



TEST REPORT

Report No: ST20250422001-2-R1

Sample Name: Butterfly Valve

Authorized By: Shanghai Yan Controlled Industrial
Technology Co., Ltd.

Test Type: Commissioned Test

Report Date: May 27, 2025

Approved by;

Shirley



STAR-TECH (Shenzhen) Co., Ltd.

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Client Name : Shanghai Yan Controlled Industrial Technology Co., Ltd.

Client Address : Room 301, Building 95, Shengtai Enterprise Park, Jianhao Road, Pudong New Area, Shanghai

Sample Name : Butterfly Valve

Brand : HEATFLAM

Specification/Model : 4BV-ARB

Reference : 104BV-B, 6BV-ARB, 106V-B, 8BV-ARB , 108BV-B, 10BV-ARB, 110BV-B, 12BV-ARB , 112BV-B, 16BV-ARB, 116BV-B

Sample Number : ST0422001-2

Sample Received Date : April 22, 2025

Test Period : April 22, 2025~April 25, 2025

Conclusion : According to the client requirements,the sample(s) were tested for lead (Pb), cadmium (Cd), mercury (Hg), hexavalent chromium (Cr⁶⁺), polybrominated biphenyls (PBBs), polybrominated diphenyl ethers (PBDEs), ,di-isobutyl phthalate (DIBP) , di- (2-ethylhexyl) phthalate (DEHP), benzyl butyl phthalate (BBP) and di-n-butyl phthalate (DBP) in accordance with Directive 2011/65/EU(RoHS) and its amendment Directive (EU)2015/863.
The result is as specified.

Prepared by:

Lang Huilin

Checked by:

