

**Samtec Inc.**  
**520 Park East Blvd**  
**New Albany, IN 47150**  
**United States**

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

**Ribbon Cable – Color Gray/ Red Stripe – PVC outer Insulation Jacket – Copper Conductors with Tin Plating**  
**Country of Destination: USA**  
**Model/ Part No.: FFMD- FFSD**

Sample Received Date: **01/19/2023**

Testing Period: **01/24/2023 – 02/06/2023**

Test Requested : Please refer to the result summary.

Test Method & Results : Please refer to next page(s).

Result Summary :

Test(s) Requested	Conclusion
1. <b>RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU</b>	See Test Results

Signed for and on behalf of SGS North America, Inc.

Prepared By:




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**1. RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU**

Test Item(s):	Unit	Test Method	Results	MDL
			1	
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5:2013 (Determination of Cd and Pb by ICP-OES and /or ICP-MS)	ND	2
Lead (Pb)	mg/kg		6.82	2
Mercury (Hg)	mg/kg	With reference to IEC 62321-4:2013+A1:2017 (Determination of Hg by ICP-OES and/ or ICP-MS)	ND	2
Hexavalent Chromium (CrVI)	mg/kg	With reference to IEC 62321-7-2:2017 (Determination of CrVI by UV-Vis)	ND*	8
<b>Sum of PBBs</b>	mg/kg	With reference to IEC 62321-6:2015 (Determination of PBB and PBDE by GC-MS)	ND	-
Monobromobiphenyl	mg/kg		ND	5
Dibromobiphenyl	mg/kg		ND	5
Tribromobiphenyl	mg/kg		ND	5
Tetrabromobiphenyl	mg/kg		ND	5
Pentabromobiphenyl	mg/kg		ND	5
Hexabromobiphenyl	mg/kg		ND	5
Heptabromobiphenyl	mg/kg		ND	5
Octabromobiphenyl	mg/kg		ND	5
Nonabromobiphenyl	mg/kg		ND	5
Decabromobiphenyl	mg/kg		ND	5
<b>Sum of PBDEs</b>	mg/kg		ND	-
Monobromodiphenyl ether	mg/kg		ND	5
Dibromodiphenyl ether	mg/kg		ND	5
Tribromodiphenyl ether	mg/kg	ND	5	
Tetrabromodiphenyl ether	mg/kg	ND	5	
Pentabromodiphenyl ether	mg/kg	ND	5	
Hexabromodiphenyl ether	mg/kg	ND	5	
Heptabromodiphenyl ether	mg/kg	ND	5	
Octabromodiphenyl ether	mg/kg	ND	5	
Nonabromodiphenyl ether	mg/kg	ND	5	
Decabromodiphenyl ether	mg/kg	ND	5	
Bis (2-ethylhexyl) Phthalate (DEHP)	mg/kg	IEC 62321-8:2017 (Determination of DEHP, BBP, DBP and DIBP by GC-MS)	236	50
Butyl Benzyl Phthalate (BBP)	mg/kg		ND	50
Dibutyl Phthalate (DBP)	mg/kg		ND	50
Diisobutyl Phthalate (DIBP)	mg/kg		ND	50

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Test Item(s):	Unit	Test Method	Results	MDL
			2	
Cadmium (Cd)	mg/kg	With reference to IEC 62321-5:2013 (Determination of Cd and Pb by ICP-OES and /or ICP-MS)	ND	2
Lead (Pb)	mg/kg		2.78	2
Mercury (Hg)	mg/kg	With reference to IEC 62321-4:2013+A1:2017 (Determination of Hg by ICP-OES and/ or ICP-MS)	ND	2
Hexavalent Chromium (CrVI)	mg/kg	With reference to IEC 62321-7-2:2017 (Determination of CrVI by UV-Vis)	ND*	8

