

Summary of Test Results

Reference no. : BC-SUMMARY-2019-36

Customer : Purdon King (International) Limited
Address : 19/F., Tak Lee Commerical Building, 113-117 Wanchai Road, Hong Kong
Sample description : Thermostatic Mixing Valves
Manufacturer : Pegler Yorkshire Group Limited
Brand name : Pegler
Body marking : Model, Pegler & on cap. Tectite & 'P' on body
Model no. : PEG402UA
Origin : UK
Sample submitted by : Purdon King (International) Limited
Test standard : BS EN 12164 : 2016 / BS EN 10088-1 : 2014 / AS/NZS 4020 : 2005
Test period : 06 March to 26 November 2019

A) Sample List

DN (mm)	Specimen no.
15	BC0190221-011-MISL
22	BC0190221-012-MISL

B) Test Item**1) Chemical Composition - Body of Main Valve (BS EN 12164 : 2016 Table 6 Grade CW602N)**

DN (mm)	Test results	Castco LRN
15	Passed	MS0190329-43
22	Passed	MS0190329-44

Note : Detail of parts refer to Page 2B (Remark 2).

2) Chemical Composition - Body of Ball Valve (BS EN 12164 : 2016 Table 6 Grade CW602N)

DN (mm)	Test results	Castco LRN
15	Passed	MS0190819-34
22	Passed	MS0190819-36

Note : Detail of parts refer to Page 2B (Remark 3).

3) Chemical Composition - Ball of Ball Valve (BS EN 12164 : 2016 Table 6 Grade CW602N)

DN (mm)	Test results	Castco LRN
15	Passed	MS0191011-20
22	Passed	MS0191011-21

Note : Detail of parts refer to Page 2B (Remark 3).

4) Chemical Composition - Spring of Main Valve (BS EN 10088-1 : 2014 Table 2 Grade 1.4301 (304))

DN (mm)	Test results	Castco LRN
15	Passed	MS0191118-3
22	Passed	MS0191118-4

5) Testing of Products for use in Contact with Drinking Water (AS/NZS 4020 : 2005 Appendix H)

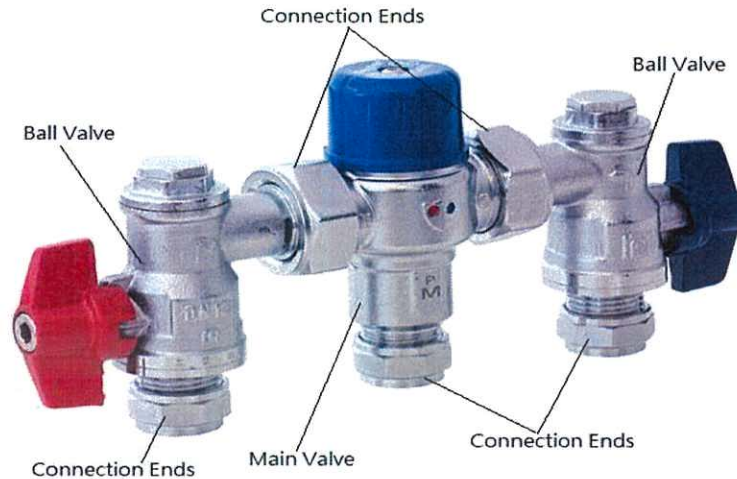
DN (mm)	Test results	Castco LRN
15	Passed	EN0190304-11
22	Passed	EN0190304-12

Remark (s) :

1. This page no. 1B of this summary supersedes page no. 1A & 2A of the previous summary of Reference no. : BC-SUMMARY-2019-36 issued on 03 December 2019.

Summary of Test Results

Reference no. : BC-SUMMARY-2019-36

C) Product Photo

Remark (s) :

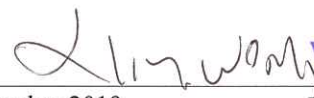
1. Electroplating materials were observed on the internal water passage surfaces of the sample under a non-destructive and unaided visual inspection.
2. The connection ends of main valve and ball valve are the same material of the test item 1 was shown.
3. The body and ball of other ball valve are the same materials of the test item 2 & 3 were shown.
4. This page no. 2B of this summary supersedes page no. 3A of the previous summary of Reference no. : BC-SUMMARY-2019-36 issued on 03 December 2019.

Prepare by : _____


FU HO MAN
Assistant Technical Manager

Date : 19 December 2019

Review by : _____


WONG KA MAN
Senior Manager

Date : 19 December 2019

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue: 30-10-2019

Page 1A of 3

Castco LRN: MS0190329-43

Details as supplied by customer

Name of Customer : Purdon King (International) Limited
Address : 19/F., Tak Lee Commercial Building, 113-117 Wanchai Road, Hong Kong
Job Title : --
Contract No. : --
Customer's Ref. No. : --

Sample details as supplied by customer

Date Sampled : --
Date of Sample Received : 29-03-2019
Test Period : 10-04-2019
Sample Description : 15mm Thermostatic Mixing Valve (Main Valve-Body)
Specification : BS EN 12164:2016, Table 6, Grade CW602N
Specimen No. : BC0190221-011-MISL
Location of Work : -- / Model no.: PEG402UA
Brand name : Pegler / Origin : UK
Manufacturer : Pegler Yorkshire Group Limited

Test Method(s):-

- 1) In House Method: ST-Multi-4 (Spark-OES)
- 2) By Calculation


Remark:

- I. Test results only relate to the specimen tested.
- II. This page no. 1A of this test report supersedes page no. 1 of the previous test report of Castco LRN MS0190329-43 issued on 26-04-2019.
- III Refer to the previous test report of Castco LRN MS0190329-43, the sample details were revised in this issue due to the supplementary information of the client.

