TEST REPORT

Applicant Company	:	SHENZHNE LIUYE TECHNOLOGY CO.,LTD
Address	:	No. 5B06, 5th Floor, Building 21, Wangtang Industrial Zone, Xinwei Village, Xili Street, Nanshan District, Shenzhen City,China
Manufacturer	:	SHENZHNE LIUYE TECHNOLOGY CO.,LTD
Address	:	No. 5B06, 5th Floor, Building 21, Wangtang Industrial Zone, Xinwei Village, Xili Street, Nanshan District, Shenzhen City,China

Sample Information

Sample Name	:	Trichromatic inner honeycomb tire
Trade Mark	:	/
Basic Model No.	:	Flick series
Series Model No.	:	/
Sample Received Date	:	March 19, 2024
Testing Period	:	March 19, 2024~March 22, 2024
Date of issue	:	March 22, 2024
Results	:	Please refer to next page(s).

TEST REQUEST	CONCLUSION
As specified by client, based on the performed tests on submitted sample, the result of Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), PBBs, PBDEs, Dibutyl Phthalate(DBP), Butylbenzyl Phthalate(BBP), Di-2-ethylhexyl Phthalate(DEHP) and Diisobutyl phthalate(DIBP) content comply with the limits set by RoHS Directive 2011/65/EU with amendment (EU) 2015/863.	**Pass**

Edited by: Wick Wu Approved by: Kim Chan

SHENZHEN TOBY LABORATORIES INC. TOBY

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TEST RESULTS:

1. Screening test

Test method: With reference to IEC 62321-1:2013, IEC 62321-2:2021, IEC 62321-3-1:2014 and IEC 62321-8:2017. For Heavy Metals and Flame Retardants, analyzed by Energy Dispersive X-ray Fluorescence Spectrometer (XRF); for phthalates, analyzed by Gas Chromatography and Mass Spectrometer (GC-MS).

Sample No.	Sample Description	Heavy Metals and Flame Retardants					Phthalates			
		Cd	Pb	Hg	Cr▼	Br▼	DIBP	DBP	BBP	DEHP
1	Black rubber tire	BL	BL	BL	BL	BL	BL	BL	BL	BL

NOTE :

- "BL" denotes below limit
- "OL" denotes over limit
- "X" denotes inconclusive
- "NA" denotes not applicable

Remark :

1. Results were obtained by XRF for primary screening, and further chemical testing by ICP(for Cd, Pb, Hg), UV-Vis(for Cr(VI)) and GC-MS(for PBBs, PBDEs) are recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1:2013(Unit: mg/kg).

Element	Polymers	Metals	Composite material
Cd	BL≤(70-3σ)<X<(130+3σ)≤OL	BL≤(70-3σ)<X<(130+3σ)≤OL	LOD<X<(150+3σ)≤OL
Pb	BL≤(700-3σ)<X<(1300+3σ)≤OL	BL≤(700-3σ)<X<(1300+3σ)≤OL	BL≤(500-3σ)<X<(1500+3σ)≤OL
Hg	BL≤(700-3σ)<X<(1300+3σ)≤OL	BL≤(700-3σ)<X<(1300+3σ)≤OL	BL≤(500-3σ)<X<(1500+3σ)≤OL
Cr	BL≤(700-3σ)<X	BL≤(700-3σ)<X	BL≤(500-3σ)<X
Br	BL≤(300-3σ)<X	/	BL≤(250-3σ)<X

- 3σ= The reproducibility of analytical instruments
- "/ "= Not applicable
- LOD= Detection limit

2. The XRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.

3. The maximum permissible limit is quoted from the document RoHS Directive 2011/65/EU with amendment (EU) 2015/863.

4. ▼=For restricted substances PBBs and PBDEs, the results show the total Br content, the restricted substance was Cr(VI), and the results showed the total Cr content.

5. Screening results of phthalates are for primary screening, and further chemical testing by GC-MS (for DBP, BBP,DEHP and DIBP) are recommended to be performed if the concentration exceeds the below warning value(Unit: mg/kg).