**Sample Description:**

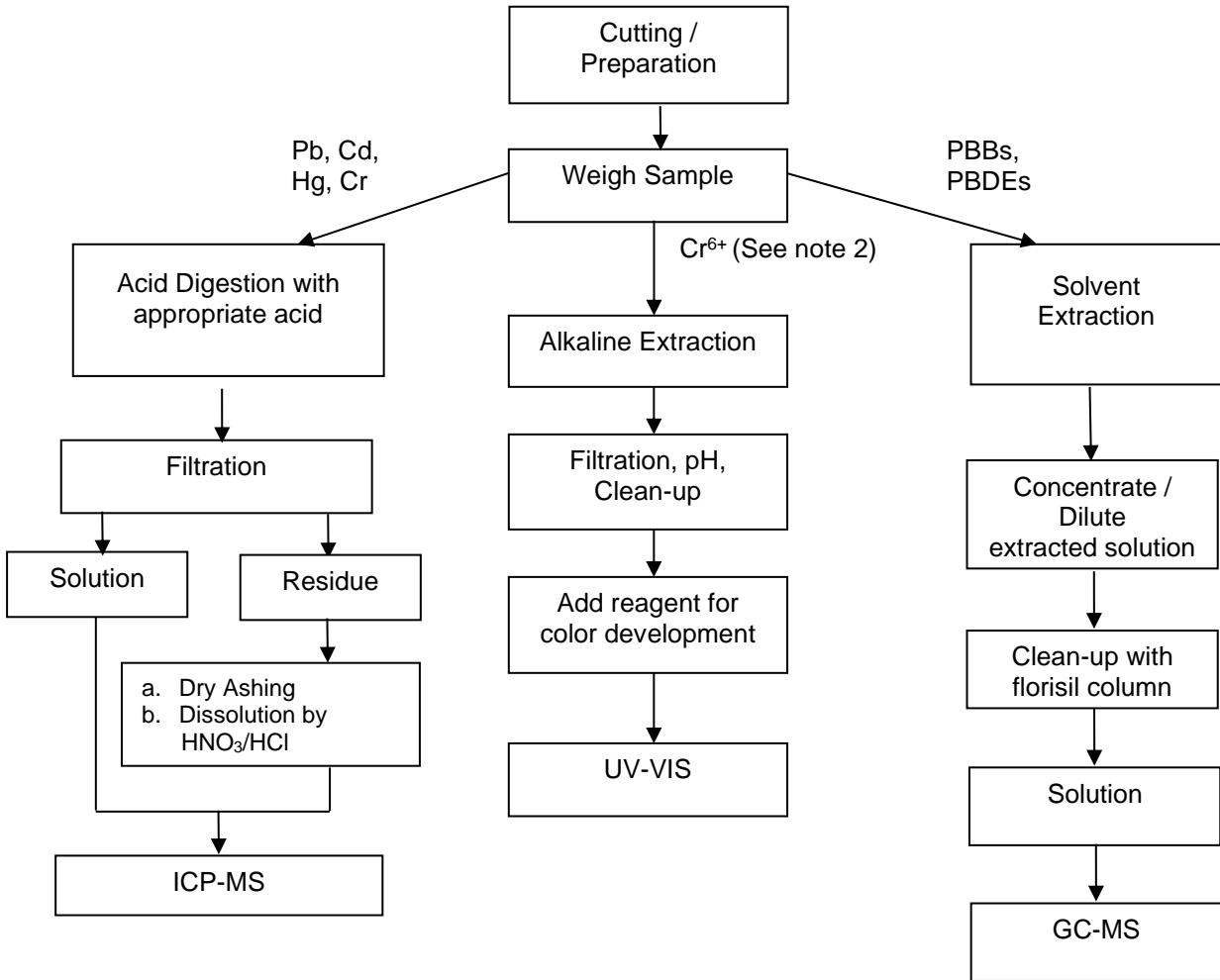
1. Bag 25 – Red/Grey Outer PVC Jacket
2. Bag 25 – Tin Plated Copper Conductor

**Note:**

- (a) mg/kg = ppm ; 0.1wt% = 1000ppm
- (b) ND= not detected
- (c) MDL = Method Detection Limit
- (d) - = not regulated
- (e) \* = Total Chromium analysis by ICP-MS and/or ICP-OES was not detected in submitted sample. Therefore, Hexavalent Chromium determination using UV-Visible Spectroscopy was not performed.
- (f) IEC 62321 series is equivalent to EN 62321 series  
[http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP\\_ORG\\_ID,FSP\\_LANG\\_ID:1258637,25](http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25)

