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TEST REPORT

Customer:

Report No: AR-22-SV-025643-01 CSC STEEL SDN. BHD.

Date of Issue: 28/06/2022

EUMYBM-00112155 Sample No: 138-2022-06004318

CSC STEEL SDN. BHD. To:

180, Kawasan Industri Ayer Keroh,

Ayer Keroh, 75450 Melaka MALAYSIA

Attn: Ms. Chee Sook Jin Date Sample Received: 22/06/2022

Date of Testing: 23/06/2022 to 28/06/2022

The following sample was identified by the customer as:

SAMPLE DESCRIPTION: COLD ROLLED STEEL SAMPLE

SAMPLE ID: JZ28691

Determination of Cadmium (Cd), Hexavalent Chromium (Cr6+), Lead (Pb), Mercury (Hg), Phthalates, Polybrominated Biphenyl (PBBs), Polybrominated Diphenyl Ether (PBDEs) with RoHS Directive 2011/65/EU and (EU) 2015/863 (amendment in Annex II)

Conclusion:

Objective (s):

Test(s) Required	Compliance with Objective(s)
Cadmium (Cd), Lead (Pb), Mercury (Hg), Hexavalent Chromium (Cr6+), Monobromo biphenyl, Dibromo biphenyl, Tribromo biphenyl, Tetrabromo biphenyl, Pentabromo biphenyl, Hexabromo biphenyl, Heptabromo biphenyl, Octabromo biphenyl, Nonabromo biphenyl, Decabromo biphenyl, Sum Polybrominated Biphenyls (PBBs), Monobromo diphenyl ether, Dibromo diphenyl ether, Tribromo diphenyl ether, Tetrabromo diphenyl ether, Pentabromo diphenyl ether, Hexabromo diphenyl ether, Hexabromo diphenyl ether, Octabromo diphenyl ether, Nonabromo diphenyl ether, Decabromo diphenyl ether, Sum Polybrominated Diphenyl Ethers (PBDEs), Benzyl butyl phthalate (BBP), Bis(2-ethylhexyl)phthalate (DEHP), Dibutyl phthalate (DBP), Di-isobutyl phthalate (DiBP)	Comply

Test Result(s):

