



TEST REPORT

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Report Issue Date: 2020.04.17
Page 1 of 11

Test Report No. : 6075081.50QS
Project no. : 6075081

Client : Bestway (Hongkong) International Ltd
Suite 713, 7/Floor, East Wing, Tsim Sha Tsui Centre, 66 Mody Road, Kowloon,
Hongkong

Date sample received : 2020.04.01

Product : Filter Pump

Product description : Please refer to next page(s).

Model : 58381,58383,58386,58389

Test Requested : ROHS

Test Method : Test of RoHS conformity (2011/65/EU) and its subsequent amendments directive (EU) 2015/863.

Result : Please refer to next page(s).

Conclusion : Please refer to next page(s).

Testing Period : 2020.04.01—2020.04.15

Signed for and on behalf of
DEKRA Testing and Certification (Shanghai) Ltd



Lu Saijian (陆赛健)
Project Manager

Zhou Lindong(周林栋)
Test Engineer

Picture of the product





TEST RESULTS

sample-no.	sample designation	Pb (%)	Cd (%)	Hg (%)	Cr VI (%)	PBB (%)	PBDE (%)	DEHP* (%)	BBP* (%)	DBP* (%)	DIBP* (%)
001	white plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
002	grey plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
003	grey plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
004	grey plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
005	grey plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
006	grey plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
007	grey plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
008	silvery metal	< 0.1	< 0.01	< 0.1	< 0.1 ¹⁾	N/A	N/A	N/A	N/A	N/A	N/A
009	grey plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
010	black rubber	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
011	grey plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
012	black rubber	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
013	white plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
014	blue rubber	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
015	transparent plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
016	white plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
017	silvery metal	< 0.1	< 0.01	< 0.1	< 0.1	N/A	N/A	N/A	N/A	N/A	N/A
018	grey plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
019	black rubber	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
020	black metal	< 0.1	< 0.01	< 0.1	< 0.1	N/A	N/A	N/A	N/A	N/A	N/A
021	grey plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
022	grey plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
023	black glue	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
024	white plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
025	silvery magnet	< 0.1	< 0.01	< 0.1	< 0.1 ¹⁾	N/A	N/A	N/A	N/A	N/A	N/A
026	white ceramic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	N/A	N/A	N/A	N/A
027	black rubber	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
028	silvery metal	< 0.1	< 0.01	< 0.1	< 0.1 ¹⁾	N/A	N/A	N/A	N/A	N/A	N/A
029	blue plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
030	white plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1 ²⁾	< 0.1 ²⁾	< 0.1	< 0.1	< 0.1	< 0.1
031	coppery metal	< 0.1	< 0.01	< 0.1	< 0.1	N/A	N/A	N/A	N/A	N/A	N/A
032	black rubber	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
033	white plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1 ²⁾	< 0.1 ²⁾	< 0.1	< 0.1	< 0.1	< 0.1
034	silvery metal	1.4 ^{3)a)}	< 0.01	< 0.1	< 0.1	N/A	N/A	N/A	N/A	N/A	N/A

035	silvery metal	< 0.1	< 0.01	< 0.1	< 0.1	N/A	N/A	N/A	N/A	N/A	N/A
036	black rubber	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
037	green and yellow wire	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
038	brown wire	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
039	blue wire	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
040	coppery metal	< 0.1	< 0.01	< 0.1	< 0.1	N/A	N/A	N/A	N/A	N/A	N/A
041	black rubber(thick)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
042	brown wire(thick)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
043	blue wire(thick)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
044	black rubber(thin)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
045	brown wire(thin)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
046	blue wire(thin)	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
047	black plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
048	black plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
049	black glue	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
050	yellow plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1 ²⁾	< 0.1 ²⁾	< 0.1	< 0.1	< 0.1	< 0.1
051	red plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
052	black rubber	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
053	red wire	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
054	white plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
055	black rubber	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
056	white plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1 ²⁾	< 0.1 ²⁾	< 0.1	< 0.1	< 0.1	< 0.1
057	white plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1 ²⁾	< 0.1 ²⁾	< 0.1	< 0.1	< 0.1	< 0.1
058	silvery metal	1.5 ^{3)a)}	< 0.01	< 0.1	< 0.1	N/A	N/A	N/A	N/A	N/A	N/A
059	coppery metal	< 0.1	< 0.01	< 0.1	< 0.1	N/A	N/A	N/A	N/A	N/A	N/A
060	golden metal	< 0.1	< 0.01	< 0.1	< 0.1	N/A	N/A	N/A	N/A	N/A	N/A
061	silvery metal(soldering tin)	< 0.1	< 0.01	< 0.1	< 0.1	N/A	N/A	N/A	N/A	N/A	N/A
062	silvery metal	< 0.1	< 0.01	< 0.1	< 0.1	N/A	N/A	N/A	N/A	N/A	N/A
063	white ceramic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	N/A	N/A	N/A	N/A
064	transparent plastic	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
065	black rubber	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
066	silvery metal	< 0.1	< 0.01	< 0.1	< 0.1	N/A	N/A	N/A	N/A	N/A	N/A
067	black rubber	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
068	green and yellow wire	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
069	brown wire	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
070	blue wire	< 0.1	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
071	coppery metal	< 0.1	< 0.01	< 0.1	< 0.1	N/A	N/A	N/A	N/A	N/A	N/A

