1.0	48
Lithium (Li)		N.D.	N.D.	N.D.	N.D.	0.1	0.6
Manganese (Mn)		N.D.	N.D.	N.D.	N.D.	0.1	0.6
Zinc (Zn)		N.D.	N.D.	N.D.	N.D.	1.0	25

Test Item	Test Condition	Result (mg/kg)					MDL (mg/kg)	Limit (mg/kg)
		(12)	(28)	(31)	(43)	(44)		
Barium (Ba)	10%(v/v) Ethanol, 40℃, 2 hours	N.D.	N.D.	N.D.	N.D.	N.D.	0.1	1
Cobalt (Co)		N.D.	N.D.	N.D.	N.D.	N.D.	0.05	0.05
Copper (Cu)		N.D.	N.D.	N.D.	N.D.	N.D.	0.5	5
Iron (Fe)		N.D.	N.D.	N.D.	N.D.	N.D.	1.0	48
Lithium (Li)		N.D.	N.D.	N.D.	N.D.	N.D.	0.1	0.6
Manganese (Mn)		N.D.	N.D.	N.D.	N.D.	N.D.	0.1	0.6
Zinc (Zn)		N.D.	N.D.	N.D.	N.D.	N.D.	1.0	25

Test Item	Test Condition	Result (mg/kg)			MDL	Limit
		(11)	(36)	(41)	(mg/kg)	(mg/kg)
Barium (Ba)	10%(v/v) Ethanol, 100℃, 1 hour	N.D.	N.D.	N.D.	0.1	1
Cobalt (Co)		N.D.	N.D.	N.D.	0.05	0.05
Copper (Cu)		N.D.	N.D.	N.D.	0.5	5
Iron (Fe)		N.D.	N.D.	N.D.	1.0	48
Lithium (Li)		N.D.	N.D.	N.D.	0.1	0.6
Manganese (Mn)		N.D.	N.D.	N.D.	0.1	0.6
Zinc (Zn)		N.D.	N.D.	N.D.	1.0	25

Test Item	Test Condition	Result (mg/kg)			MDL	Limit
		(5)	(6)	(7)	(mg/kg)	(mg/kg)
Barium (Ba)	3%(w/v) Acetic acid, 100℃, 1 hour	N.D.	N.D.	N.D.	0.1	1
Cobalt (Co)		N.D.	N.D.	N.D.	0.05	0.05
Copper (Cu)		N.D.	N.D.	N.D.	0.5	5
Iron (Fe)		N.D.	N.D.	N.D.	1.0	48
Lithium (Li)		N.D.	N.D.	N.D.	0.1	0.6
Manganese (Mn)		N.D.	N.D.	N.D.	0.1	0.6
Zinc (Zn)		N.D.	N.D.	N.D.	1.0	25

Test Item	Test Condition	Result (mg/kg)				MDL	Limit
		(8)	(9)	(37)	(40)	(mg/kg)	(mg/kg)
Barium (Ba)	3%(w/v) Acetic acid, 100℃, 1 hour	N.D.	N.D.	N.D.	N.D.	0.1	1
Cobalt (Co)		N.D.	N.D.	N.D.	N.D.	0.05	0.05
Copper (Cu)		N.D.	N.D.	N.D.	N.D.	0.5	5
Iron (Fe)		N.D.	N.D.	N.D.	N.D.	1.0	48
Lithium (Li)		N.D.	N.D.	N.D.	N.D.	0.1	0.6
Manganese (Mn)		N.D.	N.D.	N.D.	N.D.	0.1	0.6
Zinc (Zn)		N.D.	N.D.	N.D.	N.D.	1.0	25

Remark:

1. N.D. = Not Detected (Below MDL)
2. MDL = Method Detection Limit
3. mg/kg = Milligram per kilogram

4) Specific migration of Primary Aromatic Amine (PAA)

With reference to DIN 55610-1986. Analysis was performed by UV-visible spectrophotometer (UV-Vis).

Test Item	Test Condition	Result (mg/kg)					MDL	Limit
		(2)	(3)	(10)	(12)	(28)	(mg/kg)	(mg/kg)

Test Item	Test Condition	Result (mg/kg)					MDL (mg/kg)	Limit (mg/kg)
		(2)	(3)	(10)	(12)	(28)		
PAA	10%(v/v) Ethanol, 40℃, 2 hours	N.D.	N.D.	N.D.	N.D.	N.D.	0.01	0.01

Test Item	Test Condition	Result (mg/kg)					MDL (mg/kg)	Limit (mg/kg)
		(29)	(30)	(31)	(43)	(44)		
PAA	10%(v/v) Ethanol, 40℃, 2 hours	N.D.	N.D.	N.D.	N.D.	N.D.	0.01	0.01

Test Item	Test Condition	Result (mg/kg)			MDL (mg/kg)	Limit (mg/kg)
		(11)	(36)	(41)		
PAA	10%(v/v) Ethanol, 100℃, 1 hour	N.D.	N.D.	N.D.	0.01	0.01

Test Item	Test Condition	Result (mg/kg)			MDL (mg/kg)	Limit (mg/kg)
		(5)	(6)	(7)		
PAA	3%(w/v) Acetic acid, 100℃, 1 hour	N.D.	N.D.	N.D.	0.01	0.01

Test Item	Test Condition	Result (mg/kg)				MDL (mg/kg)	Limit (mg/kg)
		(8)	(9)	(37)	(40)		
PAA	3%(w/v) Acetic acid, 100℃, 1 hour	N.D.	N.D.	N.D.	N.D.	0.01	0.01

Remark:

1. N.D. = Not Detected (Below MDL)
2. MDL = Method Detection Limit
3. mg/kg = Milligram per kilogram

5) Volatile Organic Matter (VOM)

With reference to BfR recommendation section XV & section XXII.

Test Item	Test Condition	Result (%)	Limit (%)
		(1)	
Volatile organic matter (VOM)	90℃, 24 hours	<0.1	0.5

Test Item	Test Condition	Result (%)					Limit (%)
		(13)	(17)	(18)	(22)	(39)	
Volatile organic matter (VOM)	100℃, 1 hour	<0.1	<0.1	<0.1	<0.1	<0.1	0.5

Test Item	Test Condition	Result (%)			Limit (%)
		(14)	(15)	(16)	
Volatile organic matter (VOM)	40℃, 2 hours	<0.1	<0.1	<0.1	0.5

Test Item	Test Condition	Result (%)				Limit (%)
		(19)	(20)	(21)	(45)	
Volatile organic matter (VOM)	40℃, 2 hours	<0.1	<0.1	<0.1	<0.1	0.5

Remark:

1. % = Percentage
2. < = Less than

6) Peroxide value

With reference to European Pharmacopoeia, 5.0 chapter 2.5.5.

Test Item	Result					Limit
	(1)	(2)	(3)	(10)	(13)	
Peroxide value	Absent	Absent	Absent	Absent	Absent	Absent

Test Item	Result					Limit
	(14)	(15)	(16)	(17)	(18)	
Peroxide value	Absent	Absent	Absent	Absent	Absent	Absent

Test Item	Result						Limit
	(19)	(20)	(21)	(22)	(28)	(31)	
Peroxide value	Absent	Absent	Absent	Absent	Absent	Absent	Absent

Test Item	Result						Limit
	(36)	(37)	(39)	(43)	(44)	(45)	
Peroxide value	Absent	Absent	Absent	Absent	Absent	Absent	Absent

7) Chromium, hafnium, vanadium & zirconium contents

Microwave digestion. Analysis was performed by inductively coupled plasma optical emission spectrometer (ICP-OES).

Test Item	Result (mg/kg)		Limit (mg/kg)	Limit (mg/kg)
	(2)	(3)		
Total Chromium (Cr)	N.D.	N.D.	5	10

Test Item	Result (mg/kg)		Limit (mg/kg)	Limit (mg/kg)
	(2)	(3)		
Total Hafnium (Hf)	N.D.	N.D.	10	100
Total Vanadium (V)	N.D.	N.D.	5	20
Total Zirconium (Zr)	12	N.D.	10	100

Remark:
1. N.D. = Not Detected (Below MDL)
2. MDL = Method Detection Limit
3. mg/kg = Milligram per kilogram

8) Extractable components

With reference to 61st communication on testing of plastics in Bundesgesundheitsbl 46 (2003) 362.

Test Item	Test Condition	Result (%)				MDL (%)	Limit (%)
		(13)	(14)	(15)	(16)		
Extractable components	Distilled water, Reflux for 5 hours	N.D.	N.D.	N.D.	N.D.	0.1	0.5
	3% (w/v) Acetic acid, Reflux for 5 hours	0.16	N.D.	0.10	0.13	0.1	0.5
	10% (v/v) Ethanol, Reflux for 5 hours	N.D.	N.D.	N.D.	N.D.	0.1	0.5

Test Item	Test Condition	Result (%)				MDL (%)	Limit (%)
		(17)	(18)	(19)	(20)		
Extractable components	Distilled water, Reflux for 5 hours	N.D.	0.12	N.D.	N.D.	0.1	0.5
	3% (w/v) Acetic acid, Reflux for 5 hours	N.D.	0.14	N.D.	N.D.	0.1	0.5
	10% (v/v) Ethanol, Reflux for 5 hours	N.D.	N.D.	N.D.	N.D.	0.1	0.5

Test Item	Test Condition	Result (%)				MDL (%)	Limit (%)
		(21)	(22)	(39)	(45)		
Extractable components	Distilled water, Reflux for 5 hours	N.D.	N.D.	0.12	N.D.	0.1	0.5
	3% (w/v) Acetic acid, Reflux for 5 hours	0.10	N.D.	0.15	N.D.	0.1	0.5
	10% (v/v) Ethanol, Reflux for 5 hours	N.D.	N.D.	N.D.	N.D.	0.1	0.5

Remark:
1. N.D. = Not Detected (Below MDL)

2. MDL = Method Detection Limit
3. % = Percentage

9) Specific migration of formaldehyde

With reference to (EU) No.10/2011 & EN 13130-23: 2005. Analysis was performed by UV-visible spectrophotometer (UV-Vis).