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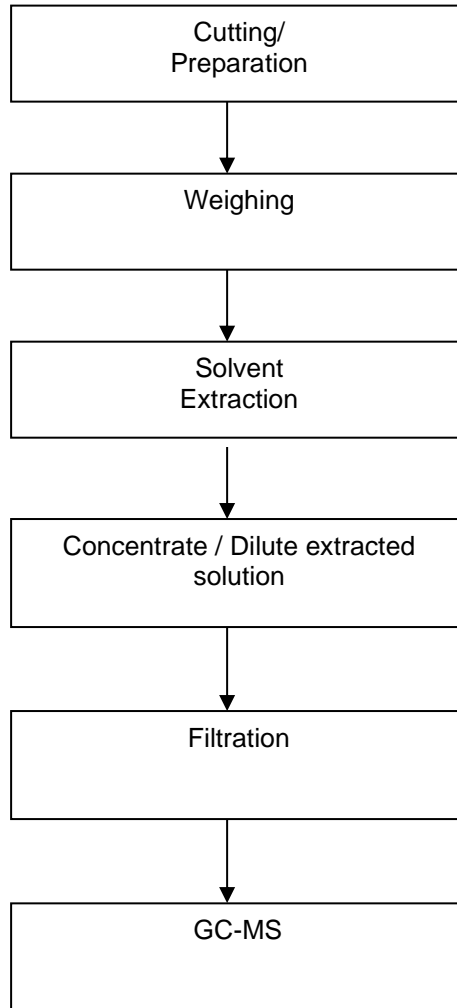
**Flowchart for RoHS:**



- Note : 1. The Cr, Cd, Pb and Hg contents test on polymeric samples were dissolved totally by pre-conditioning method according to above flow chart.  
 2. Cr<sup>6+</sup> is performed only when total Cr is detected

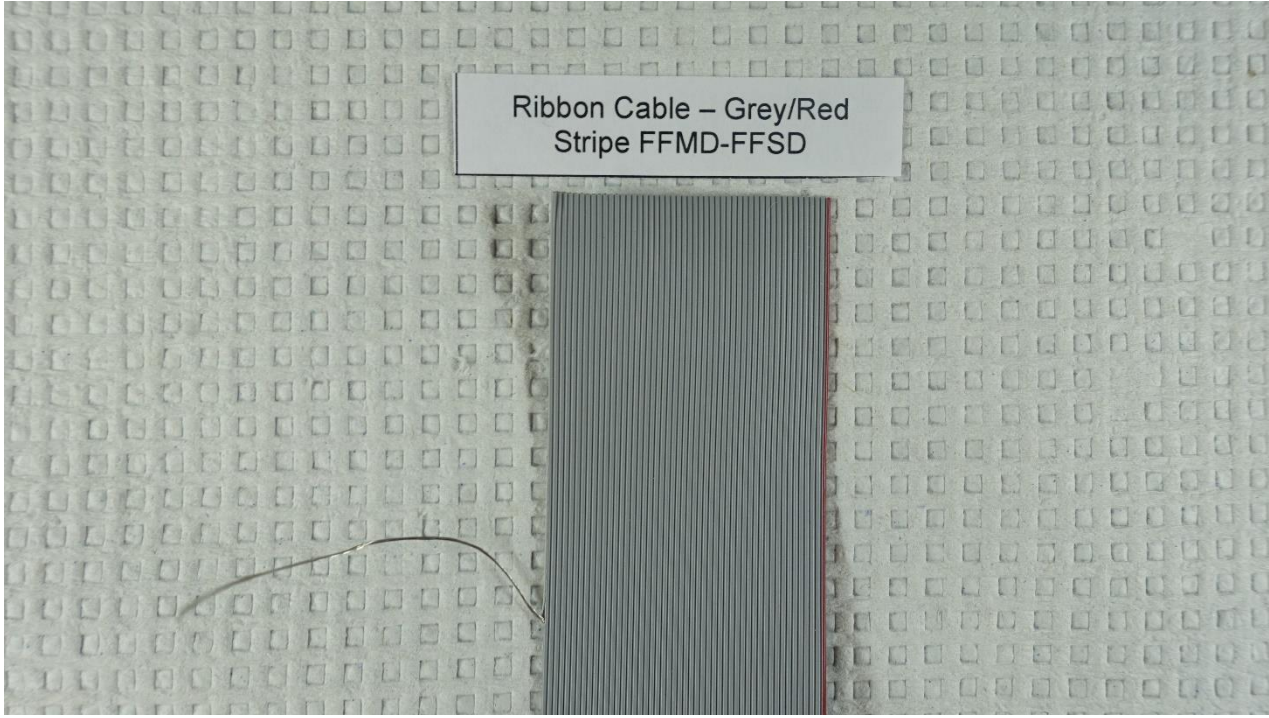
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Flowchart for Phthalates:



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Sample Photo(s):



SGS authenticates the photo(s) on the original report only

\*\*\* End of Report \*\*\*

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