



ORIGINAL

Report No. TC.16.11.002550

Date of Issue 11/17/2016

Applicant: Wuxi Coreline Valve Co., Ltd.

Applicant address: No.210 Xinyuan Road. Ehu Industrial Park. Wuxi. P.R.China

Description of the test subject:

Sample	Description	Photo
001	Name: Ball valve Style No: Fig 130/120/125/131/135/160/170 Main Material: CF8M, CF3M, SS316, PTFE+25% carbon, PTFE Buyer: Coreline A/S Manufacture: Wuxi Coreline Valve Co., Ltd.	
002		
003		
004		
005		

Receipt Date of Sample: 11/07/2016

Date of Testing: From 11/07/2016 to 11/15/2016

Sample submitted: The sample(s) was (were) submitted by applicant and identified.

Note: (1) General Terms & Conditions as mentioned overleaf,(2)The results relate only to the items tested,(3)The test report shall not be reproduced except in full without the written approval of the company. (4) Samples are tested as received.

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Conclusion:

Test Items			Conclusion
No.	Items	Standard	
1	Overall Migration test for Plastic	Regulation (EU) No 10/2011 Regulation (EU) No 1282/2011 Regulation (EU) No 1183/2012 Regulation (EU) No 202/2014 Regulation (EU) No 2016/1416	001: Pass 002: Pass
2	Souble Heavy Metals for Plastic		001: Pass 002: Pass
3	Specific Migration of PAA for Plastic		001: Pass 002: Pass
4	Extractable Heavy Metals for metal		003: Pass 004: Pass 005: Pass

Test Results

1. Overall Migration test

Test Method: With reference to EN1186-1:2002 for selection of conditions and test methods.

EN1186-3:2002 aqueous food simulants by total immersion method.

EN1186-14:2002 substitute test

Simulant Used	Test Condition	Overall Migration (mg/ dm <sup>2</sup> )		Maximum Permissible Limit (mg/dm <sup>2</sup> )
		Sample 001	Sample 002	
Surface area(dm <sup>2</sup> )/volume (ml)	--	1/100	1/100	--
3% Ethanol (V/V) Aqueous Solution	4 hours at 100°C	<3.0	<3.0	10
10% Ethanol (V/V) Aqueous Solution	4 hours at 100°C	<3.0	<3.0	10
20% Ethanol (V/V) Aqueous Solution	4 hours at 100°C	<3.0	<3.0	10
50% Ethanol (V/V) Aqueous Solution	4 hours at 100°C	<3.0	<3.0	10
95% Ethanol (V/V) Aqueous Solution	6 hours at 100°C	<3.0	<3.0	10
Isooctane	4 hours at 60°C	<3.0	<3.0	10

Remark: Report the third extractive results.

2.Souble Heavy Metal

Test Method: Sample preparation in 3% Acetic acid at 100°C for 4 hours, followed by analysis using Inductively Coupled Argon Plasma Spectrometer.

Test Item	Results(mg/kg)		Maximum Permissible Limit(mg/kg)
	Sample 001	Sample 002	

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Surface area(dm <sup>2</sup> )/volume (ml)	1/167	1/167	--
Surface Barium	<0.01	<0.01	1
Surface Cobalt	<0.01	<0.01	0.05
Surface Copper	<0.01	<0.01	5
Surface Iron	0.01	<0.01	48
Surface Lithium	<0.01	<0.01	0.6
Surface Manganese	<0.01	<0.01	0.6
Surface Zinc	<0.01	<0.01	5
Surface Aluminum	<0.01	<0.01	1

Remark: Report the third extractive results.

### 3. Specific Migration of PAA

Test Method: Sample preparation with reference to EN 13130-1: 2004 with selection of stimulant and condition, followed by analysis by GC/MS.

Test Item	Test Result (mg/kg)		Maximum Permissible Limit (mg/kg)
	Sample 001	Sample 002	
Surface area(dm <sup>2</sup> )/Volume(ml)	1/167	1/167	/
Specific migration of PAA in 3% acetic acid at 100°C, 4 hours	<0.01	<0.01	0.01

### 4. Extractable Heavy Metals

Test Method: Sample prepared with reference to Technical Guide on Metals and Alloys used in food contact materials and articles of the 1<sup>st</sup> edition in 2013 and by Inductively Coupled Plasma Optical Emission Spectrometer(ICP-OES) and Graphite Furnace Atomic Absorption Spectrometry (GFAAS) analysis

Test condition: 100°C, 4 hours with Citric acid (5 g/L)