Zhou Jie

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1. Sample Photos

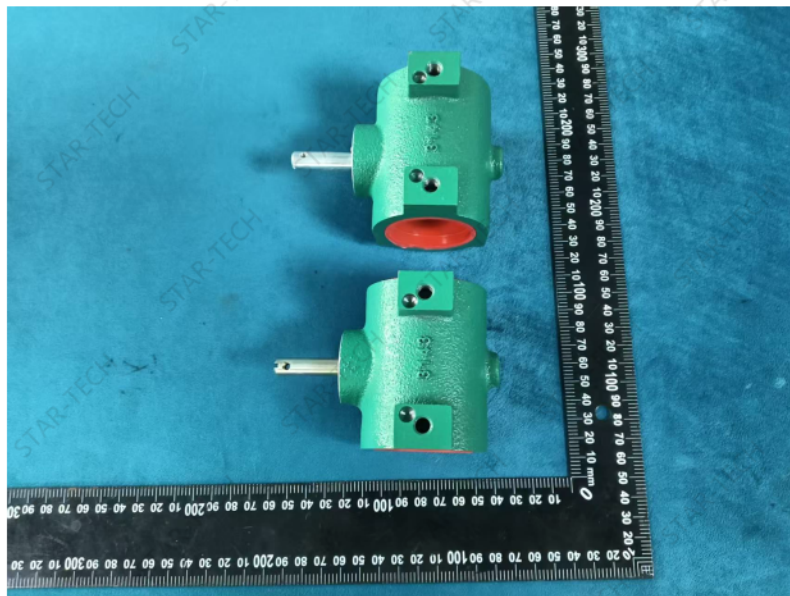


Figure 1. Sample photo

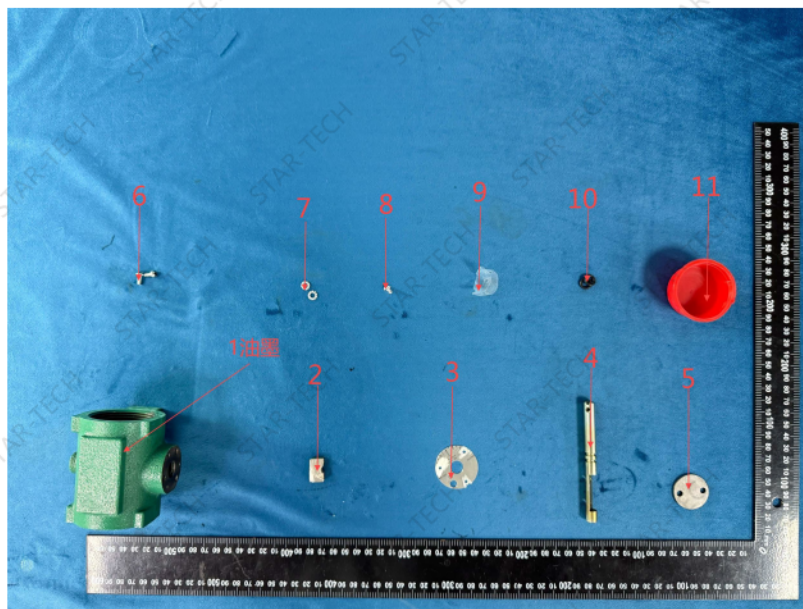


Figure 2. Disassembling photo

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2. Test Items

Test items

RoHS 10 items (Pb、Cd、Hg、Cr⁶⁺、PBBs、PBDEs、DIBP、DBP、BBP、DEHP)

3. Test Method & Equipment

a. XRF Scan Test

Test method: IEC 62321-3-1:2013

Element Test	Polymer	Metal	Composite material
Pb	BL≤ (700-3σ) < X < (1300+3σ) ≤OL	BL≤ (700-3σ) < X < (1300+3σ) ≤OL	BL≤ (300-3σ) < X < (1300+3σ) ≤OL
Cd	BL≤ (70-3σ) < X < (130+3σ) ≤OL	BL≤ (70-3σ) < X < (130+3σ) ≤OL	LOD < X < (130+3σ) ≤OL
Hg	BL≤ (700-3σ) < X < (1300+3σ) ≤OL	BL≤ (700-3σ) < X < (1300+3σ) ≤OL	BL≤ (300-3σ) < X < (1300+3σ) ≤OL
Cr	BL≤ (700-3σ) < X	BL≤ (700-3σ) < X	BL≤ (300-3σ) < X
Br	BL≤ (300-3σ) < X	/	BL≤ (230-3σ) < X

Explanation:

- 1、BL — Lower than XRF Scan Test
- 2、OL — Higher than XRF Scan Test, Further chemical tests are needed to confirm this
- 3、X — Samples within the XRF scan test value range require further chemical confirmation
- 4、3σ — It shows the repeatability of the analytical instrument

b. Chemical test

Test Items	Test Method	Test Equipment	MDL	Limit
Pb	IEC 62321-5:2013	ICP-OES	10mg/kg	1000 mg/kg
Cd	IEC 62321-5:2013	ICP-OES	10mg/kg	100 mg/kg
Hg	IEC 62321-4:2013/AMD 1:2017	ICP-OES	10mg/kg	1000 mg/kg
Cr ⁶⁺	IEC 62321-7-1:2015	UV-Vis	0.10 μg/cm ²	-
	IEC 62321-7-2:2017	UV-Vis	10 mg/kg	1000 mg/kg
PBBs	IEC 62321-6:2015	GC-MS	-	1000 mg/kg
PBDEs	IEC 62321-6:2015	GC-MS	-	1000 mg/kg

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Test Items	Test Method	Test Equipment	MDL	Limit
DIBP	IEC 62321-8:2017	GC-MS	30 mg/kg	1000 mg/kg
DBP	IEC 62321-8:2017	GC-MS	30 mg/kg	1000 mg/kg
BBP	IEC 62321-8:2017	GC-MS	30 mg/kg	1000 mg/kg
DEHP	IEC 62321-8:2017	GC-MS	30 mg/kg	1000 mg/kg

4. Test Process

In appendix

5. Test Results

Sample description	Items	Unite	XRF Scan results	Test results	Result
1 Green Coating	Pb	mg/kg	BL	N.D.	PASS
	Cd	mg/kg	BL	N.D.	
	Hg	mg/kg	BL	N.D.	
	Cr ⁶⁺	mg/kg	BL	N.D.	
	PBBs	mg/kg	BL	N.D.	
	PBDEs	mg/kg	BL	N.D.	
	DIBP	mg/kg	/	N.D.	
	DBP	mg/kg	/	N.D.	
	BBP	mg/kg	/	N.D.	
	DEHP	mg/kg	/	N.D.	
2 Silvery Metal	Pb	mg/kg	BL	N.D.	PASS
	Cd	mg/kg	BL	N.D.	
	Hg	mg/kg	BL	N.D.	
	Cr ⁶⁺	µg/cm ²	BL	N.D.	
3 Silvery Metal	Pb	mg/kg	BL	N.D.	PASS
	Cd	mg/kg	BL	N.D.	