Checked by: _____


Cheng Chi Fai
Senior Manager

Approved Signatory: _____


LEE Stephen Shu Hang
Ph.D.
Technical Director

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue: 26-04-2019

Page 2 of 3

Castco LRN: MS0190329-43

Chemical Analysis		Result
1) Aluminium	Al %	0.028
1) Arsenic	As %	0.082
1) Iron	Fe %	0.035
1) Manganese	Mn %	<0.010
1) Nickel	Ni %	0.020
1) Lead	Pb %	1.75
1) Tin	Sn %	0.067
1) Zinc	Zn %	36.6
1) Copper	Cu %	61.4

Form No.: CHM Cu&Cu Alloy-3 T dd 03/02/2016

Test Report

Chemical Analysis of Copper and Copper Alloy

Date of issue: 26-04-2019

Page 3 of 3

Castco LRN: MS0190329-43

Chemical Analysis	Result
2) Others Total %	<0.1

End of Report

Form No.: CHM Cu&Cu Alloy-3 T dd 03/02/2016

Appendix A**Summary of Chemical Analysis of Copper and Copper Alloy**

Date of issue: 30-10-2019

Page 1A of 1

Related Castco LRN: MS0190329-43

Name of Customer: Purdon King (International) Limited

Job Title: --

Contract No.: --

Customer's Ref. No.: --

Date of Received by Lab.: 29-03-2019

Testing Period: 10-04-2019

Castco LRN:	MS0190329-43			
Sample Description:	15mm Thermostatic Mixing Valve (Main Valve-Body)			
Specimen No.:	BC0190221-011-MISL			
Location of Work:	-- / Model no.: PEG402UA			
Brand name:	Pegler / Origin : UK			
Manufacturer:	Pegler Yorkshire Group Limited			
Specification: BS EN 12164:2016, Table 6, Grade CW602N	Test Results		Within / Exceed limit	
Aluminium Al 0.05 max. %	0.028		Within limit	
Arsenic As 0.02 to 0.15 %	0.082		Within limit	
Iron Fe 0.1 max. %	0.035		Within limit	
Manganese Mn 0.1 max. %	<0.010		Within limit	
Nickel Ni 0.3 max. %	0.020		Within limit	
Lead Pb 1.7 to 2.8 %	1.75		Within limit	
Tin Sn 0.1 max. %	0.067		Within limit	
Zinc Zn Remainder %	36.6		Within limit	
Copper Cu 61.0 to 63.0 %	61.4		Within limit	
Others Total 0.2 max. %	<0.1		Within limit	

Remarks:

- Test results only relate to the specimen tested.
- Test results of the specimen are in compliance with the chemical requirements of BS EN 12164:2016, Table 6, Grade CW602N.
- This page no. 1A of this Appendix A supersedes page no. 1 of the previous Appendix A of Castco LRN MS0190329-43 issued on 26-04-2019.
- Refer to the previous Appendix A of Castco LRN MS0190329-43, the sample details were revised in this issue due to the supplementary information of the client.

Appendix B

Date of issue : 30-10-2019
Page 1A of 1 page(s)

Castco LRN : MS0190329-43

Sample description : 15mm Thermostatic Mixing Valve (Main Valve-Body)



Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue: 30-10-2019

Page 1A of 3

Castco LRN: MS0190329-44

Details as supplied by customer

Name of Customer : Purdon King (International) Limited
Address : 19/F., Tak Lee Commercial Building, 113-117 Wanchai Road, Hong Kong
Job Title : --
Contract No. : --
Customer's Ref. No. : --

Sample details as supplied by customer

Date Sampled : --
Date of Sample Received : 29-03-2019
Test Period : 10-04-2019
Sample Description : 22mm Thermostatic Mixing Valve (Main Valve-Body)
Specification : BS EN 12164:2016, Table 6, Grade CW602N
Specimen No. : BC0190221-012-MISL
Location of Work : -- / Model no.: PEG402UA
Brand name : Pegler / Origin : UK
Manufacturer : Pegler Yorkshire Group Limited

Test Method(s):-

- 1) In House Method: ST-Multi-4 (Spark-OES)
- 2) By Calculation

Remark:

- I. Test results only relate to the specimen tested.
- II. This page no. 1A of this test report supersedes page no. 1 of the previous test report of Castco LRN MS0190329-44 issued on 26-04-2019.
- III Refer to the previous test report of Castco LRN MS0190329-44, the sample details were revised in this issue due to the supplementary information of the client.

Checked by: _____


Cheng Chi Fai
Senior Manager

Approved Signatory: _____


LEE Stephen Shu Hang
Ph.D.
Technical Director

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue: 26-04-2019

Page 2 of 3

Castco LRN: MS0190329-44

Chemical Analysis		Result
1) Aluminium	Al %	0.042
1) Arsenic	As %	0.076
1) Iron	Fe %	<0.024
1) Manganese	Mn %	<0.010
1) Nickel	Ni %	<0.013
1) Lead	Pb %	1.72
1) Tin	Sn %	0.048
1) Zinc	Zn %	36.9
1) Copper	Cu %	61.2

Form No.: CHM Cu&Cu Alloy-3 T dd 03/02/2016

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue: 26-04-2019

Page 3 of 3

Castco LRN: MS0190329-44

Chemical Analysis	Result
2) Others Total %	<0.1

End of Report

Form No.: CHM Cu&Cu Alloy-3 T dd 03/02/2016

Appendix A**Summary of Chemical Analysis of Copper and Copper Alloy**

Date of issue: 30-10-2019

Page 1A of 1

Related Castco LRN: MS0190329-44

Name of Customer: Purdon King (International) Limited

Job Title: --

Contract No.: --

Customer's Ref. No.: --

Date of Received by Lab.: 29-03-2019

Testing Period: 10-04-2019

Castco LRN:	MS0190329-44			
Sample Description:	22mm Thermostatic Mixing Valve (Main Valve-Body)			
Specimen No.:	BC0190221-012-MISL			
Location of Work:	-- / Model no.: PEG402UA			
Brand name:	Pegler / Origin : UK			
Manufacturer:	Pegler Yorkshire Group Limited			
Specification: BS EN 12164:2016, Table 6, Grade CW602N	Test Results		Within / Exceed limit	
Aluminium Al 0.05 max. %	0.042		Within limit	
Arsenic As 0.02 to 0.15 %	0.076		Within limit	
Iron Fe 0.1 max. %	<0.024		Within limit	
Manganese Mn 0.1 max. %	<0.010		Within limit	
Nickel Ni 0.3 max. %	<0.013		Within limit	
Lead Pb 1.7 to 2.8 %	1.72		Within limit	
Tin Sn 0.1 max. %	0.048		Within limit	
Zinc Zn Remainder %	36.9		Within limit	
Copper Cu 61.0 to 63.0 %	61.2		Within limit	
Others Total 0.2 max. %	<0.1		Within limit	