Industrial Products Analysis	Unit	Result	LOQ	Test Method	Specification				
Cadmium (Cd)	mg/kg	<loq< td=""><td>1</td><td>IEC 62321-5</td><td>≤100mg/kg</td></loq<>	1	IEC 62321-5	≤100mg/kg				
Lead (Pb)	mg/kg	<loq< td=""><td>10</td><td>IEC 62321-5</td><td>≤1000mg/kg</td></loq<>	10	IEC 62321-5	≤1000mg/kg				
Mercury (Hg)	mg/kg	<loq< td=""><td>5</td><td>IEC 62321-4</td><td>≤1000mg/kg</td></loq<>	5	IEC 62321-4	≤1000mg/kg				
Hexavalent Chromium (Cr6+)	-	negative	-	IEC 62321-7-1	≤1000mg/kg (Refer Note 2)				
Polybrominated Biphenyl (PBBs)				IEC 62321-6					
Monobromo biphenyl	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3				
Dibromo biphenyl	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3				
Tribromo biphenyl	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3				
Tetrabromo biphenyl	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3				
Pentabromo biphenyl	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3				
Hexabromo biphenyl	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3				
Heptabromo biphenyl	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3				
Octabromo biphenyl	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3				
Nonabromo biphenyl	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3				
Decabromo biphenyl	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3				
Sum Polybrominated Biphenyls (PBBs)	mg/kg	<loq< td=""><td>20</td><td></td><td>≤1000mg/kg</td></loq<>	20		≤1000mg/kg				
	Cadmium (Cd) Lead (Pb) Mercury (Hg) Hexavalent Chromium (Cr6+) Polybrominated Biphenyl (PBBs) Monobromo biphenyl Dibromo biphenyl Tribromo biphenyl Tetrabromo biphenyl Pentabromo biphenyl Hexabromo biphenyl Hexabromo biphenyl Octabromo biphenyl Nonabromo biphenyl	Cadmium (Cd) mg/kg Lead (Pb) mg/kg Mercury (Hg) mg/kg Hexavalent Chromium (Cr6+) - Polybrominated Biphenyl (PBBs) Monobromo biphenyl mg/kg Dibromo biphenyl mg/kg Tribromo biphenyl mg/kg Tetrabromo biphenyl mg/kg Pentabromo biphenyl mg/kg Hexabromo biphenyl mg/kg Heptabromo biphenyl mg/kg Octabromo biphenyl mg/kg Nonabromo biphenyl mg/kg Decabromo biphenyl mg/kg	Cadmium (Cd)mg/kg <loq< th="">Lead (Pb)mg/kg<loq< td="">Mercury (Hg)mg/kg<loq< td="">Hexavalent Chromium (Cr6+)-negativePolybrominated Biphenyl (PBBs)Monobromo biphenylmg/kg<loq< td="">Dibromo biphenylmg/kg<loq< td="">Tribromo biphenylmg/kg<loq< td="">Tetrabromo biphenylmg/kg<loq< td="">Pentabromo biphenylmg/kg<loq< td="">Hexabromo biphenylmg/kg<loq< td="">Heptabromo biphenylmg/kg<loq< td="">Octabromo biphenylmg/kg<loq< td="">Nonabromo biphenylmg/kg<loq< td="">Decabromo biphenylmg/kg<loq< td="">Decabromo biphenylmg/kg<loq< td="">Decabromo biphenylmg/kg<loq< td=""></loq<></loq<></loq<></loq<></loq<></loq<></loq<></loq<></loq<></loq<></loq<></loq<></loq<></loq<></loq<>	Cadmium (Cd) mg/kg < LOQ 1 Lead (Pb) mg/kg < LOQ 5 Mercury (Hg) mg/kg < LOQ 5 Hexavalent Chromium (Cr6+) - negative - Polybrominated Biphenyl (PBBs) Monobromo biphenyl mg/kg < LOQ 20 Dibromo biphenyl mg/kg < LOQ 20 Tribromo biphenyl mg/kg < LOQ 20 Tetrabromo biphenyl mg/kg < LOQ 20 Pentabromo biphenyl mg/kg < LOQ 20 Hexabromo biphenyl mg/kg < LOQ 20 Hexabromo biphenyl mg/kg < LOQ 20 Cotabromo biphenyl mg/kg < LOQ 20 Heptabromo biphenyl mg/kg < LOQ 20 Cotabromo biphenyl mg/kg < LOQ 20 Decabromo biphenyl mg/kg < LOQ 20	Cadmium (Cd) mg/kg <loq< th=""> 1 IEC 62321-5 Lead (Pb) mg/kg <loq< td=""> 10 IEC 62321-5 Mercury (Hg) mg/kg <loq< td=""> 5 IEC 62321-4 Hexavalent Chromium (Cr6+) - negative - IEC 62321-7-1 Polybrominated Biphenyl (PBBs) Monobromo biphenyl mg/kg <loq< td=""> 20 Dibromo biphenyl mg/kg <loq< td=""> 20 Tribromo biphenyl mg/kg <loq< td=""> 20 Pentabromo biphenyl mg/kg <loq< td=""> 20 Hexabromo biphenyl mg/kg <loq< td=""> 20 Heptabromo biphenyl mg/kg <loq< td=""> 20 Octabromo biphenyl mg/kg <loq< td=""> 20 Nonabromo biphenyl mg/kg <loq< td=""> 20 Nonabromo biphenyl mg/kg <loq< td=""> 20 Decabromo biphenyl mg/kg <loq< td=""> 20</loq<></loq<></loq<></loq<></loq<></loq<></loq<></loq<></loq<></loq<></loq<></loq<></loq<>				

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TEST REPORT Page No: 2/3

Report No: AR-22-SV-025643-01 Customer: CSC STEEL SDN. BHD.