- 1) The analysis by X-ray fluorescence spectrometry showed a detection for Cr. The verification and quantification of Cr (VI) was performed by photometric analysis.
 - 2) The analysis by X-ray fluorescence spectrometry showed a detection for Br. The verification and quantification of PBB/PBDE was performed by GC-MS.
 - 3) The analysis by X-ray fluorescence spectrometry showed a detection for Pb. The verification and quantification of Pb was performed by ICP-OES.
- a) The annex to directive 2011/65/EU (exemptions of RoHS-directive) contains following point:
“6(c) Copper alloy containing up to 4 % lead by weight.”
- N/A: Not applicable
- *=With reference to IEC62321-8:2017, Analysis was performed by GC-MS.

Description of the analysis procedure (brief version):

Test of RoHS conformity

The measurements are performed according to IEC 62321-3-1 : 2013, "Electrotechnical products - Determination of levels of six regulated substances".

The product is divided in single material samples. The materials are analysed on different parameters of the RoHS-directive to assure that the complete product is RoHS-conform or not. At first a XRF (X-ray fluorescence spectrometry) screening is performed. For every sample following statements can be made.

Table: Screening limits in mg/kg for regulated elements in various matrices

Element	Polymers	Metals	Composite Material
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Br	$BL \leq (300-3\sigma) < X$		$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

Below limit (**BL**): the tested material complies to the RoHS directive.

Inconclusive (**X**): If the level of the measurement is around the maximum allowed, or if the level for Chrome or Bromine is too high, other more accurate methods are needed to determine the exact level or the composition of Chrome and Bromine.

Over limit (**OL**): If the level of lead, mercury or cadmium is well above the maximum allowed levels (the XRF uncertainty is taken into account), the tested material does not comply with the RoHS directive.

In case of **inconclusive** XRF results, following analysis procedures are applied:

In order to examine the material samples for the heavy metals cadmium, lead and mercury they are digested in acid and the solutions are used to carry out the analysis for the heavy metals by ICP-OES or atomic-absorption spectroscopy.

Hexavalent chromium is checked by extracting the sample with water at 100 °C (determination of Cr VI in colorless and colored chromate coating on metals) respectively with alkaline extraction at 90-95 °C (determination of Cr VI in polymers and electronic components) followed by photometric analysis.

In the case of metallic components with a surface coating containing hexavalent Chromium (passivation) the concentration is expressed in mg of Chromium VI per component. In order to obtain further information about the concentration on the surface coating it is necessary to know the weight per unit area of the coating and the surface area of the component. Information about surface coatings is to be provided by the client.

The examination for bromine-based flame retardant products is carried out by gas chromatography-mass spectrometry after extraction by solvents; this involves the individual analysis and quantification of the substances specified in the RoHS. The current valid regulations relating to exceptions in respect of the analysed substances are to be taken into account by the client.

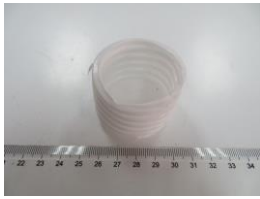
The following Polybrominated Biphenyls (PBBs) and Polybrominated Diphenyl Ethers (PBDEs) are analyzed:

2-Bromobiphenyl PBB2, Dibromobiphenyl PBB15, Tribromobiphenyl PBB30, Tetrabromobiphenyl PBB52, Pentabromobiphenyl PBB103, Hexabromobiphenyl PBB153, Heptabromobiphenyl PBB250, Octabromobiphenyl PBB250, Nonabromobiphenyl PBB250, Decabromobiphenyl PBB209, Bromodiphenylether BDE2, Dibromodiphenylether BDE15, Tribromodiphenylether BDE30, Tetrabromodiphenylether BDE62, Pentabromodiphenylether BDE99, Hexabromodiphenylether BDE153, Heptabromodiphenylether BDE183, Octabromodiphenylether BDE203, Nonabromodiphenylether BDE206, Decabromodiphenylether BDE209.

Limits according to RoHS (2011/65/EU) and its subsequent amendments directive (EU) 2015/863 / Test methods (additional chemical analysis):

Parameter	Limits according to RoHS	Test method
Cadmium	0,01 % (100 mg/kg or 0,1 g/kg)	IEC62321-5:2013
Lead	0,1 % (1000 mg/kg or 1 g/kg)	IEC62321-5:2013
Hexavalent Chromium	0,1 % (1000 mg/kg or 1 g/kg)	Metal: IEC62321-7-1:2015 Non-metal: IEC62321-7-2:2017
Mercury	0,1 % (1000 mg/kg or 1 g/kg)	IEC62321-4:2017
PBB and PBDE	0,1 % (1000 mg/kg or 1 g/kg)	IEC62321-6:2015
DEHP	0,1 % (1000 mg/kg or 1 g/kg)	IEC62321-8:2017
BBP	0,1 % (1000 mg/kg or 1 g/kg)	IEC62321-8:2017
DBP	0,1 % (1000 mg/kg or 1 g/kg)	IEC62321-8:2017
DIBP	0,1 % (1000 mg/kg or 1 g/kg)	IEC62321-8:2017