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Sample description	Items	Unite	XRF Scan results	Test results	Result
	Hg	mg/kg	BL	N.D.	
	Cr ⁶⁺	μg/cm ²	BL	N.D.	
4 Golden Metal	Pb	mg/kg	BL	N.D.	PASS
	Cd	mg/kg	BL	N.D.	
	Hg	mg/kg	BL	N.D.	
	Cr ⁶⁺	μg/cm ²	X	Negative	
5 Grey Metal	Pb	mg/kg	BL	N.D.	PASS
	Cd	mg/kg	BL	N.D.	
	Hg	mg/kg	BL	N.D.	
	Cr ⁶⁺	μg/cm ²	X	Negative	
6 Silvery Metal	Pb	mg/kg	BL	N.D.	PASS
	Cd	mg/kg	BL	N.D.	
	Hg	mg/kg	BL	N.D.	
	Cr ⁶⁺	μg/cm ²	BL	N.D.	
7 Silvery Metal	Pb	mg/kg	BL	N.D.	PASS
	Cd	mg/kg	BL	N.D.	
	Hg	mg/kg	BL	N.D.	
	Cr ⁶⁺	μg/cm ²	BL	N.D.	
8 Silvery Metal	Pb	mg/kg	BL	N.D.	PASS
	Cd	mg/kg	BL	N.D.	
	Hg	mg/kg	BL	N.D.	
	Cr ⁶⁺	mg/kg	BL	N.D.	
	PBBs	mg/kg	BL	N.D.	
	PBDEs	mg/kg	BL	N.D.	
	DIBP	mg/kg	/	N.D.	
	DBP	mg/kg	/	N.D.	
	BBP	mg/kg	/	N.D.	

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Sample description	Items	Unite	XRF Scan results	Test results	Result
	DEHP	mg/kg	/	N.D.	
9 Transparent Plastic	Pb	mg/kg	BL	N.D.	PASS
	Cd	mg/kg	BL	N.D.	
	Hg	mg/kg	BL	N.D.	
	Cr ⁶⁺	mg/kg	BL	N.D.	
	PBBs	mg/kg	BL	N.D.	
	PBDEs	mg/kg	BL	N.D.	
	DIBP	mg/kg	/	N.D.	
	DBP	mg/kg	/	N.D.	
	BBP	mg/kg	/	N.D.	
	DEHP	mg/kg	/	N.D.	
10 Black Plastic	Pb	mg/kg	BL	N.D.	PASS
	Cd	mg/kg	BL	N.D.	
	Hg	mg/kg	BL	N.D.	
	Cr ⁶⁺	mg/kg	BL	N.D.	
	PBBs	mg/kg	BL	N.D.	
	PBDEs	mg/kg	BL	N.D.	
	DIBP	mg/kg	/	N.D.	
	DBP	mg/kg	/	N.D.	
	BBP	mg/kg	/	N.D.	
	DEHP	mg/kg	/	N.D.	
11 Red Plastic	Pb	mg/kg	BL	N.D.	PASS
	Cd	mg/kg	BL	N.D.	
	Hg	mg/kg	BL	N.D.	
	Cr ⁶⁺	mg/kg	BL	N.D.	
	PBBs	mg/kg	BL	N.D.	
	PBDEs	mg/kg	BL	N.D.	

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Sample description	Items	Unite	XRF Scan results	Test results	Result
	DIBP	mg/kg	/	N.D.	
	DBP	mg/kg	/	N.D.	
	BBP	mg/kg	/	N.D.	
	DEHP	mg/kg	/	N.D.	

Remark:

- 1) 1 mg/kg = 1ppm = 0.0001%
- 2) MDL = Method Detection limit
- 3) N.D. = Not detected (<MDL)
- 4) “/”= No detection required
- 5) Negative =Hexavalent chromium is not detected in incolurless and coloured corrosion-protected coatings on metal