Test Item	Test Condition	Result (μg/mL)					MDL (μg/mL)	Limit (μg/mL)
		(14)	(15)	(16)	(19)	(20)		
Formaldehyde	10%(v/v) Ethanol, 40℃, 2 hours	N.D.	N.D.	N.D.	N.D.	N.D.	1	3

Test Item	Test Condition	Result (μg/mL)				MDL (μg/mL)	Limit (μg/mL)
		(21)	(29)	(30)	(45)		
Formaldehyde	10%(v/v) Ethanol, 40℃, 2 hours	N.D.	N.D.	N.D.	N.D.	1	3

Test Item	Test Condition	Result (μg/mL)		MDL (μg/mL)	Limit (μg/mL)
		(17)	(18)		
Formaldehyde	10%(v/v) Ethanol, 100℃, 1 hour	N.D.	N.D.	1	3

Test Item	Test Condition	Result (μg/mL)			MDL (μg/mL)	Limit (μg/mL)
		(13)	(22)	(39)		
Formaldehyde	3%(w/v) Acetic acid, 100℃, 1 hour	N.D.	N.D.	N.D.	1	3

Test Item	Test Condition	Result (mg/kg)				MDL (mg/kg)	Limit (mg/kg)
		(6)	(7)	(8)	(40)		
Formaldehyde	3%(w/v) Acetic acid, 100℃, 1 hour	4.6	4.1	3.3	1.9	1	15

Remark:
1. N.D. = Not Detected (Below MDL)
2. MDL = Method Detection Limit
3. μg/mL = Microgram per milliliter
4. mg/kg = Milligram per kilogram

10) Zinc content

Microwave digestion. Analysis was performed by inductively coupled plasma optical emission spectrometer (ICP-OES).

Test Item	Result (%)				MDL	Limit
	(6)	(7)	(8)	(40)	(%)	(%)
Total Zinc (Zn)	0.0025	0.0011	N.D.	0.0014	0.001	1.0

Remark:

1. N.D. = Not Detected (Below MDL)
2. MDL = Method Detection Limit
3. % = Percentage

11) Extractable heavy metals

With reference to European Resolution CM/Res(2013)9 on metals and alloys used in food contact materials and articles. Analyzed by inductively coupled plasma optical emission spectrometer (ICP-OES) and inductively coupled plasma mass spectrometer (ICP-MS).

For components (4)/(26)/(32)/(38)/(42)/(46), sample preparation with distilled water at 40℃ for 2 hours.

Test Item	Result(s) of 1st + 2nd Migration (mg/kg)						MDL	Limit
	(4)	(26)	(32)	(38)	(42)	(46)	(mg/kg)	(mg/kg)
Aluminium (Al)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.2	35
Barium (Ba)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.2	8.4
Chromium (Cr)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.1	1.75
Copper (Cu)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.2	28
Iron (Fe)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.2	280
Manganese (Mn)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.2	12.6
Nickel (Ni)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.1	0.98
Molybdenum (Mo)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.1	0.84
Magnesium (Mg)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.2	Not requested
Titanium (Ti)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.2	Not requested
Tin (Sn)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	2	700
Zinc (Zn)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.2	35
Beryllium (Be)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.02	0.07
Antimony (Sb)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.02	0.28
Mercury (Hg)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.004	0.021
Lithium (Li)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.02	0.336
Cobalt (Co)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.02	0.14
Silver (Ag)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.02	0.56
Lead (Pb)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.02	0.07
Vanadium (V)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.02	0.07
Arsenic (As)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.004	0.014
Cadmium (Cd)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.004	0.035
Thallium (Tl)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.0002	0.0007

Test Item	Result(s) of 3rd Migration (mg/kg)						MDL	Limit
	(4)	(26)	(32)	(38)	(42)	(46)	(mg/kg)	(mg/kg)
Aluminium (Al)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.1	5
Barium (Ba)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.1	1.2
Chromium (Cr)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.05	0.25
Copper (Cu)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.1	4
Iron (Fe)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.1	40
Manganese (Mn)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.1	1.8
Nickel (Ni)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.05	0.14
Molybdenum (Mo)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.05	0.12
Magnesium (Mg)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.1	Not requested
Titanium (Ti)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.1	Not requested
Tin (Sn)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	1	100
Zinc (Zn)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.1	5
Beryllium (Be)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.01	0.01
Antimony (Sb)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.01	0.04
Mercury (Hg)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.002	0.003
Lithium (Li)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.01	0.048
Cobalt (Co)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.01	0.02
Silver (Ag)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.01	0.08
Lead (Pb)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.01	0.01
Vanadium (V)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.01	0.01
Arsenic (As)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.002	0.002
Cadmium (Cd)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.002	0.005
Thallium (Tl)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	0.0001	0.0001

For components (25)/(33)/(34)/(35), sample preparation with distilled water at 100℃ for 1 hour.

Test Item	Result(s) of 1st + 2nd Migration (mg/kg)				MDL	Limit
	(25)	(33)	(34)	(35)	(mg/kg)	(mg/kg)
Aluminium (Al)	N.D.	N.D.	N.D.	N.D.	0.2	35
Barium (Ba)	N.D.	N.D.	N.D.	N.D.	0.2	8.4
Chromium (Cr)	N.D.	N.D.	N.D.	N.D.	0.1	1.75
Copper (Cu)	N.D.	N.D.	N.D.	N.D.	0.2	28
Iron (Fe)	N.D.	N.D.	N.D.	N.D.	0.2	280
Manganese (Mn)	N.D.	N.D.	N.D.	N.D.	0.2	12.6
Nickel (Ni)	N.D.	N.D.	N.D.	N.D.	0.1	0.98
Molybdenum (Mo)	N.D.	N.D.	N.D.	N.D.	0.1	0.84
Magnesium (Mg)	N.D.	N.D.	N.D.	N.D.	0.2	Not requested
Titanium (Ti)	N.D.	N.D.	N.D.	N.D.	0.2	Not requested

Test Item	Result(s) of 1st + 2nd Migration (mg/kg)				MDL	Limit
	(25)	(33)	(34)	(35)	(mg/kg)	(mg/kg)
Tin (Sn)	N.D.	N.D.	N.D.	N.D.	2	700
Zinc (Zn)	N.D.	N.D.	N.D.	N.D.	0.2	35
Beryllium (Be)	N.D.	N.D.	N.D.	N.D.	0.02	0.07
Antimony (Sb)	N.D.	N.D.	N.D.	N.D.	0.02	0.28
Mercury (Hg)	N.D.	N.D.	N.D.	N.D.	0.004	0.021
Lithium (Li)	N.D.	N.D.	N.D.	N.D.	0.02	0.336
Cobalt (Co)	N.D.	N.D.	N.D.	N.D.	0.02	0.14
Silver (Ag)	N.D.	N.D.	N.D.	N.D.	0.02	0.56
Lead (Pb)	N.D.	N.D.	N.D.	N.D.	0.02	0.07
Vanadium (V)	N.D.	N.D.	N.D.	N.D.	0.02	0.07
Arsenic (As)	N.D.	N.D.	N.D.	N.D.	0.004	0.014
Cadmium (Cd)	N.D.	N.D.	N.D.	N.D.	0.004	0.035
Thallium (Tl)	N.D.	N.D.	N.D.	N.D.	0.0002	0.0007

Test Item	Result(s) of 3rd Migration (mg/kg)				MDL	Limit
	(25)	(33)	(34)	(35)	(mg/kg)	(mg/kg)
Aluminium (Al)	N.D.	N.D.	N.D.	N.D.	0.1	5
Barium (Ba)	N.D.	N.D.	N.D.	N.D.	0.1	1.2
Chromium (Cr)	N.D.	N.D.	N.D.	N.D.	0.05	0.25
Copper (Cu)	N.D.	N.D.	N.D.	N.D.	0.1	4
Iron (Fe)	N.D.	N.D.	N.D.	N.D.	0.1	40
Manganese (Mn)	N.D.	N.D.	N.D.	N.D.	0.1	1.8
Nickel (Ni)	N.D.	N.D.	N.D.	N.D.	0.05	0.14
Molybdenum (Mo)	N.D.	N.D.	N.D.	N.D.	0.05	0.12
Magnesium (Mg)	N.D.	N.D.	N.D.	N.D.	0.1	Not requested
Titanium (Ti)	N.D.	N.D.	N.D.	N.D.	0.1	Not requested
Tin (Sn)	N.D.	N.D.	N.D.	N.D.	1	100
Zinc (Zn)	N.D.	N.D.	N.D.	N.D.	0.1	5
Beryllium (Be)	N.D.	N.D.	N.D.	N.D.	0.01	0.01
Antimony (Sb)	N.D.	N.D.	N.D.	N.D.	0.01	0.04
Mercury (Hg)	N.D.	N.D.	N.D.	N.D.	0.002	0.003
Lithium (Li)	N.D.	N.D.	N.D.	N.D.	0.01	0.048
Cobalt (Co)	N.D.	N.D.	N.D.	N.D.	0.01	0.02
Silver (Ag)	N.D.	N.D.	N.D.	N.D.	0.01	0.08
Lead (Pb)	N.D.	N.D.	N.D.	N.D.	0.01	0.01
Vanadium (V)	N.D.	N.D.	N.D.	N.D.	0.01	0.01
Arsenic (As)	N.D.	N.D.	N.D.	N.D.	0.002	0.002
Cadmium (Cd)	N.D.	N.D.	N.D.	N.D.	0.002	0.005
Thallium (Tl)	N.D.	N.D.	N.D.	N.D.	0.0001	0.0001

For component (24), sample preparation with 0.5% citric acid at 100℃ for 1 hour.

