

TEST REPORT

Report No: AR-25-SV-035200-01
Customer: CSC STEEL SDN. BHD.
Date of Issue: 02/09/2025
JB Ref: 156-2025-08001209



Batch No: EUMYBM-00202178
Sample No: 138-2025-08004370

To: CSC STEEL SDN. BHD.
180, Kawasan Industri Ayer Keroh,
Ayer Keroh,
75450 Melaka
MALAYSIA

Attn: Ms. Chee Sook Jin

Date Sample Received: 22/08/2025
Date of Testing: 25/08/2025 to 02/09/2025

The following sample was identified by the customer as :
REALCOLOR THERMOSHIELD KP4228

Client Sample Code: 156-2025-08001209

Objective (s): 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 :

Test(s) Required	Compliance with Objective(s)
Cadmium (Cd), Lead (Pb), Mercury (Hg), Monobromobiphenyl, Dibromobiphenyl, Tribromo biphenyl, Tetrabromo biphenyl, Pentabromo biphenyl, Hexabromo biphenyl, Heptabromobiphenyl, Octabromo biphenyl, Nonabromo biphenyl, Decabromo biphenyl, SumPolybrominated Biphenyles (PBBs), Monobromodiphenyl ether, Dibromodiphenylether, Tribromo diphenylether, Tetrabromo diphenyl ether, Pentabromodiphenyl ether, Hexabromo diphenyl ether, Heptabromodiphenyl ether, Octabromo diphenyl ether, Nonabromo diphenyl ether, Decabromo diphenyl ether, Sum Polybrominated Diphenyl Ether (PBDEs), Benzylbutyl phthalate (BBP), Dibutyl phthalate (DBP), Di-isobutylphthalate (DiBP), Bis(2-ethylhexyl phthalate (DEHP)	Comply
Hexavalent Chromium (Cr6+)	Positive (sample coating is considered to contain Cr(VI))

Test Result(s):

Analysis	Industrial Products Analysis	Unit	Result	LOQ	Test Method	Specifcaton
SVK51	Cadmium (Cd)	mg /kg	<LOQ	1	IEC 62321-5:2013	≤100mg /kg
SVL03	Lead (Pb)	mg /kg	<LOQ	10	IEC 62321-5:2013	≤1000mg/kg
SVK82	Mercury (Hg)	mg /kg	<LOQ	5	IEC 62321-4:2013	≤1000mg/kg
SVK66	Hexavalent Chromium (Cr6+)	µg /cm ²	positve	0.1	IEC 62321-7-1:2015	Refer Note 2
SVK16	Polybrominated Biphenyl (PBBs)				IEC 62321-6:2015	
	Monobromo biphenyl	mg /kg	<LOQ	20		Refer Note 2
	Dibromo biphenyl	mg /kg	<LOQ	20		Refer Note 2
	Tribromo biphenyl	mg /kg	<LOQ	20		Refer Note 2
	Tetrabromo biphenyl	mg /kg	<LOQ	20		Refer Note 2
	Pentabromo biphenyl	mg /kg	<LOQ	20		Refer Note 2
	Hexabromo biphenyl	mg /kg	<LOQ	20		Refer Note 2
	Heptabromo biphenyl	mg /kg	<LOQ	20		Refer Note 2
	Octabromo biphenyl	mg /kg	<LOQ	20		Refer Note 2
	Nonabromo biphenyl	mg /kg	<LOQ	20		Refer Note 2

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Analysis	Industrial Products Analysis	Unit	Result	LOQ	Test Method	Specification
	Decabromo biphenyl	mg/kg	<LOQ	20		Refer Note 2
	Sum Polybrominated Biphenyls (PBBs)	mg/kg	<LOQ	20		≤1000mg/kg
SVK17	Polybrominated Diphenyl Ether (PBDEs)				IEC 62321-6:2015	
	Monobromo diphenyl ether	mg/kg	<LOQ	20		Refer Note 2
	Dibromo diphenyl ether	mg/kg	<LOQ	20		Refer Note 2
	Tribromo diphenyl ether	mg/kg	<LOQ	20		Refer Note 2
	Tetrabromo diphenyl ether	mg/kg	<LOQ	20		Refer Note 2
	Pentabromo diphenyl ether	mg/kg	<LOQ	20		Refer Note 2
	Hexabromo diphenyl ether	mg/kg	<LOQ	20		Refer Note 2
	Heptabromo diphenyl ether	mg/kg	<LOQ	20		Refer Note 2
	Octabromo diphenyl ether	mg/kg	<LOQ	20		Refer Note 2
	Nonabromo diphenyl ether	mg/kg	<LOQ	20		Refer Note 2
	Decabromo diphenyl ether	mg/kg	<LOQ	20		Refer Note 2
	Sum Polybrominated Diphenyl Ethers (PBDEs)	mg/kg	<LOQ	20		≤1000mg/kg
SVV1Q	♦ Phthalates				IEC 62321-8:2017	
	Benzyl butyl phthalate (BBP)	% (w/w)	<LOQ	0.02		≤0.1%
	Bis(2-ethylhexyl)phthalate (DEHP)	% (w/w)	<LOQ	0.02		≤0.1%
	Dibutyl phthalate (DBP)	% (w/w)	<LOQ	0.02		≤0.1%
	Di-isobutyl phthalate (DIBP)	% (w/w)	<LOQ	0.02		≤0.1%

Specification Note

- RoHS Directive 2011/65/EU and (EU) 2015/863 (amendment in Annex II).
- Expression result for Hexavalent Chromium:
 - Concentration of Hexavalent chromium ($<0.10 \mu\text{g}/\text{cm}^2$) = Negative (sample coating is considered a non-Cr(VI) based coating)
 - Concentration of Hexavalent chromium ($\geq 0.10 \mu\text{g}/\text{cm}^2$ and $\leq 0.13 \mu\text{g}/\text{cm}^2$) = Inconclusive (unavoidable coating variations may influence the determination)
 - Concentration of Hexavalent chromium ($>0.13 \mu\text{g}/\text{cm}^2$) = Positive (sample coating is considered to contain Cr(VI))
- Based on sum amount of PBB/PBDE limit, which is $\leq 1000\text{mg}/\text{kg}$.

Remark

- The test portion was totally dissolved for cadmium, lead & mercury test by using pre-conditioning method as mentioned above.
- IEC 62321 flowchart can be obtained from <https://cdnmedia.eurofins.com/apac/media/606192/efctm001-issue-2.pdf>
- Numeric result of Cr(VI) in $\mu\text{g}/\text{cm}^2$, obtained from calorimetric measurement above = $0.57 \mu\text{g}/\text{cm}^2$ (LOQ = $0.10 \mu\text{g}/\text{cm}^2$)
- Calculated content of Cr(VI) in coating, mg/kg = $165 \text{ mg}/\text{kg}$
 The content is calculated based on the following coating information provided by client:
 Coating mass of Topcoat: $0.0025 \text{ g}/\text{cm}^2$; Coating mass of Backcoat: $0.000917 \text{ g}/\text{cm}^2$;
- Unless otherwise specified, the conformity statement is assessed using a binary decision rule based on simple acceptance ($w = 0$), in accordance with ILAC-G8:09/2019.
- The conformity statement for Cr(VI) is based on IEC 62321-7-1 Edition 1.0:2015-09, Section 7, Table 1 — 'Comparison to standard and interpretation of result'.

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

Siti Nurdalili, B.Sc. (Hons) Applied Chemistry
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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 -