Remarks:

- Test results only relate to the specimen tested.
- Test results of the specimen are in compliance with the chemical requirements of BS EN 12164:2016, Table 6, Grade CW602N.
- This page no. 1A of this Appendix A supersedes page no. 1 of the previous Appendix A of Castco LRN MS0190329-44 issued on 26-04-2019.
- Refer to the previous Appendix A of Castco LRN MS0190329-44, the sample details were revised in this issue due to the supplementary information of the client.

Appendix B

Date of issue : 30-10-2019
Page 1A of 1 page(s)

Castco LRN : MS0190329-44

Sample description : 22mm Thermostatic Mixing Valve (Main Valve-Body)



Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue: 06-09-2019

Page 1 of 3

Castco LRN: MS0190819-34

Details as supplied by customer

Name of Customer : Purdon King (International) Limited
Address : 19/F., Tak Lee Commercial Building, 113-117 Wanchai Road, Hong Kong
Job Title : --
Contract No. : --
Customer's Ref. No. : --

Sample details as supplied by customer

Date Sampled : --
Date of Sample Received : 19-08-2019
Test Period : 28-08-2019
Sample Description : 15mm Thermostatic Mixing Valve (Ball Valve-Body)
Specification : BS EN 12164:2016, Table 6, Grade CW602N
Specimen No. : BC0190221-011-MISL
Location of Work : -- / Model no.: PEG402UA
Brand name : Pegler / Origin : UK
Manufacturer : Pegler Yorkshire Group Limited

Test Method(s):-

- 1) In House Method: ST-Multi-4 (Spark-OES)
- 2) By Calculation

Remark:

I. Test results only relate to the specimen tested.

Checked by: _____

Lau Hiu Yat
Assistant Technical Manager

Approved Signatory: _____

Cheng Chi Fai
Senior Manager

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue: 06-09-2019

Page 2 of 3

Castco LRN: MS0190819-34

Chemical Analysis		Result
1) Aluminium	Al %	<0.003
1) Arsenic	As %	0.12
1) Iron	Fe %	0.070
1) Manganese	Mn %	<0.010
1) Nickel	Ni %	0.018
1) Lead	Pb %	2.38
1) Tin	Sn %	0.071
1) Zinc	Zn %	35.6
1) Copper	Cu %	61.7

Form No.: CHM Cu&Cu Alloy-3 T dd 03/02/2016

Test Report

Chemical Analysis of Copper and Copper Alloy

Date of issue: 06-09-2019

Page 3 of 3

Castco LRN: MS0190819-34

Chemical Analysis	Result
2) Others total %	<0.1

End of Report

Form No.: CHM Cu&Cu Alloy-3 T dd 03/02/2016

Appendix A

Summary of Chemical Analysis of Copper and Copper Alloy

Date of issue: 06-09-2019

Page 1 of 1

Related Castco LRN: MS0190819-34

Name of Customer: Purdon King (International) Limited

Job Title: --

Contract No.: --

Customer's Ref. No.: --

Date of Received by Lab.: 19-08-2019

Testing Period: 28-08-2019

Castco LRN:	MS0190819-34				
Sample Description :	15mm Thermostatic Mixing Valve (Ball Valve-Body)				
Specimen No.:	BC0190221-011-MISL				
Location of Work :	-- / Model no.: PEG402UA				
Brand name :	Pegler / Origin : UK				
Manufacturer :	Pegler Yorkshire Group Limited				
Specification: BS EN 12164:2016, Table 6, Grade CW602N			Test Results	Within / Exceed limit	
Aluminium	Al	0.05 max.	%	<0.003	Within limit
Arsenic	As	0.02 to 0.15	%	0.12	Within limit
Iron	Fe	0.1 max.	%	0.070	Within limit
Manganese	Mn	0.1 max.	%	<0.010	Within limit
Nickel	Ni	0.3 max.	%	0.018	Within limit
Lead	Pb	1.7 to 2.8	%	2.38	Within limit
Tin	Sn	0.1 max.	%	0.071	Within limit
Zinc	Zn	Remainder	%	35.6	Within limit
Copper	Cu	61.0 to 63.0	%	61.7	Within limit
Others Total		0.2 max.	%	<0.1	Within limit

Remarks:

- Test results only relate to the specimen tested.
- Test results of the specimen are in compliance with the chemical requirements of BS EN 12164:2016, Table 6, Grade CW602N.

Appendix B

Date of issue : 06-09-2019

Page 1 of 1 page(s)

Castco LRN : MS0190819-34

Sample description : 15mm Thermostatic Mixing Valve (Ball Valve-Body)

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue: 06-09-2019

Page 1 of 3

Castco LRN: MS0190819-36

Details as supplied by customer

Name of Customer : Purdon King (International) Limited
Address : 19/F., Tak Lee Commercial Building, 113-117 Wanchai Road, Hong Kong
Job Title : --
Contract No. : --
Customer's Ref. No. : --

Sample details as supplied by customer

Date Sampled : --
Date of Sample Received : 19-08-2019
Test Period : 28-08-2019
Sample Description : 22mm Thermostatic Mixing Valve (Ball Valve-Body)
Specification : BS EN 12164:2016, Table 6, Grade CW602N
Specimen No. : BC0190221-012-MISL
Location of Work : -- / Model no.: PEG402UA
Brand name : Pegler / Origin : UK
Manufacturer : Pegler Yorkshire Group Limited

Test Method(s):-

- 1) In House Method: ST-Multi-4 (Spark-OES)
- 2) By Calculation

Remark:

I. Test results only relate to the specimen tested.

Checked by: _____


Lau Hiu Yat
Assistant Technical Manager

Approved Signatory: _____


Cheng Chi Fai
Senior Manager

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue: 06-09-2019

Page 2 of 3

Castco LRN: MS0190819-36

Chemical Analysis	Result
1) Aluminium Al %	<0.003
1) Arsenic As %	0.056
1) Iron Fe %	0.072
1) Manganese Mn %	<0.010
1) Nickel Ni %	0.027
1) Lead Pb %	2.59
1) Tin Sn %	0.051
1) Zinc Zn %	35.3
1) Copper Cu %	61.8

Form No.: CHM Cu&Cu Alloy-3 T dd 03/02/2016

Test Report

Chemical Analysis of Copper and Copper Alloy

Date of issue: 06-09-2019

Page 3 of 3

Castco LRN: MS0190819-36

Chemical Analysis	Result
2) Others total %	<0.1

End of Report

Form No.: CHM Cu&Cu Alloy-3 T dd 03/02/2016

Appendix A**Summary of Chemical Analysis of Copper and Copper Alloy**

Date of issue: 06-09-2019

Page 1 of 1

Related Castco LRN: MS0190819-36

Name of Customer: Purdon King (International) Limited

Job Title: --

Contract No.: --

Customer's Ref. No.: --

Date of Received by Lab.: 19-08-2019

Testing Period: 28-08-2019

Castco LRN:	MS0190819-36			
Sample Description :	22mm Thermostatic Mixing Valve (Ball Valve-Body)			
Specimen No.:	BC0190221-012-MISL			
Location of Work :	-- / Model no.: PEG402UA			
Brand name :	Pegler / Origin : UK			
Manufacturer :	Pegler Yorkshire Group Limited			
Specification: BS EN 12164:2016, Table 6, Grade CW602N	Test Results		Within / Exceed limit	
Aluminium Al 0.05 max. %	<0.003		Within limit	
Arsenic As 0.02 to 0.15 %	0.056		Within limit	
Iron Fe 0.1 max. %	0.072		Within limit	
Manganese Mn 0.1 max. %	<0.010		Within limit	
Nickel Ni 0.3 max. %	0.027		Within limit	
Lead Pb 1.7 to 2.8 %	2.59		Within limit	
Tin Sn 0.1 max. %	0.051		Within limit	
Zinc Zn Remainder %	35.3		Within limit	
Copper Cu 61.0 to 63.0 %	61.8		Within limit	
Others Total 0.2 max. %	<0.1		Within limit	

Remarks:

- Test results only relate to the specimen tested.
- Test results of the specimen are in compliance with the chemical requirements of BS EN 12164:2016, Table 6, Grade CW602N.

Appendix B

Date of issue : 06-09-2019

Page 1 of 1 page(s)

Castco LRN : MS0190819-36

Sample description : 22mm Thermostatic Mixing Valve (Ball Valve-Body)



香港粉嶺安居街33號
香港粉嶺安全街29A號
E-mail: info@castco.com.hk

33, On Kui Street, Fanling, Hong Kong. Tel : 2597 8333
29A, On Chuen Street, Fanling, Hong Kong. Fax: 2597 8399
Website: www.castco.com.hk

Test Report

Chemical Analysis of Copper and Copper Alloy

Date of issue: 21-10-2019

Page 1 of 3

Castco LRN: MS0191011-20

Details as supplied by customer

Name of Customer : Purdon King (International) Limited
Address : 19/F., Tak Lee Commercial Building, 113-117 Wanchai Road, Hong Kong
Job Title : --
Contract No. : --
Customer's Ref. No. : --

Sample details as supplied by customer

Date Sampled : --
Date of Sample Received : 11-10-2019
Test Period : 16-10-2019
Sample Description : 15mm Thermostatic Mixing Valve (Ball Valve-Ball)
Specification : BS EN 12164:2016, Table 6, Grade CW602N
Specimen No. : BC0190221-011-MISL
Location of Work : -- / Model no.: PEG402UA
Brand name : Pegler / Origin : UK
Manufacturer : Pegler Yorkshire Group Limited


Test Method(s):-

- 1) In House Method: ST-Multi-4 (Spark-OES)
- 2) By Calculation

Remark:

I. Test results only relate to the specimen tested.

Checked by : 
Cheng Chi Fai
Senior Manager

Approved Signatory : 
LEE Stephen Shu Hang
Ph.D.
Technical Director

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue: 21-10-2019

Page 2 of 3

Castco LRN: MS0191011-20

Chemical Analysis		Result
1) Aluminium	Al %	0.026
1) Arsenic	As %	0.11
1) Iron	Fe %	0.061
1) Manganese	Mn %	<0.010
1) Nickel	Ni %	0.036
1) Lead	Pb %	1.91
1) Tin	Sn %	0.077
1) Zinc	Zn %	36.0
1) Copper	Cu %	61.8

Form No.: CHM Cu&Cu Alloy-3 T dd 03/02/2016

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue: 21-10-2019

Page 3 of 3

Castco LRN: MS0191011-20

Chemical Analysis	Result
2) Others total %	<0.1

End of Report

Form No.: CHM Cu&Cu Alloy-3 T dd 03/02/2016

Appendix A**Summary of Chemical Analysis of Copper and Copper Alloy**

Date of issue: 21-10-2019

Page 1 of 1

Related Castco LRN: MS0191011-20

Name of Customer: Purdon King (International) Limited

Job Title: --

Contract No.: --

Customer's Ref. No.: --

Date of Received by Lab.: 11-10-2019

Testing Period: 16-10-2019

Castco LRN:	MS0191011-20			
Sample Description :	15mm Thermostatic Mixing Valve (Ball Valve-Ball)			
Specimen No.:	BC0190221-011-MISL			
Location of Work :	-- / Model no.: PEG402UA			
Brand name :	Pegler / Origin : UK			
Manufacturer :	Pegler Yorkshire Group Limited			
Specification: BS EN 12164:2016, Table 6, Grade CW602N	Test Results		Within / Exceed limit	
Aluminium Al 0.05 max. %	0.026		Within limit	
Arsenic As 0.02 to 0.15 %	0.11		Within limit	
Iron Fe 0.1 max. %	0.061		Within limit	
Manganese Mn 0.1 max. %	<0.010		Within limit	
Nickel Ni 0.3 max. %	0.036		Within limit	
Lead Pb 1.7 to 2.8 %	1.91		Within limit	
Tin Sn 0.1 max. %	0.077		Within limit	
Zinc Zn Remainder %	36.0		Within limit	
Copper Cu 61.0 to 63.0 %	61.8		Within limit	
Others Total 0.2 max. %	<0.1		Within limit	