Test item	Screening limit
Di-2-ethylhexyl phthalate(DEHP)	BL≤600<X
Dibutyl phthalate(DBP)	BL≤600<X
Benzylbutyl phthalate(BBP)	BL≤600<X
Diisobutyl phthalate(DIBP)	BL≤600<X

Disclaimers:

This XRF Screening report is for reference purposes only. The applicant shall make its/his/her own judgment as to whether the information provided in this XRF screening report is sufficient for its/his/her purposes. The result shown in this XRF screening report will differ based on various factors, including but not limited to, the sample size, thickness, area, surface flatness, equipment parameters and matrix effect (e.g. plastic, rubber, metal, glass, ceramic etc.). Further wet chemical pre-treatment with relevant chemical equipment analysis are required to obtain quantitative data.

2. Chemical test.

Test method:

Lead(Pb) & Cadmium(Cd) Content:

With reference to IEC 62321-5:2013, by acid digestion and analysis was performed by inductively coupled plasma atomic emission spectrometer (ICP-OES)

Mercury(Hg) Content:

With reference to IEC 62321-4:2013+AMD1:2017 CSV, by acid digestion and analysis was performed by inductively coupled plasma atomic emission spectrometer (ICP-OES)

Hexavalent Chromium(Cr(VI)) Content:

With reference to IEC 62321-7-1:2015 or IEC 62321-7-2:2017, by alkaline digestion and analysis was performed by UV-visible spectrophotometer (UV-Vis)

PBBs & PBDEs Content:

With reference to IEC 62321-6:2015, by solvent extraction and analysis was performed by gas chromatographic-mass spectrometer (GC-MS)

BBP DBP DEHP & DIBP Content:

With reference to IEC 62321-8:2017, by solvent extraction and analysis was performed by gas chromatographic-mass spectrometer (GC-MS)

Remark :

- MDL = Method Detection Limit
- "- "= Not Regulated
- N.D.=Not Detected(<MDL or LOQ)
- mg/kg = ppm=parts per million
- LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 μg/cm^2
- ★ = a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13μg/cm^2. The sample coating is considered to contain Cr(VI).

  b. The sample is negative for Cr(VI) if Cr(VI) is N.D.(concentration less than 0.10μg/cm^2). The sample coating is considered a non- Cr(VI) based coating.

  c. The result between 0.10μg/cm^2 and 0.13μg/cm^2 is considered to be inconclusive, unavoidable coating variations may influence the determination.
- Information on storage conditions and production date of the tested samples is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

#1 According to RoHS Directive 2011/65/EU and its amendments, Lead is exempted as an alloying element in Copper containing up to 4% (40000ppm) by weight.

#2 According to RoHS Directive 2011/65/EU and its amendments, Lead is exempted in glass of cathode ray tubes, electronic components and fluorescent tubes.

#3 According to RoHS Directive 2011/65/EU and its amendments, Lead is exempted in electronic ceramic parts (e.g. piezoelectronic devices).

#4 According to RoHS Directive 2011/65/EU and its amendments, Lead is exempted in high melting temperature type solders (i.e. lead-based alloys containing 85 % by weight or more lead).

#5 According to RoHS Directive 2011/65/EU and its amendments, Lead is exempted as an alloying element in Aluminum containing up to 0.4% (4000ppm) by weight.