Test sample No and description: Sample 003 Silvery metal

Extractable Elements	The 1 <sup>st</sup> Result (mg/kg)	The 2 <sup>nd</sup> Result (mg/kg)	The 1 <sup>st</sup> + 2 <sup>nd</sup> Result (mg/kg)	7*Limit (mg/kg)	The 3rd Result (mg/kg)	Limit (mg/kg)
Silver (Ag)	N.D.	N.D.	0.05	0.56	N.D.	0.08
Aluminium (Al)	N.D.	N.D.	N.D.	35	0.02	5
Chromium (Cr)	N.D.	N.D.	N.D.	1.75	0.06	0.250

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Cobalt (Co)	N.D.	N.D.	N.D.	0.14	N.D.	0.02
Copper (Cu)	N.D.	N.D.	N.D.	28	N.D.	4
Iron (Fe)	N.D.	N.D.	N.D.	280	0.20	40
Magnesium (Mg)	N.D.	N.D.	N.D.	---	0.04	---
Manganese (Mn)	N.D.	N.D.	N.D.	12.6	N.D.	1.8
Molybdenum (Mo)	N.D.	N.D.	N.D.	0.84	N.D.	0.12
Nickel (Ni)	N.D.	N.D.	N.D.	0.98	N.D.	0.14
Tin (Sn)	N.D.	N.D.	N.D.	700	0.04	100
Titanium (Ti)	N.D.	N.D.	N.D.	---	N.D.	---
Vanadium (V)	N.D.	N.D.	N.D.	0.07	N.D.	0.01
Zinc (Zn)	N.D.	N.D.	N.D.	35	0.02	5
Antimony (Sb)	N.D.	N.D.	N.D.	0.28	N.D.	0.04
Arsenic (As)	N.D.	N.D.	N.D.	0.014	N.D.	0.002
Barium (Ba)	N.D.	N.D.	N.D.	8.4	N.D.	1.2
Beryllium (Be)	N.D.	N.D.	N.D.	0.07	N.D.	0.01
Cadmium (Cd)	N.D.	N.D.	N.D.	0.035	N.D.	0.005
Lead (Pb)	N.D.	N.D.	N.D.	0.07	N.D.	0.010
Lithium (Li)	N.D.	N.D.	N.D.	0.336	N.D.	0.048
Mercury (Hg)	N.D.	N.D.	N.D.	0.021	N.D.	0.003
Thallium (Tl)	N.D.	N.D.	N.D.	0.0007	N.D.	0.0001

Test condition: 100°C, 4 hours with Citric acid (5 g/L)

Test sample No and description: Sample 004 Silvery metal

Extractable Elements	The 1 <sup>st</sup> Result (mg/kg)	The 2 <sup>nd</sup> Result (mg/kg)	The 1 <sup>st</sup> + 2 <sup>nd</sup> Result (mg/kg)	7*Limit (mg/kg)	The 3rd Result (mg/kg)	Limit (mg/kg)
Silver (Ag)	N.D.	N.D.	0.05	0.56	N.D.	0.08
Aluminium (Al)	N.D.	N.D.	N.D.	35	N.D.	5

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Chromium (Cr)	N.D.	N.D.	N.D.	1.75	0.02	0.250
Cobalt (Co)	N.D.	N.D.	N.D.	0.14	N.D.	0.02
Copper (Cu)	N.D.	N.D.	N.D.	28	N.D.	4
Iron (Fe)	N.D.	N.D.	N.D.	280	0.12	40
Magnesium (Mg)	N.D.	N.D.	N.D.	---	N.D.	---
Manganese (Mn)	N.D.	N.D.	N.D.	12.6	N.D.	1.8
Molybdenum (Mo)	N.D.	N.D.	N.D.	0.84	N.D.	0.12
Nickel (Ni)	N.D.	N.D.	N.D.	0.98	N.D.	0.14
Tin (Sn)	N.D.	N.D.	N.D.	700	N.D.	100
Titanium (Ti)	N.D.	N.D.	N.D.	---	N.D.	---
Vanadium (V)	N.D.	N.D.	N.D.	0.07	N.D.	0.01
Zinc (Zn)	N.D.	N.D.	N.D.	35	N.D.	5
Antimony (Sb)	N.D.	N.D.	N.D.	0.28	N.D.	0.04
Arsenic (As)	N.D.	N.D.	N.D.	0.014	N.D.	0.002
Barium (Ba)	N.D.	N.D.	N.D.	8.4	N.D.	1.2
Beryllium (Be)	N.D.	N.D.	N.D.	0.07	N.D.	0.01
Cadmium (Cd)	N.D.	N.D.	N.D.	0.035	N.D.	0.005
Lead (Pb)	N.D.	N.D.	N.D.	0.07	N.D.	0.010
Lithium (Li)	N.D.	N.D.	N.D.	0.336	N.D.	0.048
Mercury (Hg)	N.D.	N.D.	N.D.	0.021	N.D.	0.003
Thallium (Tl)	N.D.	N.D.	N.D.	0.0007	N.D.	0.0001