Test Item	Result(s) of 1st + 2nd Migration (mg/kg)	MDL	Limit
	(24)	(mg/kg)	(mg/kg)
Aluminium (Al)	N.D.	0.2	35
Barium (Ba)	N.D.	0.2	8.4
Chromium (Cr)	1.14	0.1	1.75
Copper (Cu)	N.D.	0.2	28
Iron (Fe)	20.05	0.2	280
Manganese (Mn)	N.D.	0.2	12.6
Nickel (Ni)	N.D.	0.1	0.98
Molybdenum (Mo)	N.D.	0.1	0.84
Magnesium (Mg)	N.D.	0.2	Not requested
Titanium (Ti)	N.D.	0.2	Not requested
Tin (Sn)	N.D.	2	700
Zinc (Zn)	N.D.	0.2	35
Beryllium (Be)	N.D.	0.02	0.07
Antimony (Sb)	N.D.	0.02	0.28
Mercury (Hg)	N.D.	0.004	0.021
Lithium (Li)	N.D.	0.02	0.336
Cobalt (Co)	N.D.	0.02	0.14
Silver (Ag)	N.D.	0.02	0.56
Lead (Pb)	N.D.	0.02	0.07
Vanadium (V)	N.D.	0.02	0.07
Arsenic (As)	N.D.	0.004	0.014
Cadmium (Cd)	N.D.	0.004	0.035
Thallium (Tl)	N.D.	0.0002	0.0007

Test Item	Result(s) of 3rd Migration (mg/kg)	MDL	Limit
	(24)	(mg/kg)	(mg/kg)
Aluminium (Al)	N.D.	0.1	5
Barium (Ba)	N.D.	0.1	1.2
Chromium (Cr)	N.D.	0.05	0.25
Copper (Cu)	N.D.	0.1	4
Iron (Fe)	1.02	0.1	40
Manganese (Mn)	N.D.	0.1	1.8
Nickel (Ni)	N.D.	0.05	0.14
Molybdenum (Mo)	N.D.	0.05	0.12
Magnesium (Mg)	N.D.	0.1	Not requested
Titanium (Ti)	N.D.	0.1	Not requested
Tin (Sn)	N.D.	1	100

Test Item	Result(s) of 3rd Migration (mg/kg)	MDL	Limit
	(24)	(mg/kg)	(mg/kg)
Zinc (Zn)	N.D.	0.1	5
Beryllium (Be)	N.D.	0.01	0.01
Antimony (Sb)	N.D.	0.01	0.04
Mercury (Hg)	N.D.	0.002	0.003
Lithium (Li)	N.D.	0.01	0.048
Cobalt (Co)	N.D.	0.01	0.02
Silver (Ag)	N.D.	0.01	0.08
Lead (Pb)	N.D.	0.01	0.01
Vanadium (V)	N.D.	0.01	0.01
Arsenic (As)	N.D.	0.002	0.002
Cadmium (Cd)	N.D.	0.002	0.005
Thallium (Tl)	N.D.	0.0001	0.0001

Remark:
1. N.D. = Not Detected (Below MDL)
2. MDL = Method Detection Limit
3. mg/kg = Milligram per kilogram

12) Specific migration of Bisphenol A (BPA)

With reference to (EU) No.10/2011 & EN 13130-13: 2005. Analysis was performed by high performance liquid chromatography-diode array detector (HPLC-DAD).

Test Item	Test Condition	Result (mg/kg)	MDL	Limit
		(9)	(mg/kg)	(mg/kg)
Specific migration of BPA	3%(w/v) Acetic acid, 100℃, 1 hour	N.D.	0.1	0.6

Remark:
1. N.D. = Not Detected (Below MDL)
2. MDL = Method Detection Limit
3. mg/kg = Milligram per kilogram

13) Extractable of lead, cadmium

With reference to DIN 51032-1986, extractable of lead & cadmium were determined by inductively coupled plasma optical emission spectrometer (ICP-OES).

Test No.	Soak area	Volume of 4%Acetic acid	Lead (Pb)	Cadmium (Cd)
(23)	(dm^2)	Leaching solution (ml)	(mg/dm^2)	(mg/dm^2)

Test No. (23)	Soak area (dm^2)	Volume of 4%Acetic acid Leaching solution (ml)	Lead (Pb) (mg/dm^2)	Cadmium (Cd) (mg/dm^2)
1	0.11	10	N.D.	N.D.
2	0.11	10	N.D.	N.D.
3	0.11	10	N.D.	N.D.
4	0.11	10	N.D.	N.D.
--	--	MDL (mg/dm^2)	0.1	0.01
--	--	Limit (mg/dm^2)	0.8	0.07

Test No. (27)	Soak area (dm^2)	Volume of 4%Acetic acid Leaching solution (ml)	Lead (Pb) (mg/dm^2)	Cadmium (Cd) (mg/dm^2)
1	0.04	5	N.D.	N.D.
2	0.04	5	N.D.	N.D.
3	0.04	5	N.D.	N.D.
4	0.04	5	N.D.	N.D.
--	--	MDL (mg/dm^2)	0.1	0.01
--	--	Limit (mg/dm^2)	0.8	0.07

Remark:

1. N.D. = Not Detected (below MDL)
2. MDL = Method Detection Limit
3. mg/dm^2 = Milligram per square decimetre

14) Extractable cobalt

With reference to DIN 51032-1986, extractable of cobalt was determined by inductively coupled plasma optical emission spectrometer (ICP-OES).

Test No. (23)	Soak area (dm^2)	Volume of 4%Acetic acid Leaching solution (ml)	Cobalt (Co) (mg/L)
1	0.11	10	N.D.
2	0.11	10	N.D.
3	0.11	10	N.D.
4	0.11	10	N.D.
--	--	MDL (mg/L)	0.01
--	--	Limit (mg/L)	--

Test No. (27)	Soak area (dm^2)	Volume of 4%Acetic acid Leaching solution (ml)	Cobalt (Co) (mg/L)
1	0.04	5	N.D.
2	0.04	5	N.D.
3	0.04	5	N.D.

Test No. (27)	Soak area (dm^2)	Volume of 4%Acetic acid Leaching solution (ml)	Cobalt (Co) (mg/L)
4	0.04	5	N.D.
--	--	MDL (mg/L)	0.01
--	--	Limit (mg/L)	--

Remark:
1. N.D. = Not Detected (below MDL)
2. MDL = Method Detection Limit
3. mg/L = Milligram per liter

15) Total Platinum (Pt)

Microwave digestion. Analysis was performed by Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES).

Test Item	Result (mg/kg)						MDL (mg/kg)	Limit (mg/kg)
	(13)	(14)	(15)	(16)	(17)	(18)		
Total Platinum (Pt)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	10	50

Test Item	Result (mg/kg)						MDL (mg/kg)	Limit (mg/kg)
	(19)	(20)	(21)	(22)	(39)	(45)		
Total Platinum (Pt)	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.	10	50

Remark:
1. N.D. = Not Detected (below MDL)
2. MDL = Method Detection Limit
3. mg/kg = Milligram per kilogram

16) Zinc, lead contents

Microwave digestion. Analysis was performed by inductively coupled plasma optical emission spectrometer (ICP-OES).

Test Item	Result (mg/kg)		MDL (mg/kg)	Limit (mg/kg)
	(29)	(30)		
Total lead (Pb)	19	N.D.	10	30
Total zinc (Zn)	6839	196	10	30000

Remark:
1. N.D. = Not Detected (below MDL)
2. MDL = Method Detection Limit
3. mg/kg = Milligram per kilogram

17) N-Nitrosamines and N-Nitrosatable substances

With reference to EN 14350-2 and EN 12868. Analysis was performed by gas chromatographic-mass spectrometer (GC-MS).