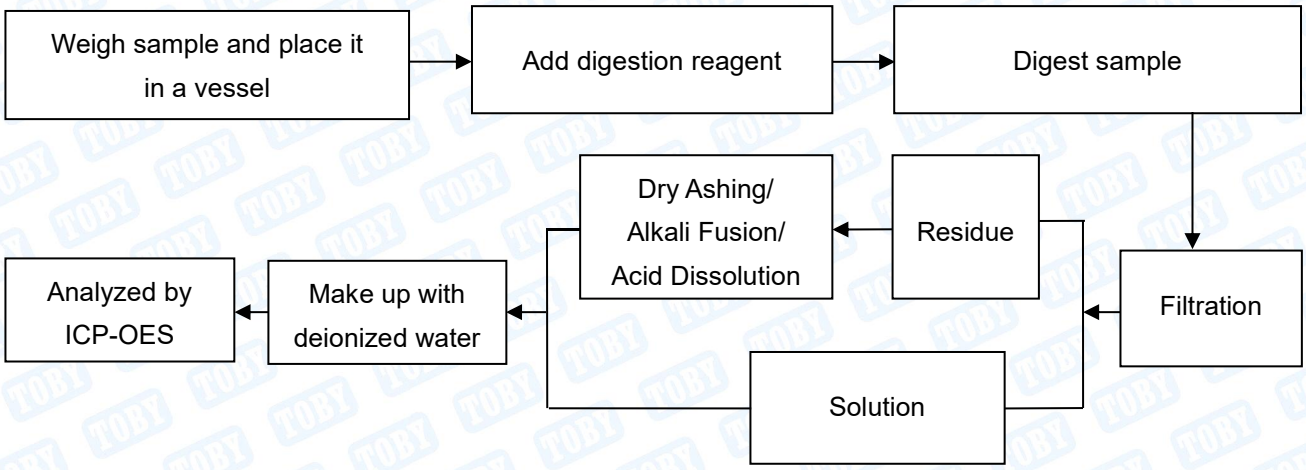
#6 According to RoHS Directive 2011/65/EU and its amendments, Cadmium and its compounds in electrical contact are exempted.

#7 According to RoHS Directive 2011/65/EU and its amendments, Lead is exempted in steel for machining purposes and in galvanised steel containing up to 0.35% (3500ppm) by weight.

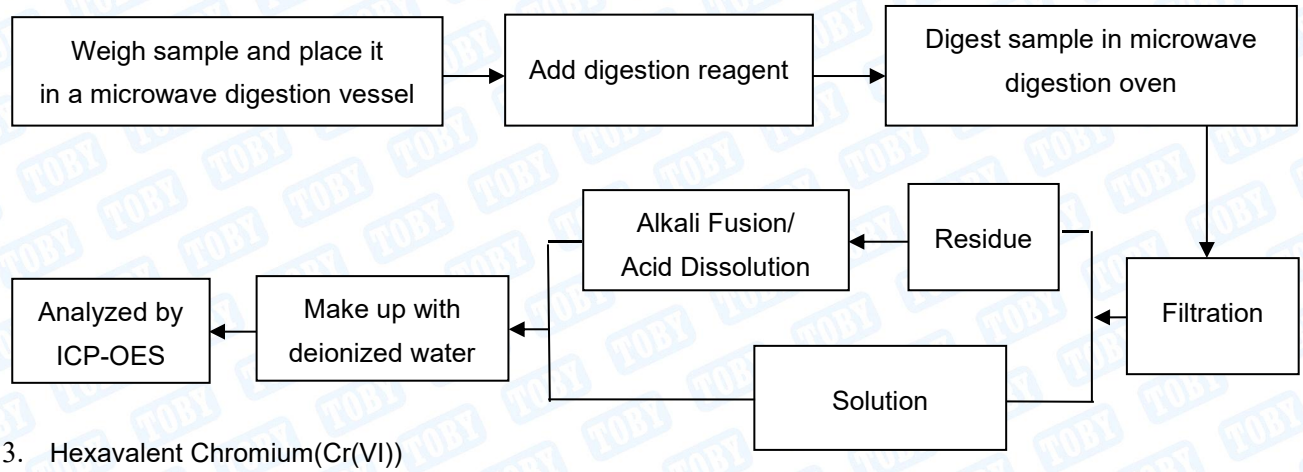
RoHS Restricted Substances	Maximum Concentration Value (mg/kg) (by weight in homogenous materials)
Cadmium(Cd)	100
Lead(Pb)	1000
Mercury(Hg)	1000
Hexavalent Chromium(Cr(VI))	1000
Polybrominated biphenyls(PBBs)	1000
Polybrominated diphenylethers(PBDEs)	1000
Dibutyl Phthalate(DBP)	1000
Butylbenzyl Phthalate(BBP)	1000
Di-(2-ethylhexyl) Phthalate(DEHP)	1000
Diisobutyl phthalate(DIBP)	1000

