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**Test Report No.** 4263835 Date: 10-Jun-2019

Client: CHANG RUBBER DEVELOPMENT CO.,LTD.

N0.36/17, FL3, MOO13,

**BUENGKHAMPROI, LUMLUKA PATHUMTHANI 12150 THAILAND** 

The following sample(s) was/were submitted and identified by/on behalf of the client as:

Sample Name : CHANG RUBBER CR/NEOPRENE Sample Description CR/NEOPRENE RUBBER SHEET

Batch/Lot No. THCR

Manufacturer/Vendor : CHANG RUBBER DEVELOPMENT CO.,LTD.

Country of Origin : THAILAND

The following sample(s) was/were identified by SGS as:

SGS Sample No. : 4408717

Sample Condition : Sample is contained in a plastic bag.

Quantity Submitted : 1 pc

Sample Receiving Date : 30-May-2019

: 30-May-2019 to 10-Jun-2019 Testing Period

**Test Requested** : In accordance with the RoHS Directive 2011/65/EU (Annex II) [amended by Directive

(EU) 2015/863] .Selected test (s) as requested by client.

Test Method : (1) IEC 62321-5 edition 1.0 : 2013 for Lead content, Analyzed by ICP-OES.

Microwave digestion method

(2) IEC 62321-5 edition 1.0: 2013 for Cadmium content, Analyzed by ICP-OES.

Microwave digestion method

(3) IEC 62321-4 ,edition 1.1: 2017 for Mercury Content, Analyzed by ICP-OES.

Microwave digestion method

(4) IEC 62321-7-2 edition 1.0: 2017, determination of Hexavalent Chromium For Insoluble polymer by Colorimetric Method using UV-Vis.and/or with reference to

IEC 62321-5:2013, determination of Chromium by ICP-OES.

(5) IEC 62321-6 edition 1.0: 2015 for PBBs/PBDEs content, Analyzed by GC/MS.

**Test Results** : Please refer to next page.

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CONCLUSION

Based on the performed tests on submitted sample(s), the results of Cadmium, Lead, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) do not exceed the limits as set by RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

## Remark:

On 4 June 2015, Commission Directive (EU) 2015/863 was published in the Official Journal of the European Union (OJEU) to include the phthalates BBP,DBP,DEHP and DIBP into ANNEX II of the Rohs Recast Directive. The new law restricts each phthalate to no more than 0.1% in each homogeneous material of an electrical product.

Signed for and on behalf of SGS (Thailand) Limited

Patcharee Treeporncharoen **Laboratory manager - Chemical** 

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**Test Report No.** 

**TEST RESULTS** 

4263835

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Test results by chemical method (Unit: mg/kg)

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Test Item (s):	Method (Refer to)	Result (1)	MDL	RoHS Limit	
Lead (Pb)	(1)	n.d.	2	1000	
Cadmium (Cd)	(2)	n.d.	2	100	
Mercury (Hg)	(3)	n.d.	2	1000	
Hexavalent Chromium (Cr(VI))	(4)	n.d.	8	1000	

**Test Part Description** Result (1) black rubber

(a) mg/kg = ppm; 0.1wt% = 1000 ppm

(b) n.d. = Not Detected (<MDL)

(c) MDL = Method Detection Limit

(d) Test done on client submitted sample

(e) The result of Hexavalent Chromium (Cr(VI)) is "ND" as the result of Chromium (Cr) is "ND", and confirmation test of Hexavalent Chromium (Cr(VI)) is not required.

(f) If the Chromium (Cr) content is greater than the MDL of Hexavalent Chromium (Cr(VI)), confirmation test of Hexavalent Chromium (Cr(VI)) is required.

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Test results by chemical method (Unit: mg/kg)						
Test Item (s):	Method (Refer to)	Result (1)	MDL	RoHS Limit		
Sum of PBBs	(5)	n.d.	-	1000		
Monobromobiphenyl		n.d.	5	-		
Dibromobiphenyl		n.d.	5	-		
Tribromobiphenyl		n.d.	5	-		
Tetrabromobiphenyl		n.d.	5	-		
Pentabromobiphenyl		n.d.	5	-		
Hexabromobiphenyl		n.d.	5	-		
Heptabromobiphenyl		n.d.	5	-		
Octabromobiphenyl		n.d.	5	-		
Nonabromobiphenyl		n.d.	5	-		
Decabromobiphenyl		n.d.	5	-		

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Test results by chemical method (Unit: mg/kg)

Test Item (s):	Method (Refer to)	Result (1)	MDL	RoHS Limit
Sum of PBDEs	(5)	n.d.	-	1000
Monobromodiphenyl ether		n.d.	5	-
Dibromodiphenyl ether		n.d.	5	-
Tribromodiphenyl ether		n.d.	5	-
Tetrabromodiphenyl ether		n.d.	5	-
Pentabromodiphenyl ether		n.d.	5	-
Hexabromodiphenyl ether		n.d.	5	-
Heptabromodiphenyl ether		n.d.	5	-
Octabromodiphenyl ether		n.d.	5	-
Nonabromodiphenyl ether		n.d.	5	-
Decabromodiphenyl ether		n.d.	5	_

**Test Part Description** Result (1) black rubber

(a) mg/kg = ppm; 0.1 wt% = 1000 ppm

(b) n.d. = Not Detected

(c) MDL = Method Detection Limit

(d) "-" = Not regulated

(e) Test done on client submitted sample

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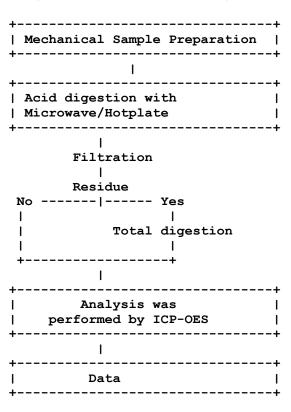
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Flow chart of Pb,Cd,Hg Testing

(Test method : IEC 62321)



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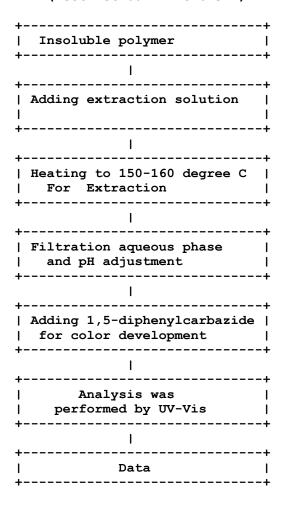


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Flow chart of Hexavalent Chromium Testing

(Test method : IEC 62321)



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Flow chart of PBBs, PBDEs Testing (Test method : IEC 62321) +----+ | Sample pretreatment/separation | ------| Sample solvent extraction by Toluene Concentrate/Dilution of extracted solution -\_\_\_\_\_\_ Filtration Analysis was performed by GC/MS Data

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## SAMPLE/ATTACHMENT PICTURE



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