CAS No.	Test Item	Limit (mg/kg)	Tolerance (mg/kg)	Result (mg/kg)	
				(29)	(30)
	N-Nitrosamines				
62-75-9	N-Nitrosodimethylamine (NDMA)	--	--	<0.01	<0.01
55-18-5	N-Nitrosodiethylamine (NDEA)	--	--	<0.01	<0.01
621-64-7	N-Nitrosodipropylamine (NDPA)	--	--	<0.01	<0.01
924-16-3	N-nitrosodibutylamine (NDBA)	--	--	<0.01	<0.01
1207995-62-7	N-nitrosodiisnonylamine (NDiNA)	--	--	<0.01	<0.01
59-89-2	N-nitrosomorpholine (NMOR)	--	--	<0.01	<0.01
100-75-4	N-nitrosopiperidine (NPIP)	--	--	<0.01	<0.01
930-55-2	N-nitrosopyrrolidine (NPYR)	--	--	<0.01	<0.01
5336-53-8	N-nitrosodibenzylamine (NDBzA)	--	--	<0.01	<0.01
614-00-6	N-nitroso N-methyl N-phenylamine (NMPhA)	--	--	<0.01	<0.01
612-64-6	N-nitroso N-ethyl N-phenylamine (NEPhA)	--	--	<0.01	<0.01
--	Sum of above	0.01	0.01	<0.01	<0.01
	N-Nitrosatable substances				
62-75-9	N-Nitrosodimethylamine (NDMA)	--	--	<0.1	<0.1
55-18-5	N-Nitrosodiethylamine (NDEA)	--	--	<0.1	<0.1
621-64-7	N-Nitrosodipropylamine (NDPA)	--	--	<0.1	<0.1
924-16-3	N-nitrosodibutylamine (NDBA)	--	--	<0.1	<0.1
1207995-62-7	N-nitrosodiisnonylamine (NDiNA)	--	--	<0.1	<0.1
59-89-2	N-nitrosomorpholine (NMOR)	--	--	<0.1	<0.1
100-75-4	N-nitrosopiperidine (NPIP)	--	--	<0.1	<0.1
930-55-2	N-nitrosopyrrolidine (NPYR)	--	--	<0.1	<0.1
5336-53-8	N-nitrosodibenzylamine (NDBzA)	--	--	<0.1	<0.1
614-00-6	N-nitroso N-methyl N-phenylamine (NMPhA)	--	--	<0.1	<0.1
612-64-6	N-nitroso N-ethyl N-phenylamine (NEPhA)	--	--	<0.1	<0.1
--	Sum of above	0.1	0.1	<0.1	<0.1

Remark:

1. mg/kg = Milligram per kilogram
2. < = Less than

18) Specific migration of hexamethylenediamine

Sample preparation is performed according to EN 13130-1: 2004, followed by GC-MS analysis.

Test Item	Test Condition	Result (mg/kg)					Limit (mg/kg)
		(10)	(28)	(31)	(43)	(44)	

Test Item	Test Condition	Result (mg/kg)					Limit (mg/kg)
		(10)	(28)	(31)	(43)	(44)	
Specific migration of hexamethylenediamine	10% Ethanol 40℃ for 2 hours	<0.2	<0.2	<0.2	<0.2	<0.2	2.4

Test Item	Test Condition	Result (mg/kg)	Limit (mg/kg)
		(36)	
Specific migration of hexamethylenediamine	10% Ethanol 100℃ for 1 hour	<0.2	2.4

Test Item	Test Condition	Result (mg/kg)	Limit (mg/kg)
		(37)	
Specific migration of hexamethylenediamine	3% Acetic acid 100℃ for 1 hour	<0.2	2.4

Remark:
1. mg/kg = Milligram per kilogram
2. < = Less than

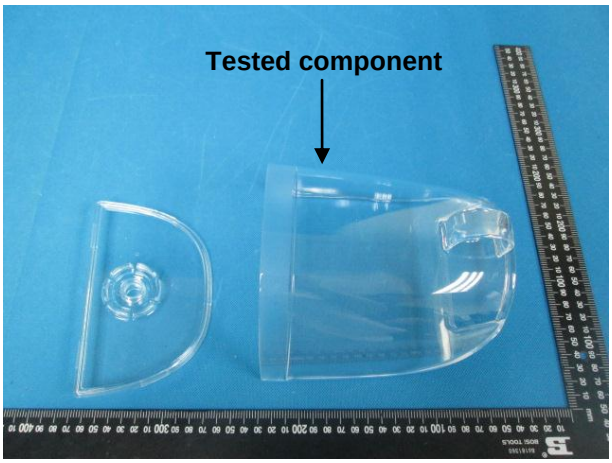
19) Specific migration of Perfluorooctanoic acid (PFOA) & Perfluorooctane sulfonates (PFOS)

The submitted sample was tested with 10% Ethanol at 40℃ for 2 hours, followed by LC-MS-MS analysis.

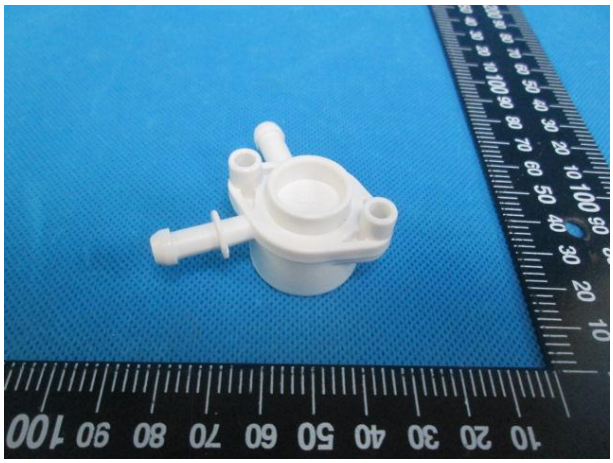
Test Item	Result (mg/dm^2)	Limit (mg/dm^2)
	(12)	
PFOA	<0.001	--
PFOS	<0.001	--
PFOA + PFOS	<0.002	0.005

Remark:
1. mg/dm^2 = Milligram per square decimetre
2. < = Less than

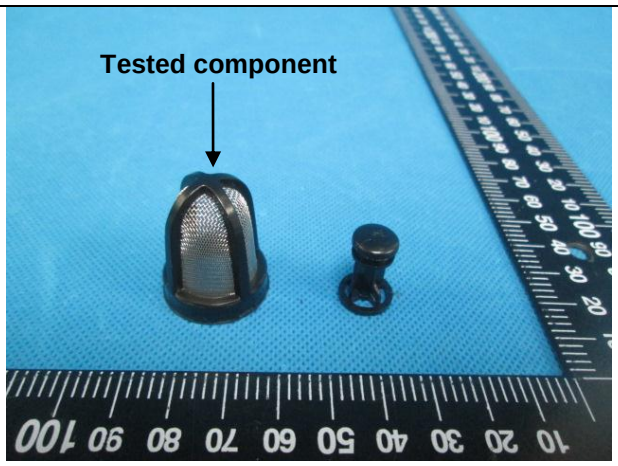
Sample photo



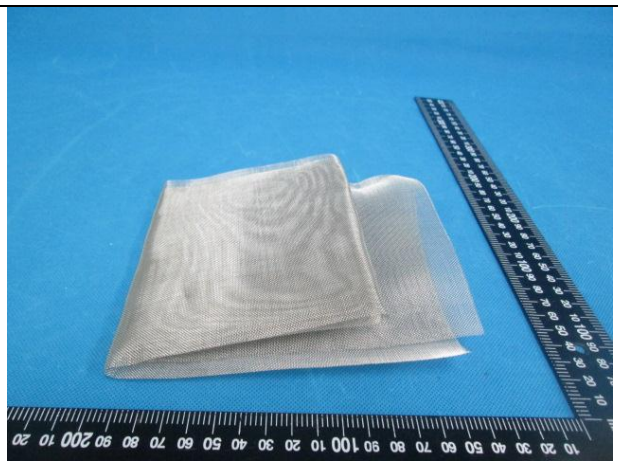
Picture 1, Water tank up / Tank down



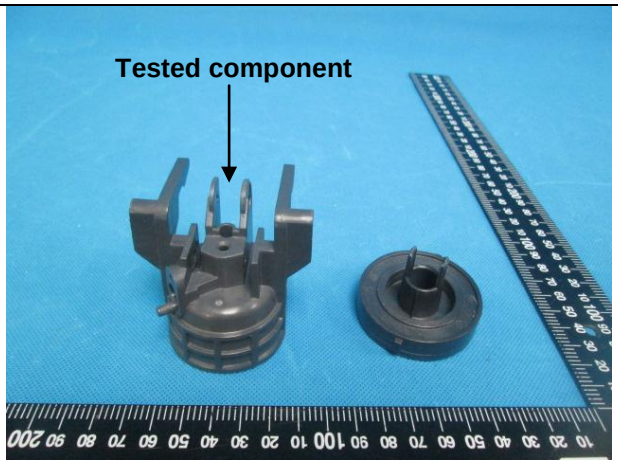
Picture 2, Tank valve base



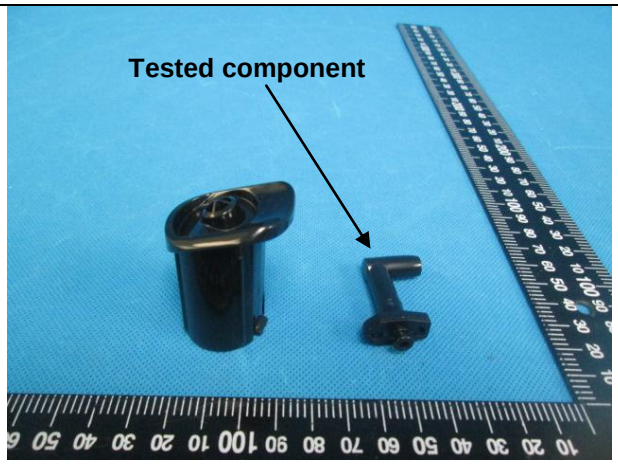
Picture 3, Plastic part in water tank filter / Water tank valve