Test Process

1. Lead(Pb) & Cadmium(Cd): IEC 62321-5:2014

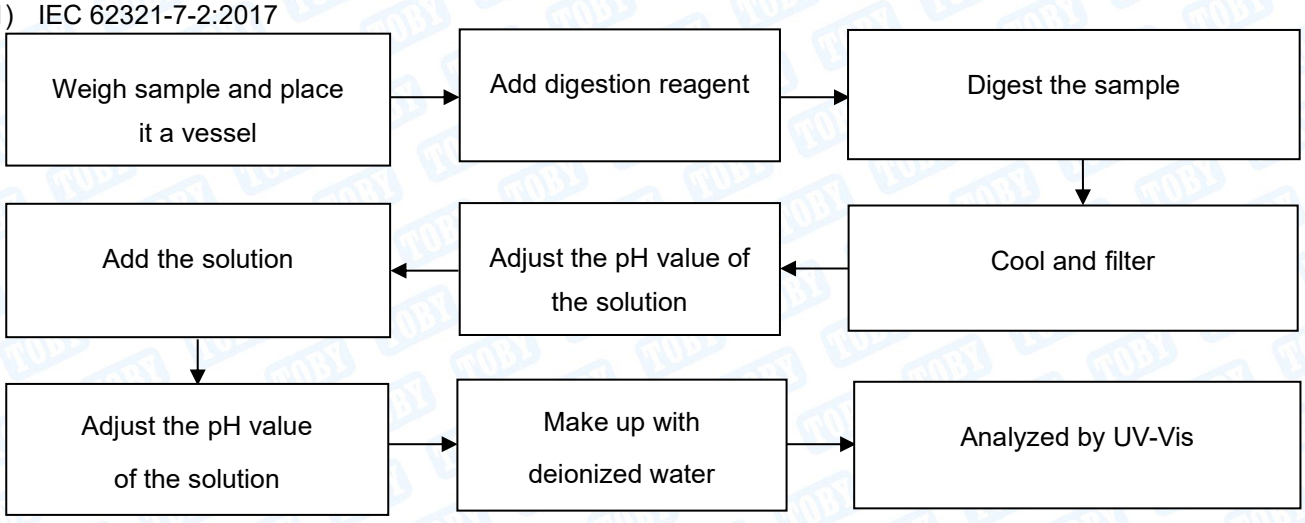


2. Mercury(Hg): IEC 62321-4:2014+A1:2017

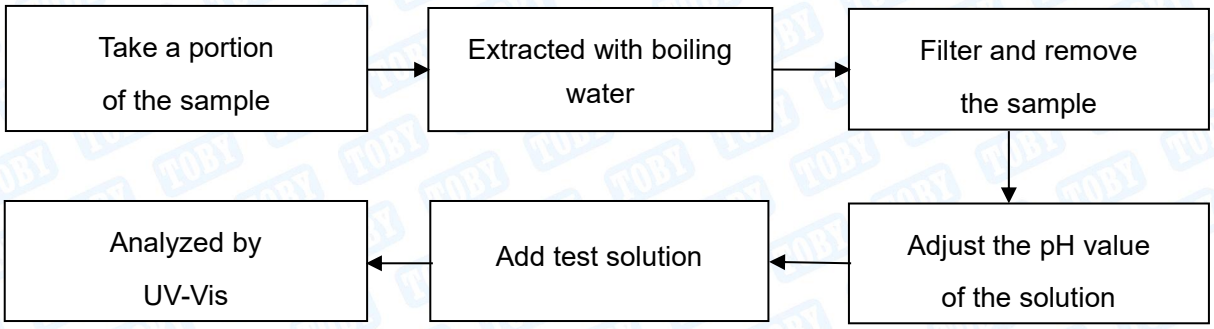


3. Hexavalent Chromium(Cr(VI))

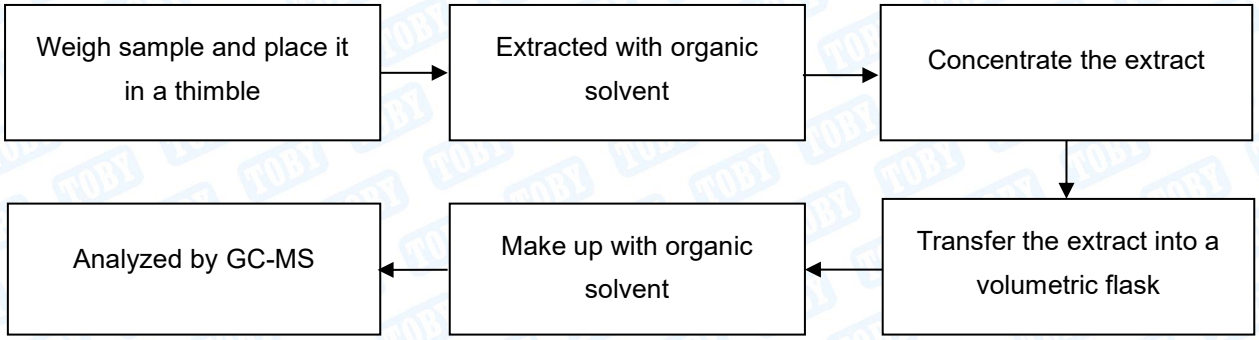
1) IEC 62321-7-2:2017



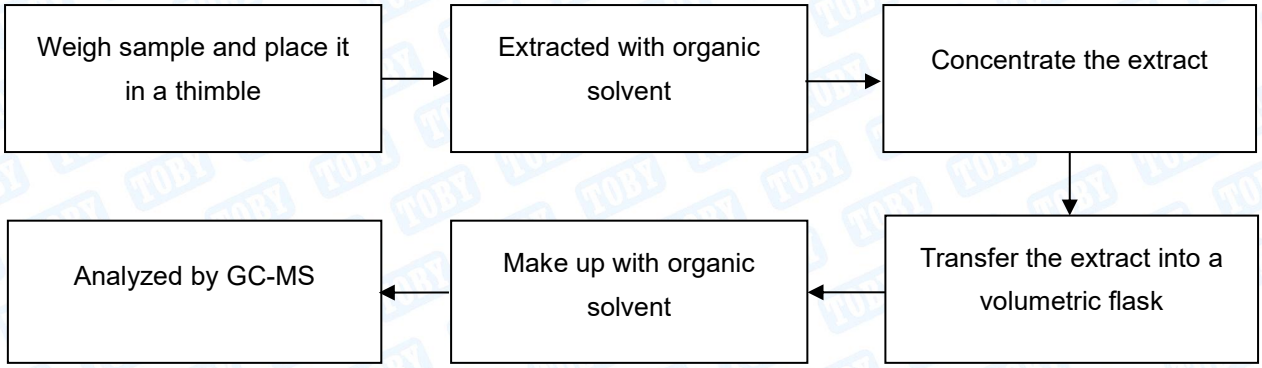
2) IEC 62321-7-1:2015



4. Polybrominated Biphenyls(PBBs) & Polybrominated Diphenyl Ethers(PBDEs) : IEC 62321-6:2015

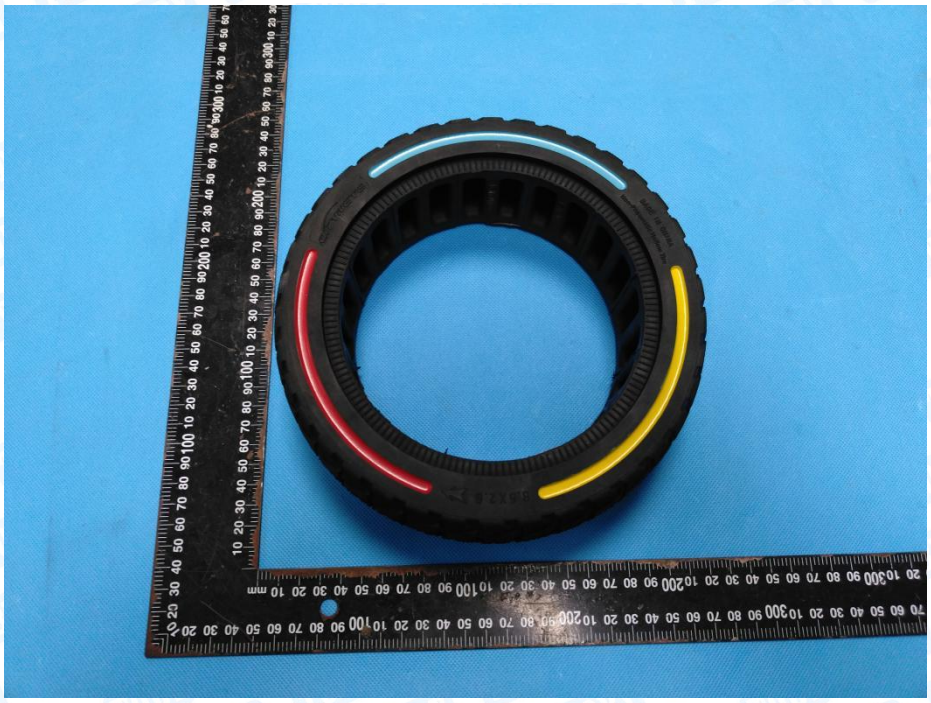


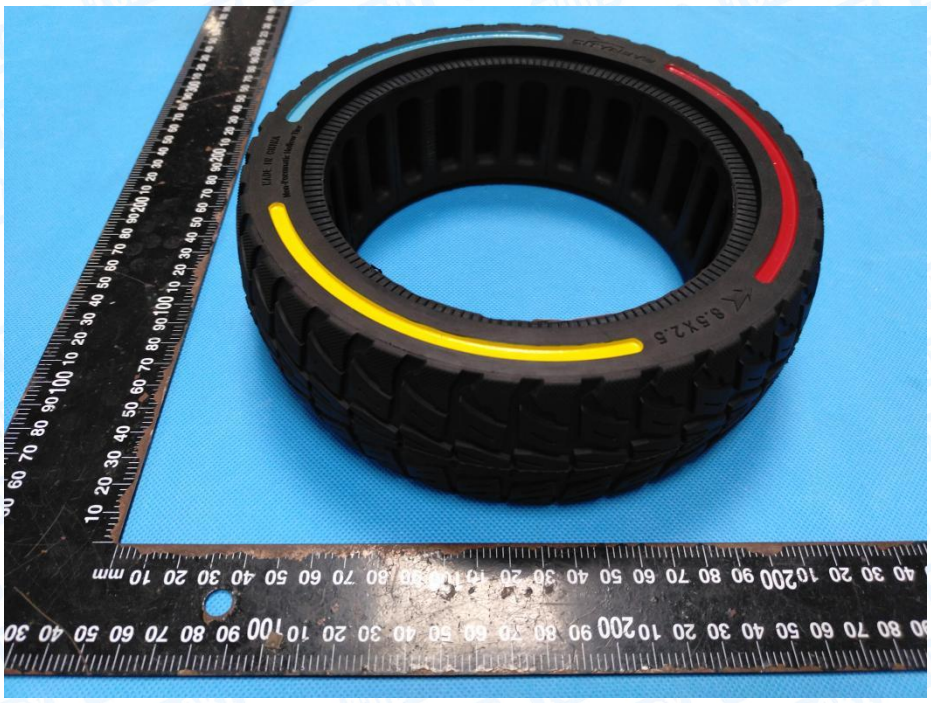
5. Phthalates(DBP, BBP, DEHP & DIBP) : IEC 62321-8:2017



Sample Photo(s)

TBR-C-202403-0179-1





TEST REPORT

Statement:

1. The information as listed on the first page of this test report was all provided by the client except the sample from, date received, test period, test results and conclusion. The client shall be responsible for the representativeness of sample and authenticity of materials, for which TOBY shall bear no responsibilities.
2. This test data is only responsible for the tested sample. The judgment method of determining the conformity in this test report is according to the measured value without considering the risk caused by uncertainty, unless otherwise clearly stipulated in special agreement, standard or specification. The client shall assume the risk caused by the judgment menthod, and TOBY shall not bear related responsibilities.
3. The test report is effective only with both signature and specialized stamp. Without written approval of TOBY, this report can't be reproduced in full or in part.
4. The result(s) in no CMA logo report shall only be used for client's scientific research,teaching,internal quality control,product research and development,etc..and just for internal reference.
5. The marked with special symbols in CNAS logo report means that the test item(s) was(were) currently not applying for CNAS accreditation.

***** END OF REPORT *****