Test condition: 100°C, 4 hours with Citric acid (5 g/L)

Test sample No and description: Sample 005 Silvery metal

Extractable Elements	The 1 <sup>st</sup> Result (mg/kg)	The 2 <sup>nd</sup> Result (mg/kg)	The 1 <sup>st</sup> + 2 <sup>nd</sup> Result (mg/kg)	7*Limit (mg/kg)	The 3rd Result (mg/kg)	Limit (mg/kg)
Silver (Ag)	N.D.	N.D.	0.05	0.56	N.D.	0.08

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Aluminium (Al)	N.D.	N.D.	N.D.	35	0.02	5
Chromium (Cr)	N.D.	N.D.	N.D.	1.75	0.04	0.250
Cobalt (Co)	N.D.	N.D.	N.D.	0.14	N.D.	0.02
Copper (Cu)	N.D.	N.D.	N.D.	28	N.D.	4
Iron (Fe)	N.D.	N.D.	N.D.	280	0.22	40
Magnesium (Mg)	N.D.	N.D.	N.D.	---	N.D.	---
Manganese (Mn)	N.D.	N.D.	N.D.	12.6	N.D.	1.8
Molybdenum (Mo)	N.D.	N.D.	N.D.	0.84	N.D.	0.12
Nickel (Ni)	N.D.	N.D.	N.D.	0.98	0.02	0.14
Tin (Sn)	N.D.	N.D.	N.D.	700	0.02	100
Titanium (Ti)	N.D.	N.D.	N.D.	---	N.D.	---
Vanadium (V)	N.D.	N.D.	N.D.	0.07	N.D.	0.01
Zinc (Zn)	N.D.	N.D.	N.D.	35	N.D.	5
Antimony (Sb)	N.D.	N.D.	N.D.	0.28	N.D.	0.04
Arsenic (As)	N.D.	N.D.	N.D.	0.014	N.D.	0.002
Barium (Ba)	N.D.	N.D.	N.D.	8.4	N.D.	1.2
Beryllium (Be)	N.D.	N.D.	N.D.	0.07	N.D.	0.01
Cadmium (Cd)	N.D.	N.D.	N.D.	0.035	N.D.	0.005
Lead (Pb)	N.D.	N.D.	N.D.	0.07	N.D.	0.010
Lithium (Li)	N.D.	N.D.	N.D.	0.336	N.D.	0.048
Mercury (Hg)	N.D.	N.D.	N.D.	0.021	N.D.	0.003
Thallium (Tl)	N.D.	N.D.	N.D.	0.0007	N.D.	0.0001

Extractable Elements	MDL(mg/kg)	Extractable Elements	MDL(mg/kg)	Extractable Elements	MDL(mg/kg)
Silver (Ag)	0.01	Molybdenum (Mo)	0.01	Barium (Ba)	0.01
Aluminium (Al)	0.01	Nickel (Ni)	0.01	Beryllium (Be)	0.01

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Chromium (Cr)	0.01	Tin (Sn)	0.01	Cadmium (Cd)	0.001
Cobalt (Co)	0.01	Titanium (Ti)	0.01	Lead (Pb)	0.001
Copper (Cu)	0.01	Vanadium (V)	0.01	Lithium (Li)	0.01
Iron (Fe)	0.01	Zinc (Zn)	0.01	Mercury (Hg)	0.001
Magnesium (Mg)	0.01	Antimony (Sb)	0.01	Thallium (Tl)	0.0001
Manganese (Mn)	0.01	Arsenic (As)	0.001	---	---