Remarks:

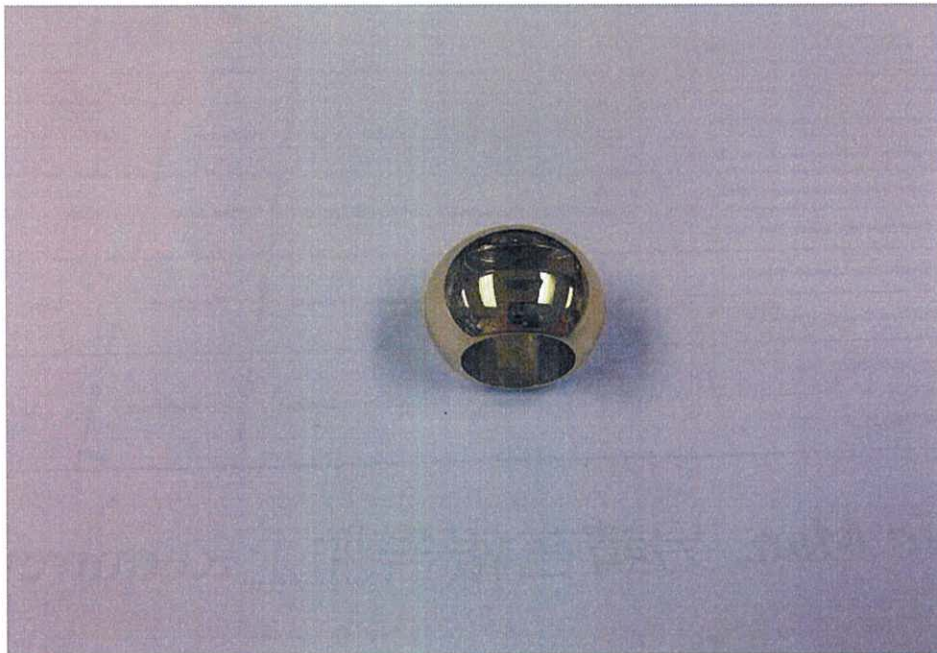
- Test results only relate to the specimen tested.
- Test results of the specimen are in compliance with the chemical requirements of BS EN 12164:2016, Table 6, Grade CW602N.

Appendix B

Date of issue : 21-10-2019

Page 1 of 1 page(s)

Castco LRN : MS0191011-20

Sample description : 15mm Thermostatic Mixing Valve (Ball Valve-Ball)

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue: 21-10-2019

Page 1 of 3

Castco LRN: MS0191011-21

Details as supplied by customer

Name of Customer : Purdon King (International) Limited
Address : 19/F., Tak Lee Commercial Building, 113-117 Wanchai Road, Hong Kong
Job Title : --
Contract No. : --
Customer's Ref. No. : --

Sample details as supplied by customer

Date Sampled : --
Date of Sample Received : 11-10-2019
Test Period : 16-10-2019
Sample Description : 22mm Thermostatic Mixing Valve (Ball Valve-Ball)
Specification : BS EN 12164:2016, Table 6, Grade CW602N
Specimen No. : BC0190221-012-MISL
Location of Work : -- / Model no.: PEG402UA
Brand name : Pegler / Origin : UK
Manufacturer : Pegler Yorkshire Group Limited

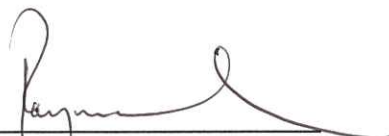
Test Method(s):-

- 1) In House Method: ST-Multi-4 (Spark-OES)
- 2) By Calculation

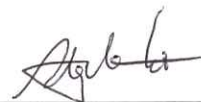
Remark:

- I. Test results only relate to the specimen tested.

Checked by :

Cheng Chi Fai
Senior Manager

Approved Signatory :

LEE Stephen Shu Hang
Ph.D.
Technical Director



Test Report

Chemical Analysis of Copper and Copper Alloy

Date of issue: 21-10-2019

Page 2 of 3

Castco LRN: MS0191011-21

Chemical Analysis		Result
1) Aluminium	Al %	0.022
1) Arsenic	As %	0.12
1) Iron	Fe %	0.057
1) Manganese	Mn %	<0.010
1) Nickel	Ni %	0.035
1) Lead	Pb %	1.88
1) Tin	Sn %	0.075
1) Zinc	Zn %	35.8
1) Copper	Cu %	62.0