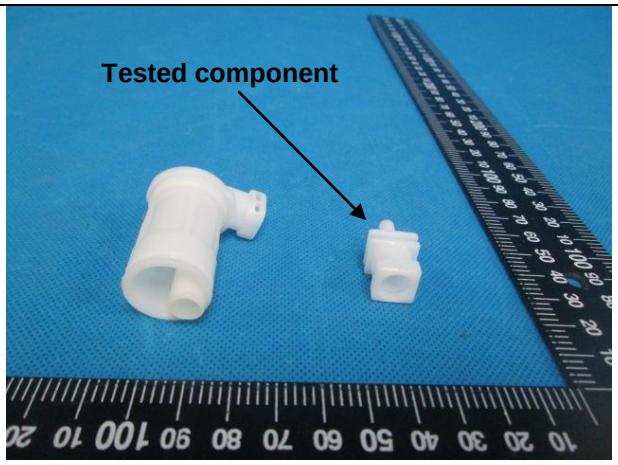
Picture 4, Metal part in water tank filter



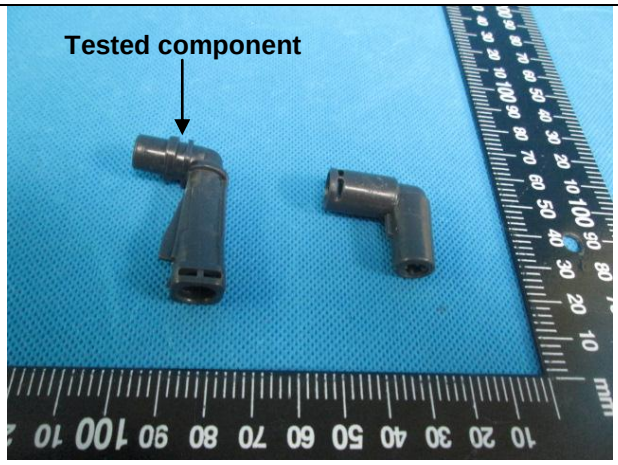
Picture 5, Slider / Capsule box



Picture 6, Capsule connector / Coffee outlet

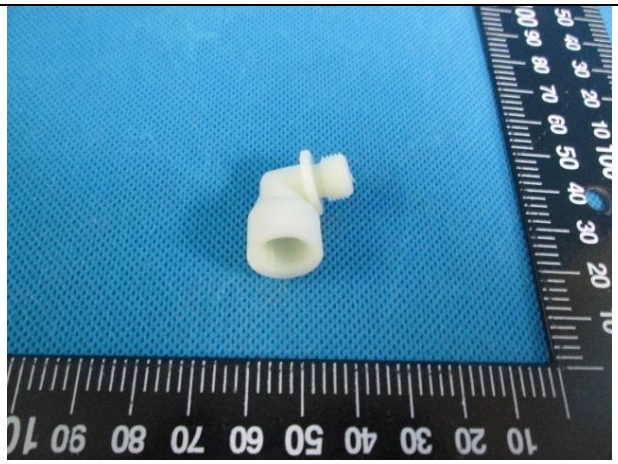


Picture 7, Connector / Outlet tube

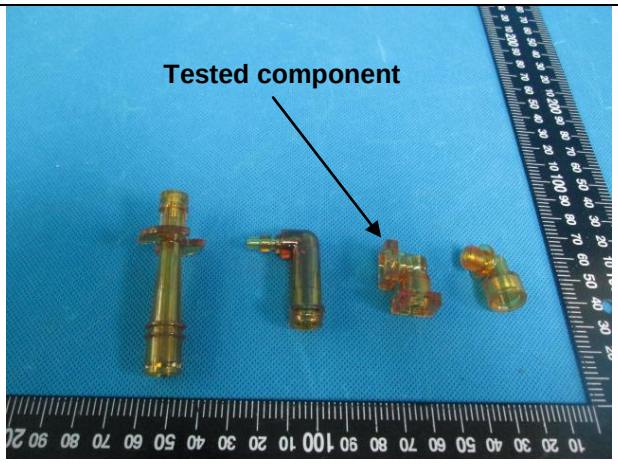


Picture 8, Outlet connector (Big/Small)

Picture 9, Dispenser

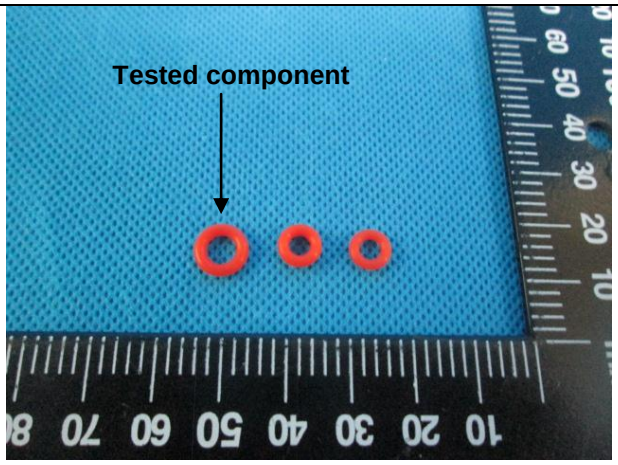


Picture 10, Tie in screw/pump connector

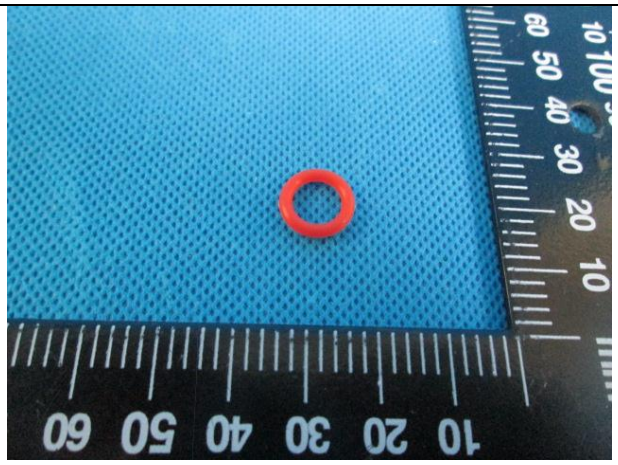


Picture 11, Pump connector / Syphon connector / Transform connector / Inlet tube

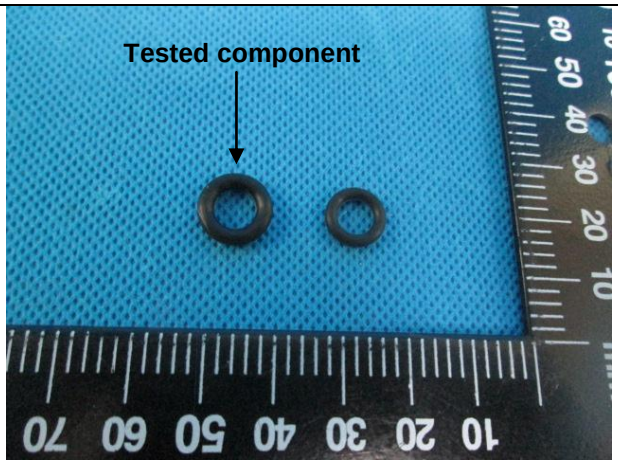
Picture 12, PTFE tube



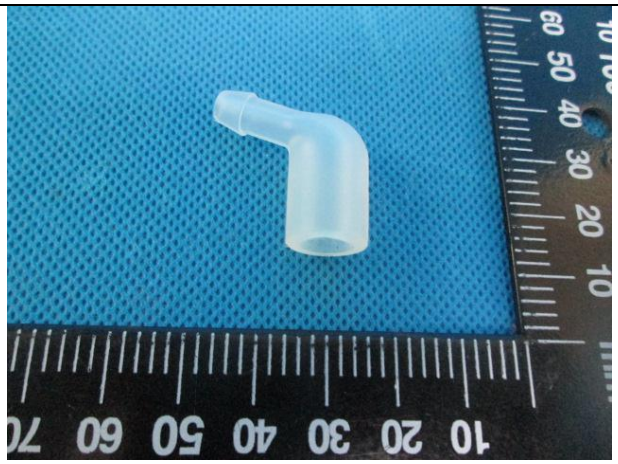
Picture 13, Boiler connector O-ring / Pierce cutter O-ring / Pierce cutter sealing ring