Date of Issue: 28/06/2022

Batch No: EUMYBM-00112155 Sample No: 138-2022-06004318

Analysis	Industrial Products Analysis	Unit	Result	LOQ	Test Method	Specification
SVK17	Polybrominated Diphenyl Ether (PBDEs)				IEC 62321-6	
	Monobromo diphenyl ether	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3
	Dibromo diphenyl ether	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3
	Tribromo diphenyl ether	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3
	Tetrabromo diphenyl ether	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3
	Pentabromo diphenyl ether	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3
	Hexabromo diphenyl ether	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3
	Heptabromo diphenyl ether	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3
	Octabromo diphenyl ether	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3
	Nonabromo diphenyl ether	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3
	Decabromo diphenyl ether	mg/kg	<loq< td=""><td>20</td><td></td><td>Refer Note 3</td></loq<>	20		Refer Note 3
	Sum Polybrominated Diphenyl Ethers (PBDEs)	mg/kg	<loq< td=""><td>20</td><td></td><td>≤1000mg/kg</td></loq<>	20		≤1000mg/kg
SVV1Q	Phthalates				IEC 62321-8	
	Benzyl butyl phthalate (BBP)	% (w/w)	<loq< td=""><td>0.02</td><td></td><td>≤0.1%</td></loq<>	0.02		≤0.1%
	Bis(2-ethylhexyl)phthalate (DEHP)	% (w/w)	<loq< td=""><td>0.02</td><td></td><td>≤0.1%</td></loq<>	0.02		≤0.1%
	Dibutyl phthalate (DBP)	% (w/w)	<loq< td=""><td>0.02</td><td></td><td>≤0.1%</td></loq<>	0.02		≤0.1%
	Di-isobutyl phthalate (DiBP)	% (w/w)	<loq< td=""><td>0.02</td><td></td><td>≤0.1%</td></loq<>	0.02		≤0.1%

Specification Note

- 1. RoHS Directive 2011/65/EU and (EU) 2015/863 (amendment in Annex II)
- Expression result for Hexavalent Chromium
- i. Concentration of Hexavalent chromium (<0.10μg/cm2) = Negative (sample coating is consider non Cr(VI) based coating)
- ii. Concentration of Hexavalent chromium (≥0.10 and ≤0.13 µg/cm2) = Inconclusive (Unavoidable coating variations may influence the determination)
- iii.Concentration of Hexavalent chromium (≥0.13µg/cm2) = Positive (Sample coating is consider to contain Cr(VI))
- 3. Based on sum amount of PBB/PBDE limit, which is ≤1000mg/kg

Remark

- 1. The test portion was totally dissolved for cadmium, lead & mercury test by using pre-conditioning method as mentioned above.
- $2.\ IEC\ 62321\ flowchart\ can\ be\ obtained\ from\ https://admin.apac-websites.eurofins.com/media/606192/efctm001-issue-2.pdf$

This 3 page(s) of report and its attachment(s), if relevant, has/have been validated by

ChM Shaya Fan Ong R Sa (Hana) Ind

ChM. Sheue Fen Ong, *B. Sc (Hons) Industrial Chemistry* IKM Registered Chemist Registered No.:M/2864/5629/09







TEST REPORT Page No: 3/3

Report No: AR-22-SV-025643-01 Customer: CSC STEEL SDN. BHD.

Date of Issue: 28/06/2022



Batch No: EUMYBM-00112155 Sample No: 138-2022-06004318

EXPLANATORY NOTE

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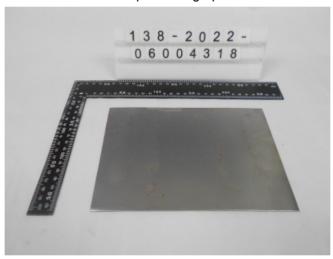
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N/A means not applicable.

<LOD means not detected at or below the Limit of Detection (LOD).

LOQ means below the Limit of Quantification (LOQ)

Sample Photograph



- End of Report -

MALAYSIA