Form No.: CHM Cu&Cu Alloy-3 T dd 03/02/2016

Test Report**Chemical Analysis of Copper and Copper Alloy**

Date of issue: 21-10-2019

Page 3 of 3

Castco LRN: MS0191011-21

Chemical Analysis	Result
2) Others total %	<0.1

End of Report

Form No.: CHM Cu&Cu Alloy-3 T dd 03/02/2016

Appendix A

Summary of Chemical Analysis of Copper and Copper Alloy

Date of issue: 21-10-2019

Page 1 of 1

Related Castco LRN: MS0191011-21

Name of Customer: Purdon King (International) Limited

Job Title: --

Contract No.: --

Customer's Ref. No.: --

Date of Received by Lab.: 11-10-2019

Testing Period: 16-10-2019

Castco LRN:	MS0191011-21			
Sample Description :	22mm Thermostatic Mixing Valve (Ball Valve-Ball)			
Specimen No.:	BC0190221-012-MISL			
Location of Work :	-- / Model no.: PEG402UA			
Brand name :	Pegler / Origin : UK			
Manufacturer :	Pegler Yorkshire Group Limited			
Specification: BS EN 12164:2016, Table 6, Grade CW602N	Test Results		Within / Exceed limit	
Aluminium Al 0.05 max. %	0.022		Within limit	
Arsenic As 0.02 to 0.15 %	0.12		Within limit	
Iron Fe 0.1 max. %	0.057		Within limit	
Manganese Mn 0.1 max. %	<0.010		Within limit	
Nickel Ni 0.3 max. %	0.035		Within limit	
Lead Pb 1.7 to 2.8 %	1.88		Within limit	
Tin Sn 0.1 max. %	0.075		Within limit	
Zinc Zn Remainder %	35.8		Within limit	
Copper Cu 61.0 to 63.0 %	62.0		Within limit	
Others Total 0.2 max. %	<0.1		Within limit	

Remarks:

- Test results only relate to the specimen tested.
- Test results of the specimen are in compliance with the chemical requirements of BS EN 12164:2016, Table 6, Grade CW602N.

Appendix B

Date of issue : 21-10-2019

Page 1 of 1 page(s)

Castco LRN : MS0191011-21

Sample description : 22mm Thermostatic Mixing Valve (Ball Valve-Ball)

Test Report
Chemical Analysis of Steel

Date of issue: 28-11-2019

Page 1 of 2

Castco LRN: MS0191118-3

Details as supplied by customer

Name of Customer : Purdon King (International) Limited
Address : 19/F., Tak Lee Commercial Building, 113-117 Wanchi Road, Hong Kong
Job Title : --
Contract No. : --
Customer's Ref. No. : --

Sample details as supplied by customer

Date Sampled : --
Date of Sample Received : 18-11-2019
Test Period : 25-11-2019 to 26-11-2019
Sample Description : 15mm Thermostatic Mixing Valve (Spring)
Specification : BS EN 10088-1:2014, Table 2, Grade 1.4301 (304)
Specimen No. : BC0190221-011-MISL
Location of Work : -- / Model No.: PEG402UA
Brand Name : Pegler / Origin : UK
Manufacturer : Pegler Yorkshire Group Limited

Test Method(s):-

- 1) BS EN ISO 15350 : 2010
- 2) ST-Multi-1(ICP-OES)
- 3) BS EN ISO 15351: 2010

Remark:

- I. Test results only relate to the specimen tested.

Checked by :


Lau Hiu Yat
Assistant Technical Manager

Approved Signatory :


Cheng Chi Fai
Senior Manager



Test Report
Chemical Analysis of Steel

Date of issue: 28-11-2019

Page 2 of 2

Castco LRN: MS0191118-3

Chemical Analysis		Result
1) Total Carbon Content	C %	0.042
1) Total Sulfur Content	S %	0.0038
2) Chromium	Cr %	18.36
2) Manganese	Mn %	1.03
2) Nickel	Ni %	8.02
2) Phosphorus	P %	0.036
2) Silicon	Si %	0.346
3) Nitrogen	N %	0.097

End of Report

Form No.: CHM Steel-1 T dd 16/12/2015

Appendix A

Summary of Chemical Analysis of Steel

Date of issue: 28-11-2019

Page 1 of 1

Castco LRN: MS0191118-3

Name of Customer: Purdon King (International) Limited

Job Title: --

Contract No.: --

Customer's Ref. No.: --

Date of Received by Lab.: 18-11-2019

Testing Period: 25-11-2019 to 26-11-2019

Castco LRN:	MS0191118-3			
Specimen No.:	BC0190221-011-MISL			
Sample Description:	15mm Thermostatic Mixing Valve (Spring)			
Location of Work:	-- / Model No.: PEG402UA			
Manufacturer:	Pegler Yorkshire Group Limited			
Brand Name:	Pegler / Origin : UK			
Specification: BS EN 10088-1:2014, Table 2, Grade 1.4301 (304)	Test Results		Within / Exceed limit	
Carbon C	0.07 max.	%	0.042	Within limit
Sulfur S	0.015 max.	%	0.0038	Within limit
Chromium Cr	17.5 to 19.5	%	18.36	Within limit
Manganese Mn	2.00 max.	%	1.03	Within limit
Nickel Ni	8.0 to 10.5	%	8.02	Within limit
Phosphorus P	0.045 max.	%	0.036	Within limit
Silicon Si	1.00 max.	%	0.346	Within limit
Nitrogen N	0.10 max.	%	0.097	Within limit

Remarks:

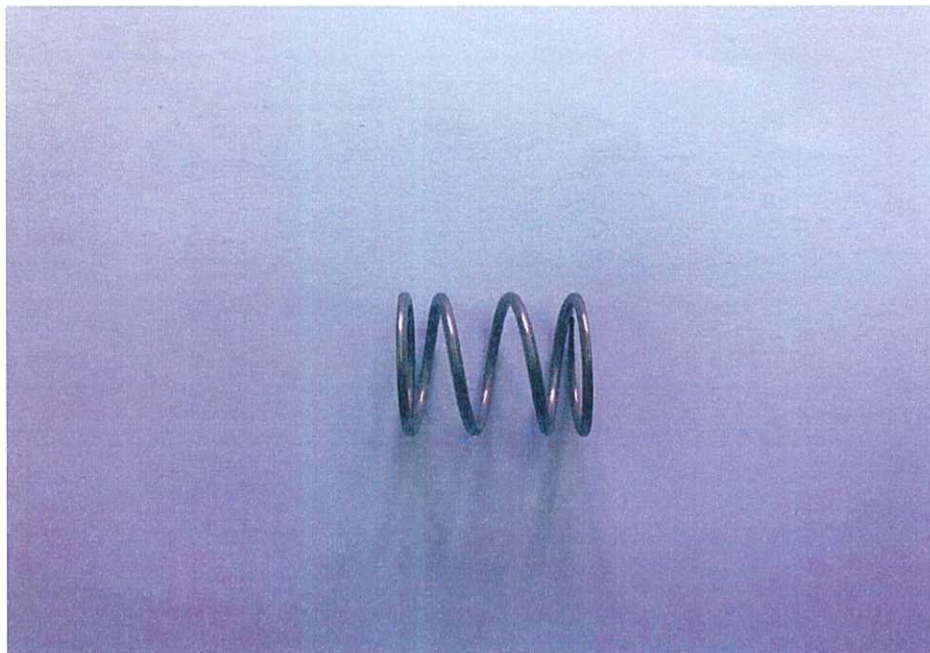
- I. Test results only relate to the specimen tested.
- II. Test results of the specimen are in compliance with the chemical requirements of BS EN 10088-1:2014, Table 2, Grade 1.4301 (304).