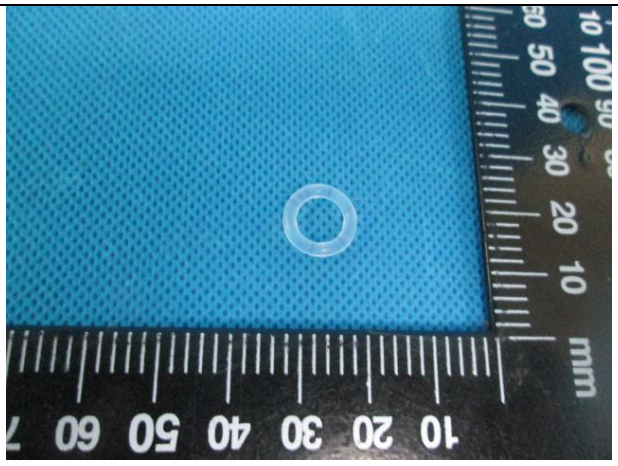
Picture 14, Water tube O-ring



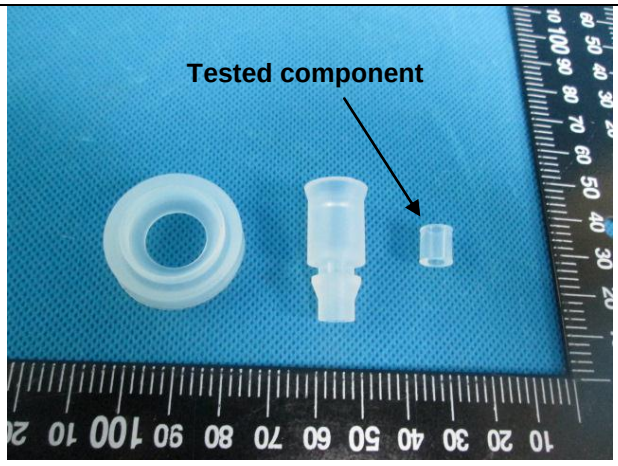
Picture 15, Water tank valve O-ring / Water tube O-ring



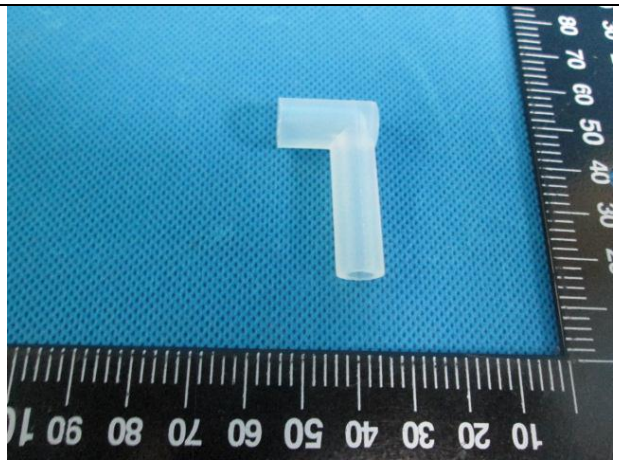
Picture 16, Silicone syphon connector



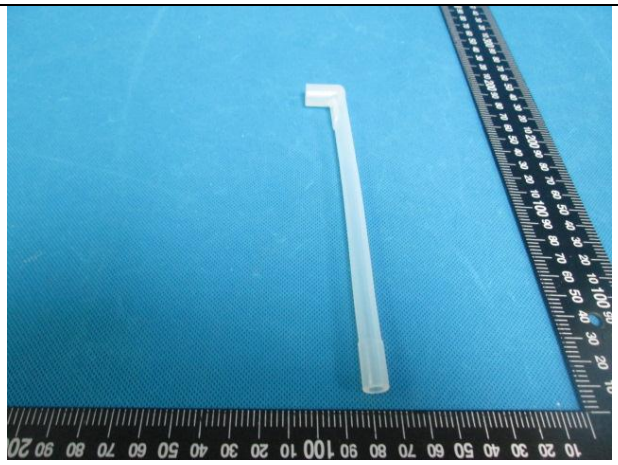
Picture 17, Inlet tube O-ring



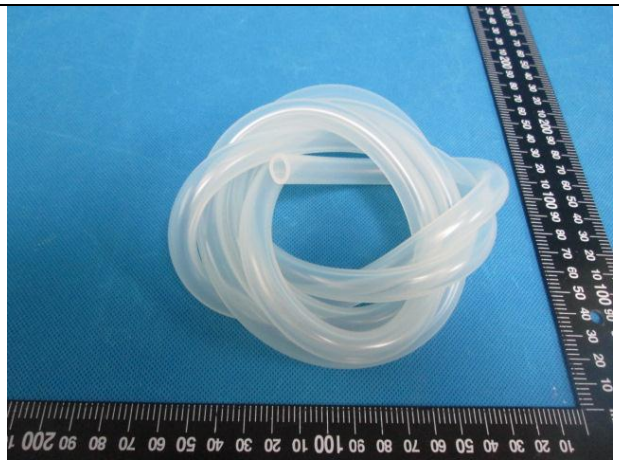
Picture 18, Water tank base gasket / Press valve silicone ring / Capsule connector ring