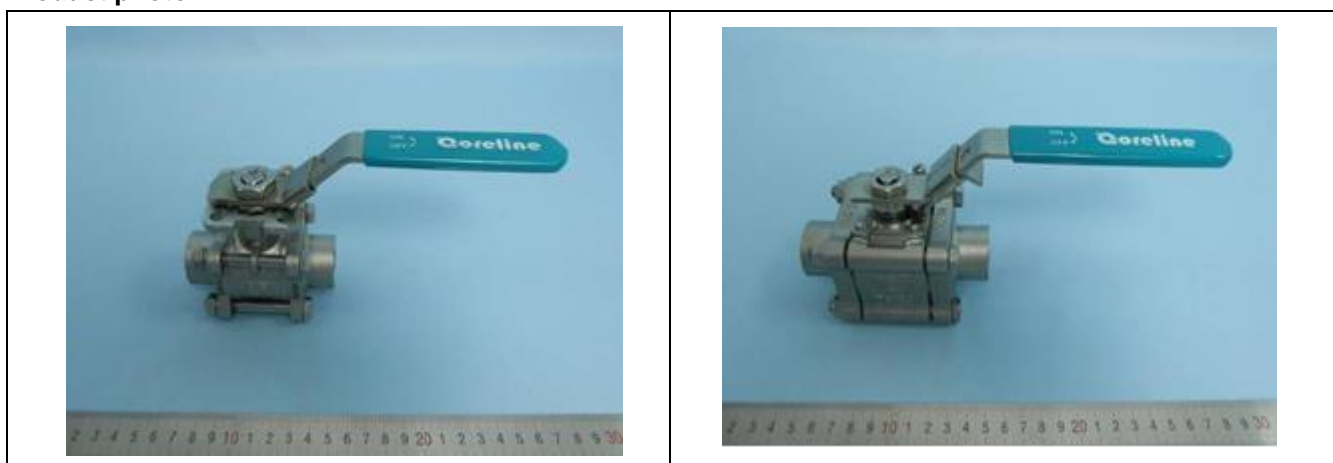
**Remark:**

- 1.The above table is the MDL of the Extractable Heavy Metals testing 1.MDL = Method Detection Limit.
- 2.N.D.= Not detected, less than MDL.
- 3.The submitted sample/component is a repeated use article. The migration test was carried out three times on the same article. The sum of the results of the first and second tests should not exceed seven times the limit (Result 1<sup>st</sup> test + Result 2<sup>nd</sup> test <7\* limit) and the Result 3<sup>rd</sup> should not exceed the limit.

**Test Part Description:**

- 1# Black PTFE
- 2# White PTFE
- 3# Silvery metal
- 4# Silvery metal
- 5# Silvery metal

**Product photo**



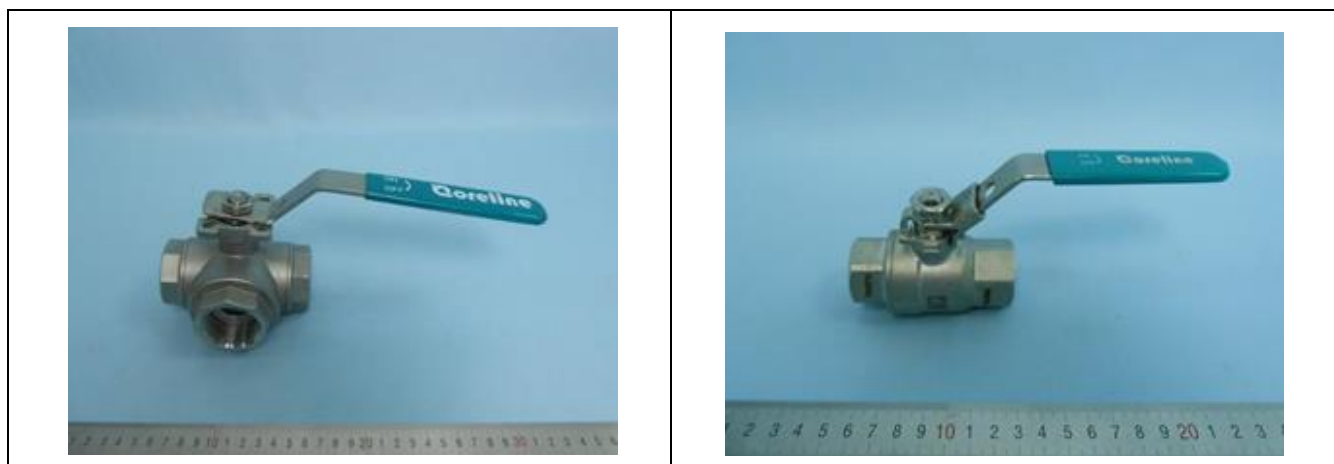
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Changzhou Jinbiao Railway Transportation Technical Service Co., Ltd.

Drafted by:

Lynn liu

Approved by:

Shen hui

-End of Report-

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