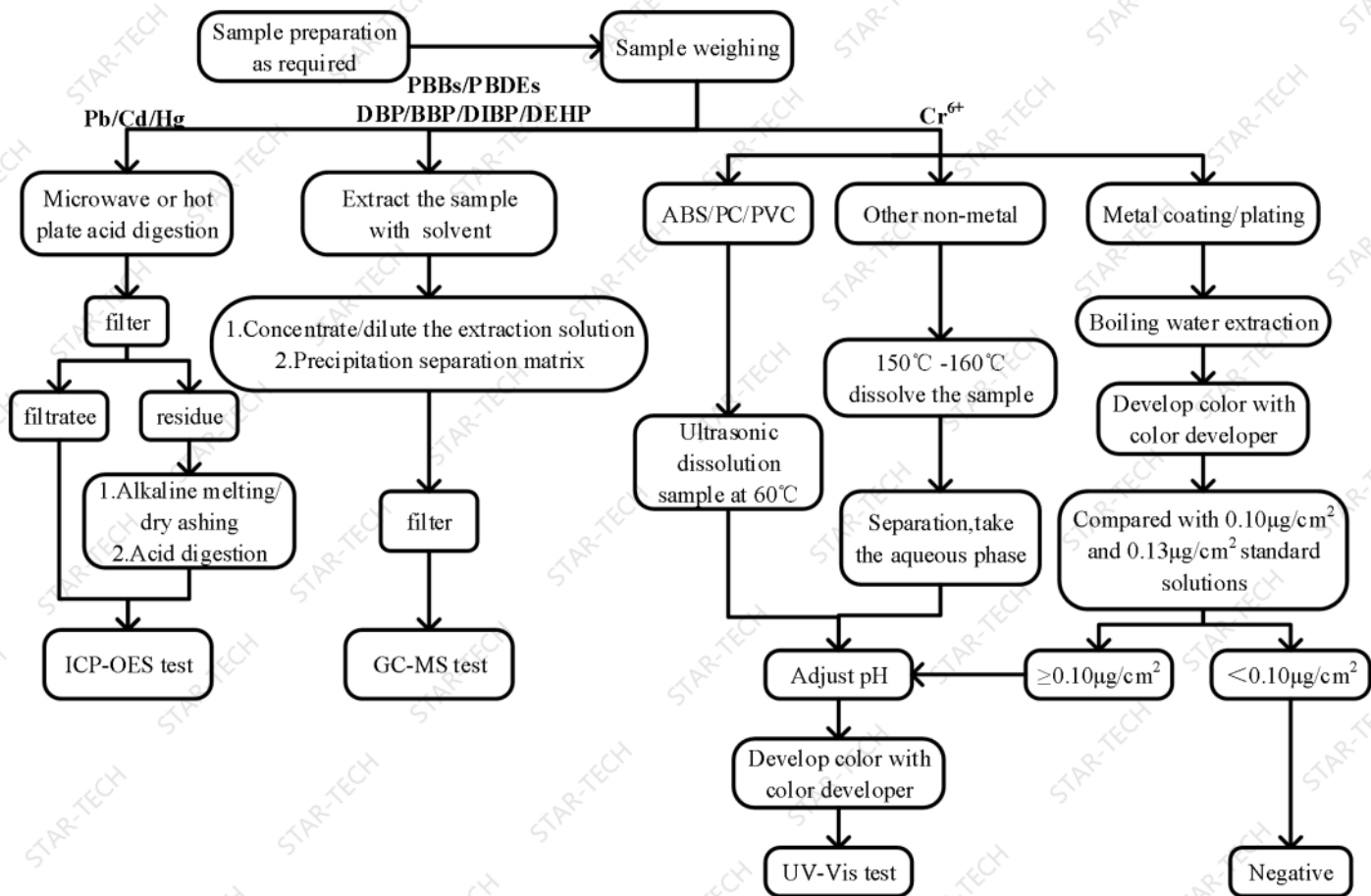
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Appendix

The sample is processed according to the following process



* * * * * END * * * * *

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Statement

- 1.The information listed on the first page of this test report, except the date of receipt, test date, test result and test conclusion, is provided by the client. The client shall be responsible for the representativeness of sample and authenticity of materials, for which STAR-TECH shall bear no responsibilities.
- 2.The test conclusion of this report are only applicable to the test samples submitted for inspection, and the samples submitted for inspection are only kept for 30 days, and the company does not bear other joint and several liabilities other than the test results.
- 3.The test report shall take effect only with the seal of the company, and this report shall not be deleted or modified.
- 4.This report shall not be reproduced in whole or in part without the written authorization of the Company.
- 5.Objection should be issued in 15 days upon receiving the report, overdue opinion is inadmissible.
- 6.If the report is not stamped with the accreditation recognized seal, it will only be used for scientific research, education, and internal quality control activities, and is not used for the purpose of issuing supporting data to the society.
- 7.This report replaces the ST20250422001-2 test report issued on May 26, 2025. The original report has been cancelled.