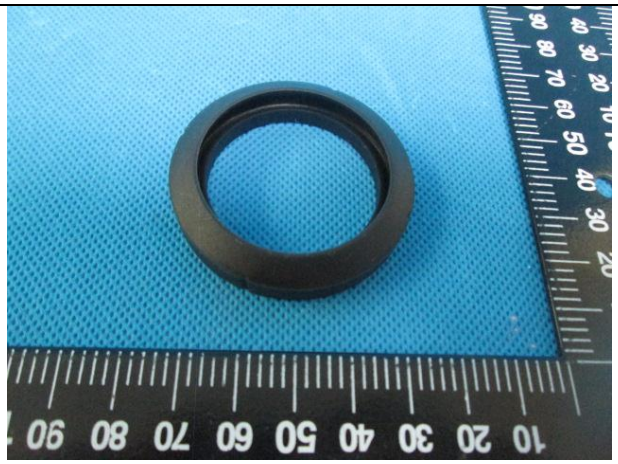
Picture 19, Tank valve base connector



Picture 20, Pump syphon connector

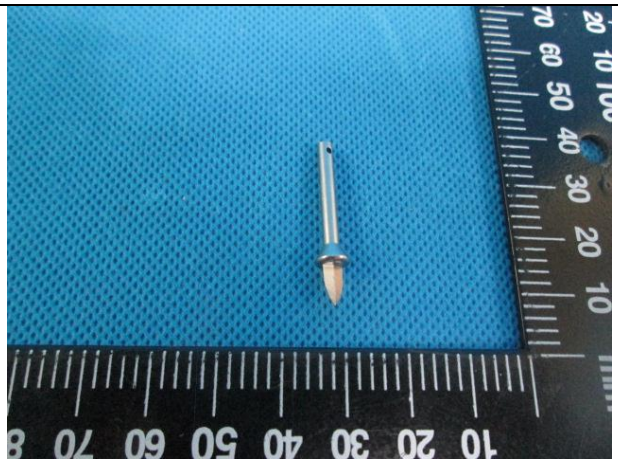


Picture 21, Silicone tube

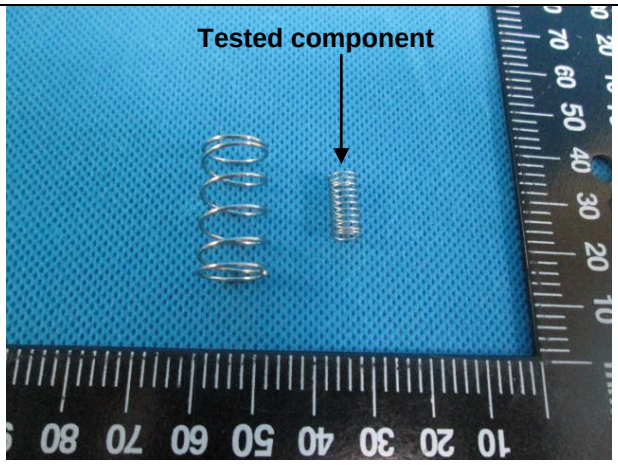


Picture 22, Slider silicone ring

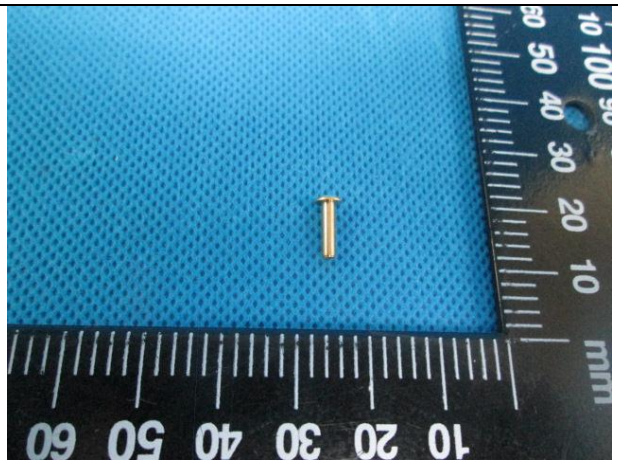
Picture 23, Ceramic nozzle



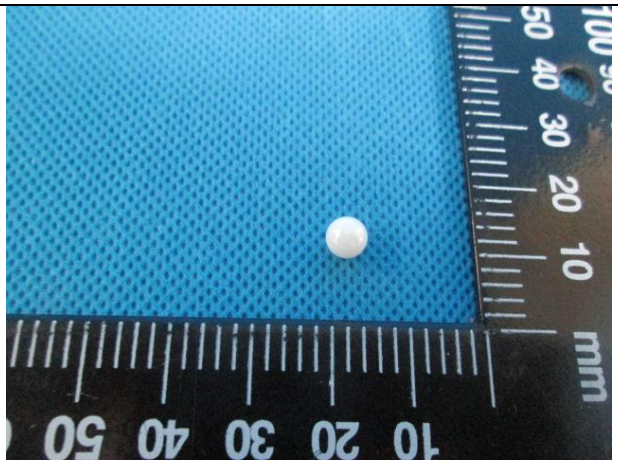
Picture 24, Cutter of pierce capsule



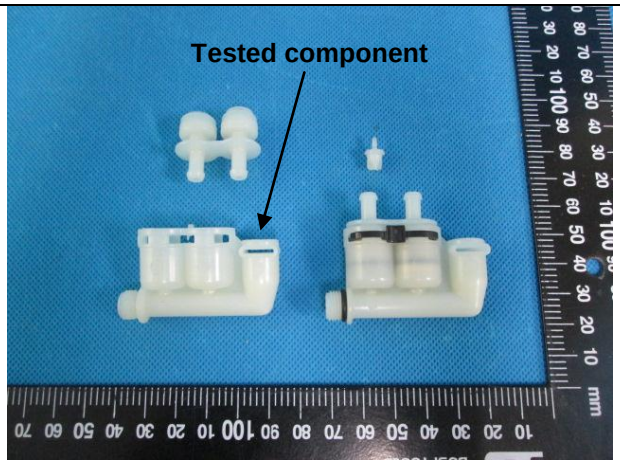
Picture 25, Water tank valve spring / Press valve spring