Appendix B

Date of issue : 28-11-2019
Page 1 of 1 page(s)

Castco LRN : MS0191118-3

Sample description : 15mm Thermostatic Mixing Valve (Spring)



Test Report
Chemical Analysis of Steel

Date of issue: 28-11-2019

Page 1 of 2

Castco LRN: MS0191118-4

Details as supplied by customer

Name of Customer : Purdon King (International) Limited

Address : 19/F., Tak Lee Commercial Building, 113-117 Wanchi Road, Hong Kong

Job Title : --

Contract No. : --

Customer's Ref. No. : --

Sample details as supplied by customer

Date Sampled : --

Date of Sample Received : 18-11-2019

Test Period : 25-11-2019 to 26-11-2019

Sample Description : 22mm Thermostatic Mixing Valve (Spring)

Specification : BS EN 10088-1:2014, Table 2, Grade 1.4301 (304)

Specimen No. : BC0190221-012-MISL

Location of Work : -- / Model No.: PEG402UA

Brand Name : Pegler / Origin : UK

Manufacturer : Pegler Yorkshire Group Limited

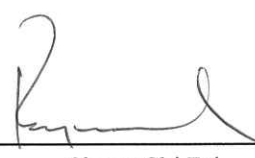
Test Method(s):-

- 1) BS EN ISO 15350 : 2010
- 2) ST-Multi-1(ICP-OES)
- 3) BS EN ISO 15351: 2010

Remark:

- I. Test results only relate to the specimen tested.

Checked by : 
Lau Hiu Yat
Assistant Technical Manager

Approved Signatory : 
Cheng Chi Fai
Senior Manager

Test Report
Chemical Analysis of Steel

Date of issue: 28-11-2019

Page 2 of 2

Castco LRN: MS0191118-4

Chemical Analysis		Result
1) Total Carbon Content	C %	0.042
1) Total Sulfur Content	S %	0.0038
2) Chromium	Cr %	18.48
2) Manganese	Mn %	1.02
2) Nickel	Ni %	8.05
2) Phosphorus	P %	0.037
2) Silicon	Si %	0.349
3) Nitrogen	N %	0.098

End of Report

Form No.: CHM Steel-1 T dd 16/12/2015

Appendix A**Summary of Chemical Analysis of Steel**

Date of issue: 28-11-2019

Page 1 of 1

Castco LRN: MS0191118-4

Name of Customer: Purdon King (International) Limited

Job Title: --

Contract No.: --

Customer's Ref. No.: --

Date of Received by Lab.: 18-11-2019

Testing Period: 25-11-2019 to 26-11-2019

Castco LRN:	MS0191118-4			
Specimen No.:	BC0190221-012-MISL			
Sample Description:	22mm Thermostatic Mixing Valve (Spring)			
Location of Work:	-- / Model No.: PEG402UA			
Manufacturer:	Pegler Yorkshire Group Limited			
Brand Name:	Pegler / Origin : UK			
Specification: BS EN 10088-1:2014, Table 2, Grade 1.4301 (304)	Test Results		Within / Exceed limit	
Carbon C 0.07 max. %	0.042		Within limit	
Sulfur S 0.015 max. %	0.0038		Within limit	
Chromium Cr 17.5 to 19.5 %	18.48		Within limit	
Manganese Mn 2.00 max. %	1.02		Within limit	
Nickel Ni 8.0 to 10.5 %	8.05		Within limit	
Phosphorus P 0.045 max. %	0.037		Within limit	
Silicon Si 1.00 max. %	0.349		Within limit	
Nitrogen N 0.10 max. %	0.098		Within limit	

Remarks:

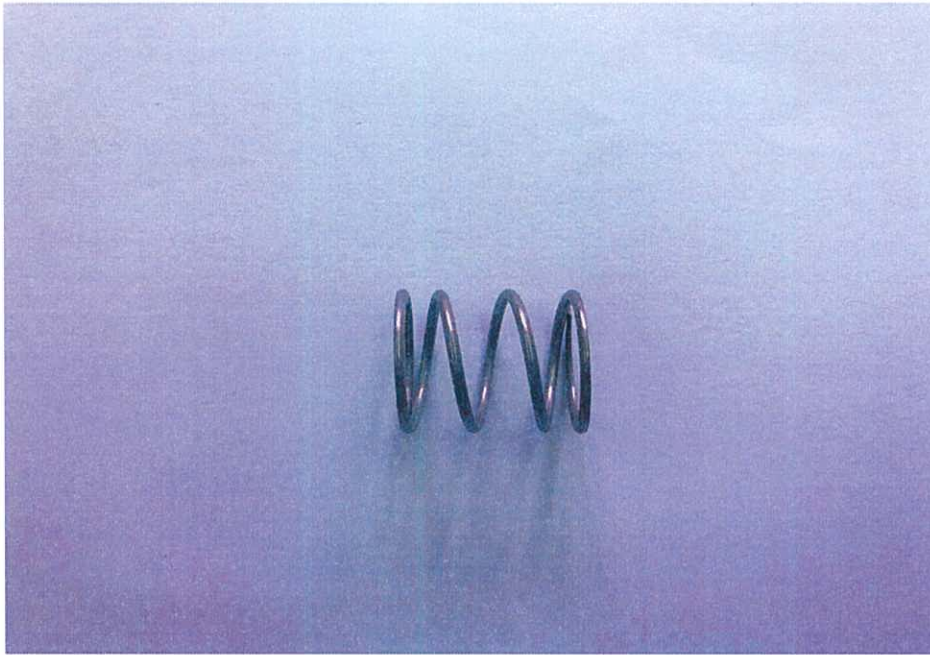
- I. Test results only relate to the specimen tested.
- II. Test results of the specimen are in compliance with the chemical requirements of BS EN 10088-1:2014, Table 2, Grade 1.4301 (304).