Sample Photos



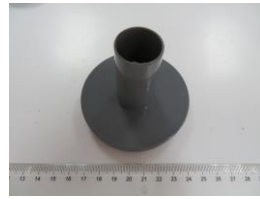
Test item001



Test item002



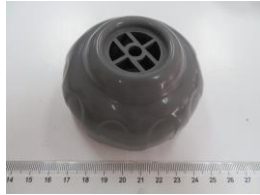
Test item003



Test item004



Test item005



Test item006



Test item007



Test item008



Test item009



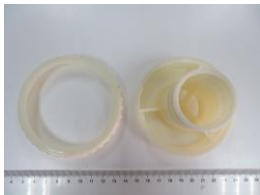
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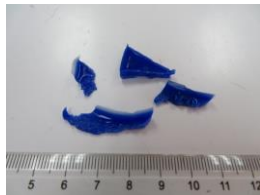
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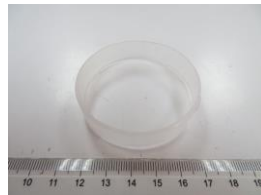
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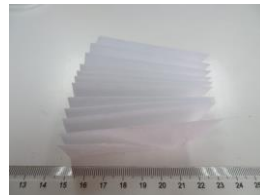
Test item013



Test item014



Test item015



Test item016



Test item017



Test item018



Test item019



Test item020



Test item021



Test item022



Test item023



Test item024



Test item025



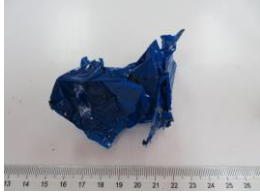
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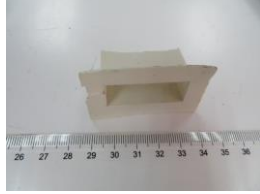
Test item027



Test item028



Test item029



Test item030



Test item031



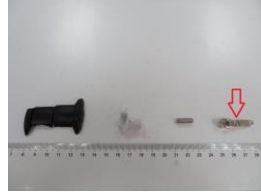
Test item032



Test item033



Test item034



Test item035



Test item036



Test item037



Test item038



Test item039



Test item040



Test item041



Test item042



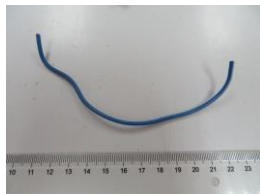
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Test item044



Test item045



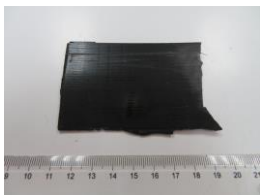
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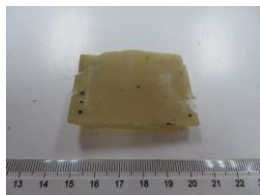
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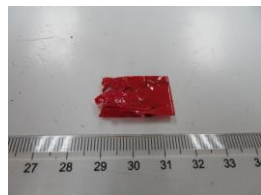
Test item048



Test item049



Test item050



Test item051



Test item052



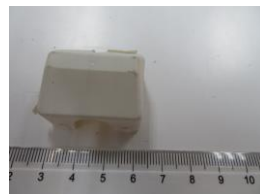
Test item053



Test item054



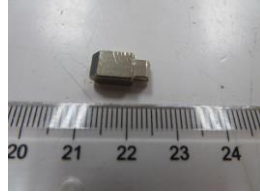
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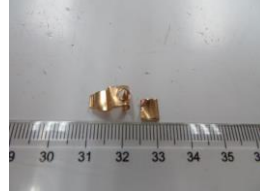
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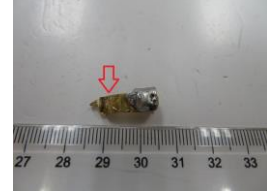
Test item057



Test item058



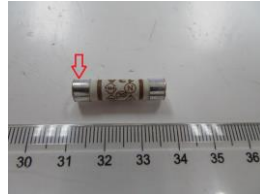
Test item059



Test item060



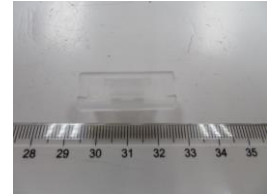
Test item061



Test item062



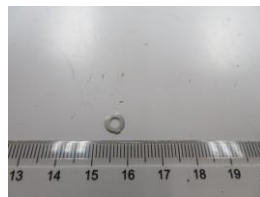
Test item063



Test item064



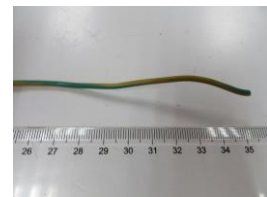
Test item065



Test item066



Test item067



Test item068



Test item069



Test item070



Test item071

---End of Report---

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