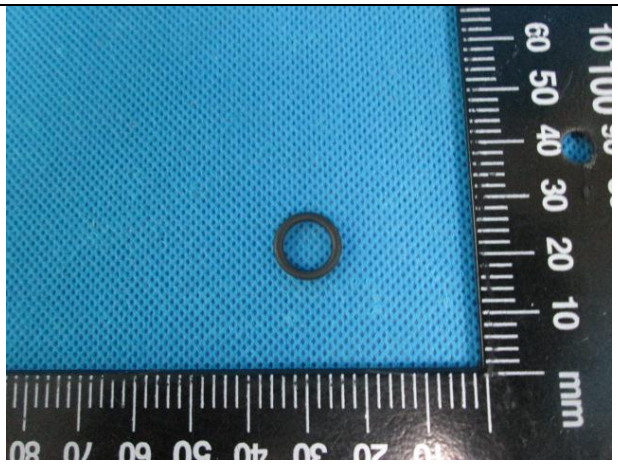
Picture 26, Rivet



Picture 27, Press valve core

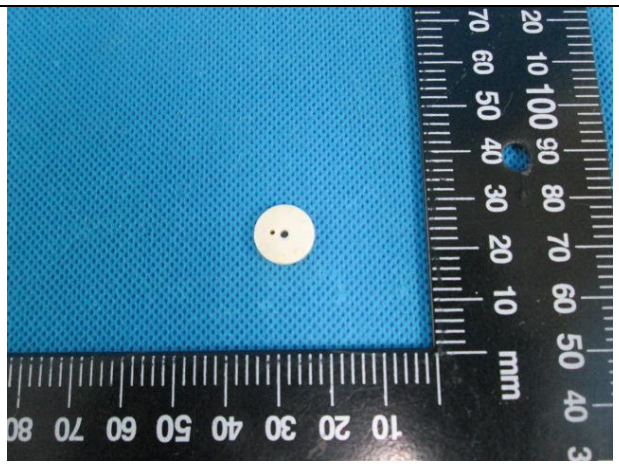


Picture 28, Main body of self-priming valve

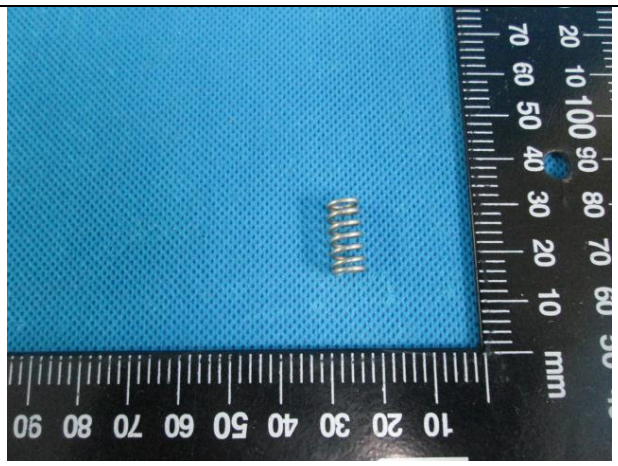


Picture 29, Gasket ring in self-priming valve/O-ring

Picture 30, Valve in self-priming valve

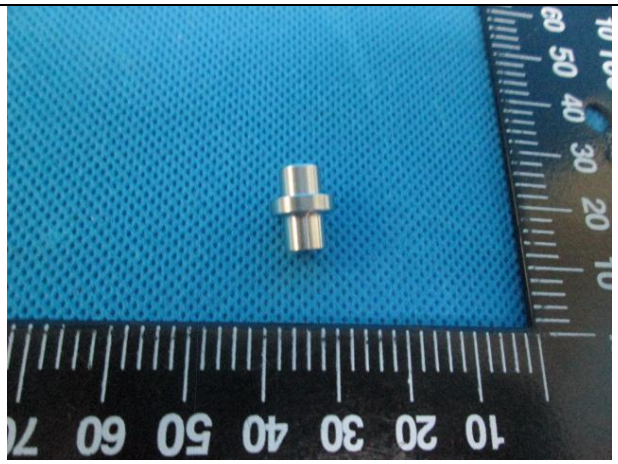


Picture 31, Washer in self-priming valve

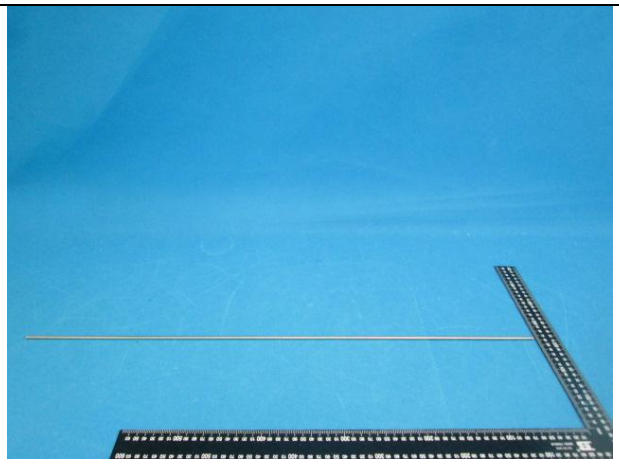


Picture 32, Spring in self-priming valve

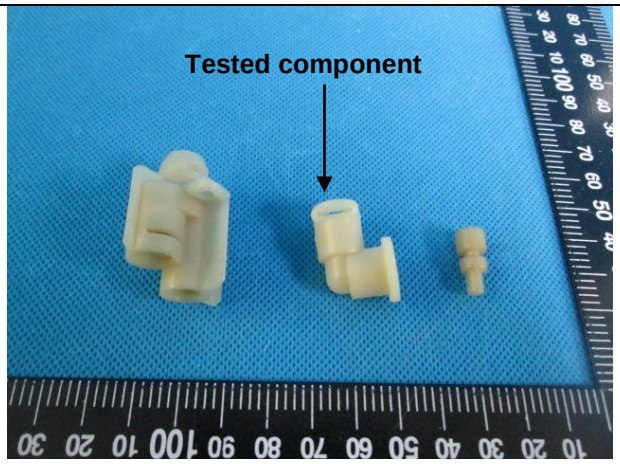
Picture 33, Boiler water pipe



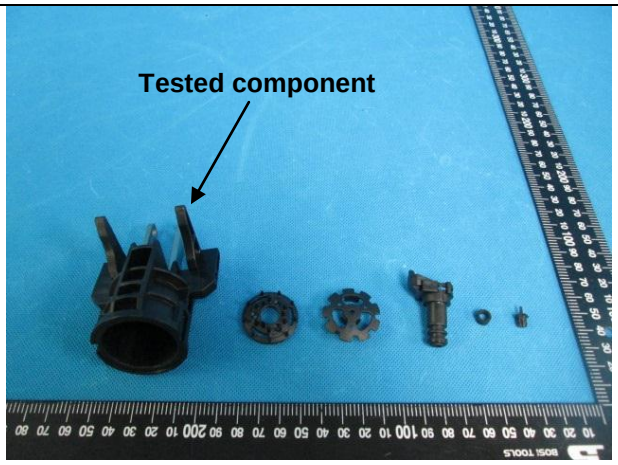
Picture 34, Boiler water pipe connector



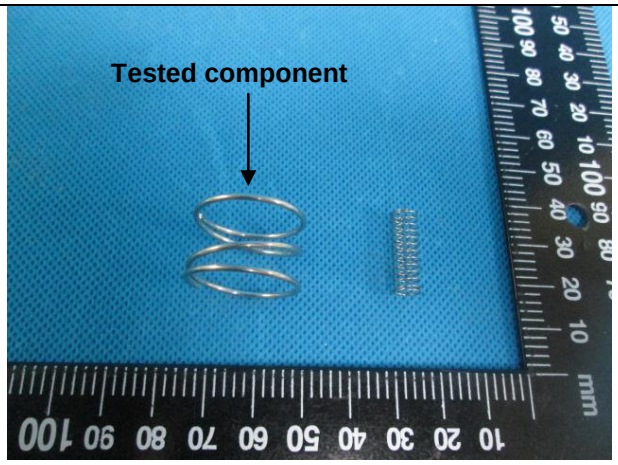
Picture 35, Boiler water pipe



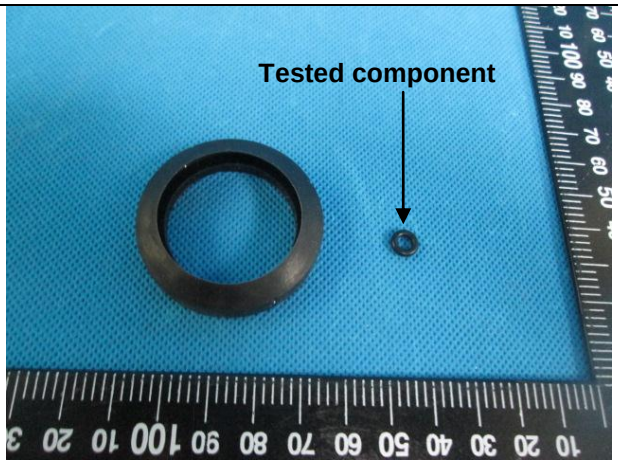
Picture 36, Heater elbow / Valve head / Valve plug



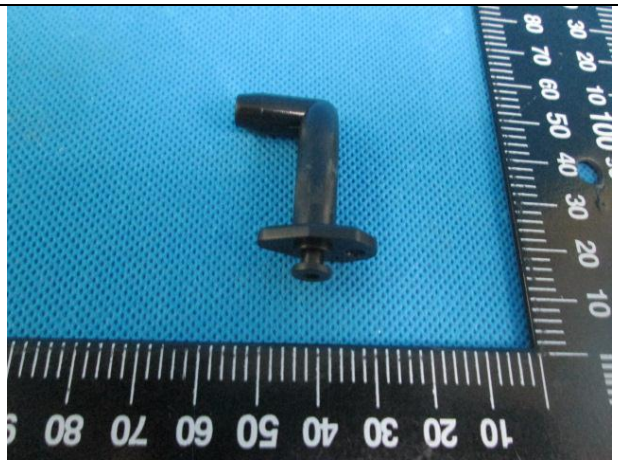
Picture 37, Valve seat / Valve core / Heater bush / Lower driller / Capsule holder / Ejector ring



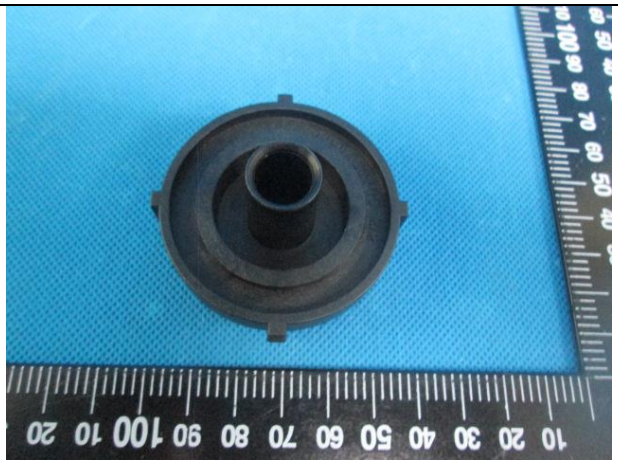
Picture 38, Valve spring / Ejector spring



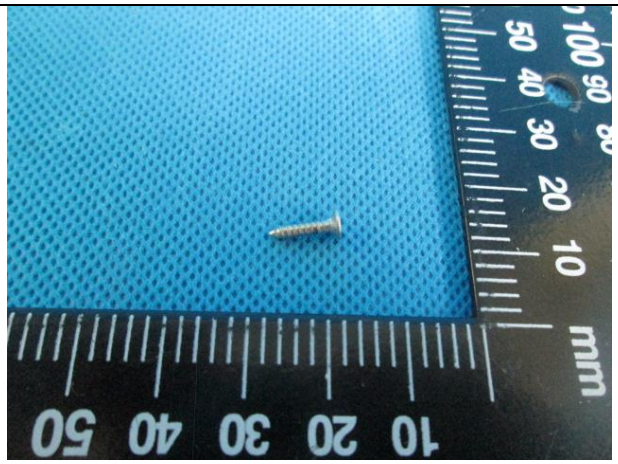
Picture 39, Coffee outlet tube - various O-rings / Gasket



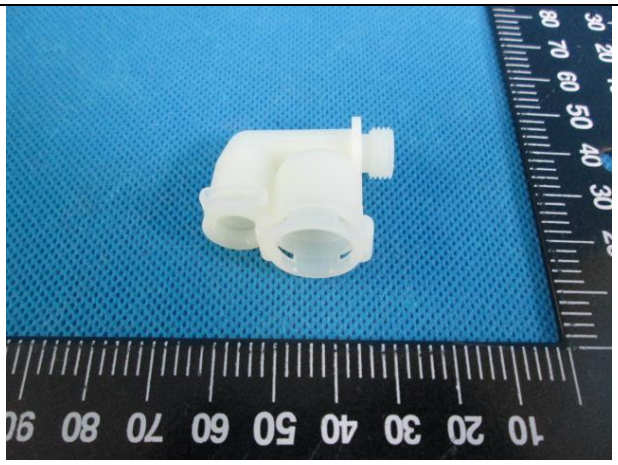
Picture 40, Coffee outlet elbow



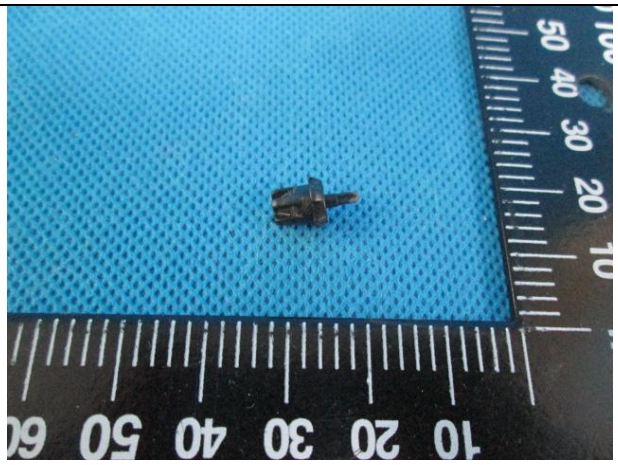
Picture 41, Gasket holder



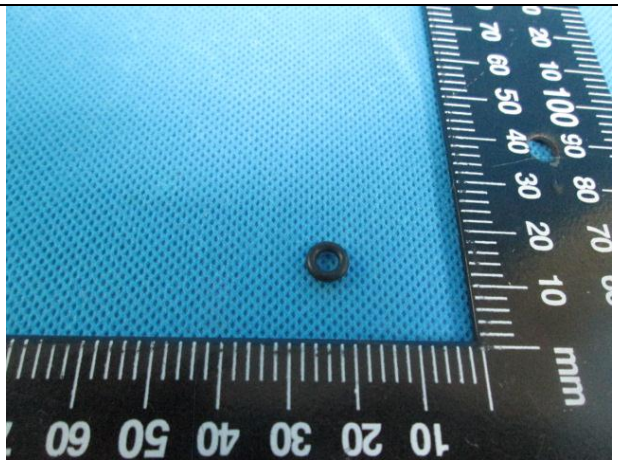
Picture 42, Screw



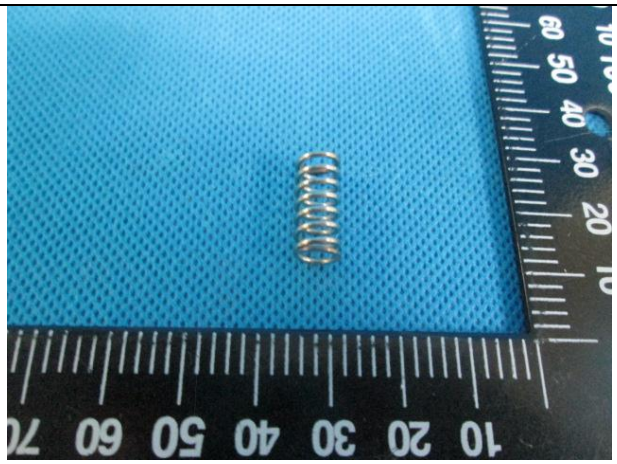
Picture 43, Valve body



Picture 44, Valve core



Picture 45, Valve core O-ring / Valve cover O-ring / Valve O-ring



Picture 46, Safety spring

Picture 47, Finished coffee maker S15

Picture 48, Finished coffee maker C12/S12

Picture 49, Finished coffee maker S04

Picture 50, Finished coffee maker S20

Picture 51, Finished coffee maker S03

Picture 52, Finished coffee maker C14/S14

---End of Report---