Appendix B

Date of issue : 28-11-2019
Page 1 of 1 page(s)

Castco LRN : MS0191118-4

Sample description : 22mm Thermostatic Mixing Valve (Spring)



Test Report**Testing of products for use in contact with drinking water**

Date of issue: 26-03-2019

Page 1 of 2

Castco LRN: EN0190304-11

Details as supplied by customer

Name of Customer : Purdon King (International) Limited

Address : 19/F, Tak Lee Commercial Building, 113-117 Wan Chai Road, Hong Kong

Job Title : --

Sample details as supplied by customer

Date of Sample Received : 04-03-2019

Test Period : 06-03-2019 to 07-03-2019

Sample Description : 15mm Thermostatic Mixing Valve

Model No. : PEG402UA

Manufacturer : Pegler Yorkshire Group Limited

Brand Name : Pegler

Origin : UK

Test Method(s):

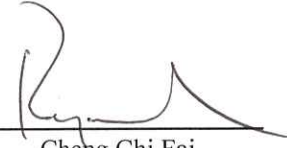
- 1) AS/NZS 4020:2005 Appendix H - Extraction of Metals

Remarks:

- I. Test results only relate to the specimen tested and showed on Appendix A.
- II. In-the-product exposure.
- III. The sample/s mentioned in this report is/are submitted/supplied/manufactured by the Client. Castco therefore assumes no responsibility for the accuracy of information on the brand name, origin of manufacture, consignment or any information supplied.
- IV. The following scaling factors are adopted from voluntary GA* Scheme of Water Supplies Department.

In-line Metallic Plumbing Product	Scaling Factor
Pipe	Nil
Pipe fitting	0.05
Valves (Gate, Globe & Ball)	0.01
Butterfly valve	0.05
Non-return/Check valve, Pressure reducing valve	0.01 for DN=>100 0.05 for DN<100
Strainer	0.1
Expansion/Settlement/Flexible Joint	0.01

Checked by : 
 Au Kwok Kin
 Assistant Technical Manager

Approved Signatory : 
 Cheng Chi Fai
 Senior Manager

Test Report**Testing of products for use in contact with drinking water**

Date of issue: 26-03-2019

Page 2 of 2

Castco LRN: EN0190304-11

Castco Sample ID : EN0190304-11(1) & EN0190304-11(2)

Test Period :06-03-2019 to 07-03-2019

Sample Identification No. : --

Specimen No. : BC0190221-011-MISL

Extraction Temperature : 20°C

Item	Metal Elements	Test Water Blank (mg/L)	"15mm Thermostatic Mixing Valve"		Reporting Limit (mg/L)	AS/NZS 4020 Requirement Limit (mg/L)
			1 st Extraction (mg/L)			
			Test results were corrected by scaling factor: 0.01			
			sample 1	sample 2		
1	Chromium	<0.0010	<0.0010	0.011	0.0010	0.05
2	Nickel	<0.0010	0.0032	0.0048	0.0010	0.02

End of Report

Test Report**Testing of products for use in contact with drinking water**

Date of issue: 26-03-2019

Page 1 of 2

Castco LRN: EN0190304-12

Details as supplied by customer

Name of Customer : Purdon King (International) Limited

Address : 19/F, Tak Lee Commercial Building, 113-117 Wan Chai Road, Hong Kong

Job Title : --

Sample details as supplied by customer

Date of Sample Received : 04-03-2019

Test Period : 06-03-2019 to 07-03-2019

Sample Description : 22mm Thermostatic Mixing Valve

Model No. : PEG402UA

Manufacturer : Pegler Yorkshire Group Limited

Brand Name : Pegler

Origin : UK

Test Method(s):


- 1) AS/NZS 4020:2005 Appendix H - Extraction of Metals

Remarks:

- I. Test results only relate to the specimen tested and showed on Appendix A.
- II. In-the-product exposure.
- III. The sample/s mentioned in this report is/are submitted/supplied/manufactured by the Client. Castco therefore assumes no responsibility for the accuracy of information on the brand name, origin of manufacture, consignment or any information supplied.
- IV. The following scaling factors are adopted from voluntary GA* Scheme of Water Supplies Department.

In-line Metallic Plumbing Product	Scaling Factor
Pipe	Nil
Pipe fitting	0.05
Valves (Gate, Globe & Ball)	0.01
Butterfly valve	0.05
Non-return/Check valve, Pressure reducing valve	0.01 for DN=>100 0.05 for DN<100
Strainer	0.1
Expansion/Settlement/Flexible Joint	0.01

Checked by : 
Au Kwok Kin
Assistant Technical Manager

Approved Signatory : 
Cheng Chi Fai
Senior Manager

Test Report**Testing of products for use in contact with drinking water**

Date of issue: 26-03-2019

Page 2 of 2

Castco LRN: EN0190304-12

Castco Sample ID : EN0190304-12(1) & EN0190304-12(2)

Test Period :06-03-2019 to 07-03-2019

Sample Identification No. : --

Specimen No. : BC0190221-012-MISL

Extraction Temperature : 20°C

Item	Metal Elements	Test Water Blank (mg/L)	"22mm Thermostatic Mixing Valve"		Reporting Limit (mg/L)	AS/NZS 4020 Requirement Limit (mg/L)
			1 st Extraction (mg/L)			
			Test results were corrected by scaling factor: 0.01			
			sample 1	sample 2		
1	Chromium	<0.0010	<0.0010	<0.0010	0.0010	0.05
2	Nickel	<0.0010	<0.0010	0.0021	0.0010	0.02

End of Report