



TEST REPORT

Report No. : PN:EE:1356003532

DATE : 04/10/2022

HANA EDM WIRE CO.,LTD
399/14 MOO13 SOI25/1 KINGKEAW RD,RACHATEWA,BANGPLEE,SAMUTPRAKARN 10540
IN CONTACT PERSON : ROHIT ZALTE

THE FOLLOWING SAMPLE(S) WAS/WERE SUBMITTED AND IDENTIFIED BY/ON BEHALF OF THE CUSTOMER AS

SAMPLE DESCRIPTION	Zinc Wire 2.00mm	
COIL NO	5500	
BATCH NO	22/136	
OEM	OTHERS	
COUNTRY OF ORIGIN	THAILAND	
SAMPLE RECD ON	26/08/2022	TESTING PERIOD :29/09/2022-01/10/2022
TEST(S) REQUESTED	ROHS 10E	

Test Description	Remarks
ROHS 10E	PASS

CONCLUSION : Based on the performed tests on selected part of submitted samples, the results of Lead, Mercury, Cadmium, Hexavalent chromium, Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs) and Phthalates such as Bis(2-ethylhexyl) phthalate (DEHP), Butyl benzyl phthalate (BBP), Dibutyl phthalate (DBP) and Diisobutyl phthalate (DIBP) comply with the limits as set by Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Per Pro SGS India Private Ltd

SACHIN M. VIBHUTE
Sr.Executive

Authorized Signatory
Email your Test Report Related Enquiries at feedback.trp@sgs.com

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Test Part Description:

Product No.	Sample No.	Material Description	Remarks
--	-	Zinc Wire 2.00mm Coil No 5500	--

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

Test Method:

- (1) With reference to IEC 62321-5:2013, determination of Cadmium by ICP-OES.
- (2) With reference to IEC 62321-5:2013, determination of Lead by ICP-OES.
- (3) With reference to IEC 62321-4:2017-07, determination of Mercury by ICP-OES.
- (4) With reference to IEC 62321-7-2:2017-03, determination of Hexavalent Chromium by Colorimetric Method using UV-Vis Spectrophotometer.
- (5) With reference to IEC 62321-6:2015-06, determination of PBBs and PBDEs by GC-MS.
- (6) With reference to IEC 62321-8:2017-03, determination of phthalates by GC-MS.

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Test result:

Test Item(s):	Unit	Results	Reporting Limit	Acceptance Criteria
Cadmium(Cd)	mg/kg	n.d.	<1	100
Lead (Pb)	mg/kg	n.d.	<1	1000
Mercury (Hg)	mg/kg	n.d.	<1	1000
Hexavalent Chromium (CrVI)	µg/cm ²	n.d.	0.10	-
Sum of PBBs	mg/kg	n.d.	-	1000
Monobromobiphenyl	mg/kg	n.d.	50	-
Dibromobiphenyl	mg/kg	n.d.	50	-
Tribromobiphenyl	mg/kg	n.d.	50	-
Tetrabromobiphenyl	mg/kg	n.d.	50	-
Hexabromobiphenyl	mg/kg	n.d.	50	-
Pentabromobiphenyl	mg/kg	n.d.	50	-
Heptabromobiphenyl	mg/kg	n.d.	50	-
Octabromobiphenyl	mg/kg	n.d.	50	-
Nonabromobiphenyl	mg/kg	n.d.	50	-
Decabromobiphenyl	mg/kg	n.d.	50	-
Sum of PBDEs	mg/kg	n.d.	-	1000
Monobromodiphenyl ether	mg/kg	n.d.	50	-
Dibromodiphenyl ether	mg/kg	n.d.	50	-
Tribromodiphenyl ether	mg/kg	n.d.	50	-
Tetrabromodiphenyl ether	mg/kg	n.d.	50	-
Pentabromodiphenyl ether	mg/kg	n.d.	50	-
Hexabromodiphenyl ether	mg/kg	n.d.	50	-
Heptabromodiphenyl ether	mg/kg	n.d.	50	-
Octabromodiphenyl ether	mg/kg	n.d.	50	-
Nonabromodiphenyl ether	mg/kg	n.d.	50	-
Decabromodiphenyl ether	mg/kg	n.d.	50	-
Phthalates	-	-	-	1000
Dibutyl phthalate (DBP)	mg/kg	n.d.	<1	-
Butyl benzyl phthalate (BBP)	mg/kg	n.d.	<1	-
Bis (2-ethylhexyl) phthalate (DEHP)	mg/kg	n.d.	<1	-
Diisobutyl Phthalates (DIBP)	mg/kg	n.d.	<1	-

Remarks:

- (1) 1mg/kg=0.0001%
- (2) n.d = not detected (<Reporting Limit)
- (3) - = not regulated

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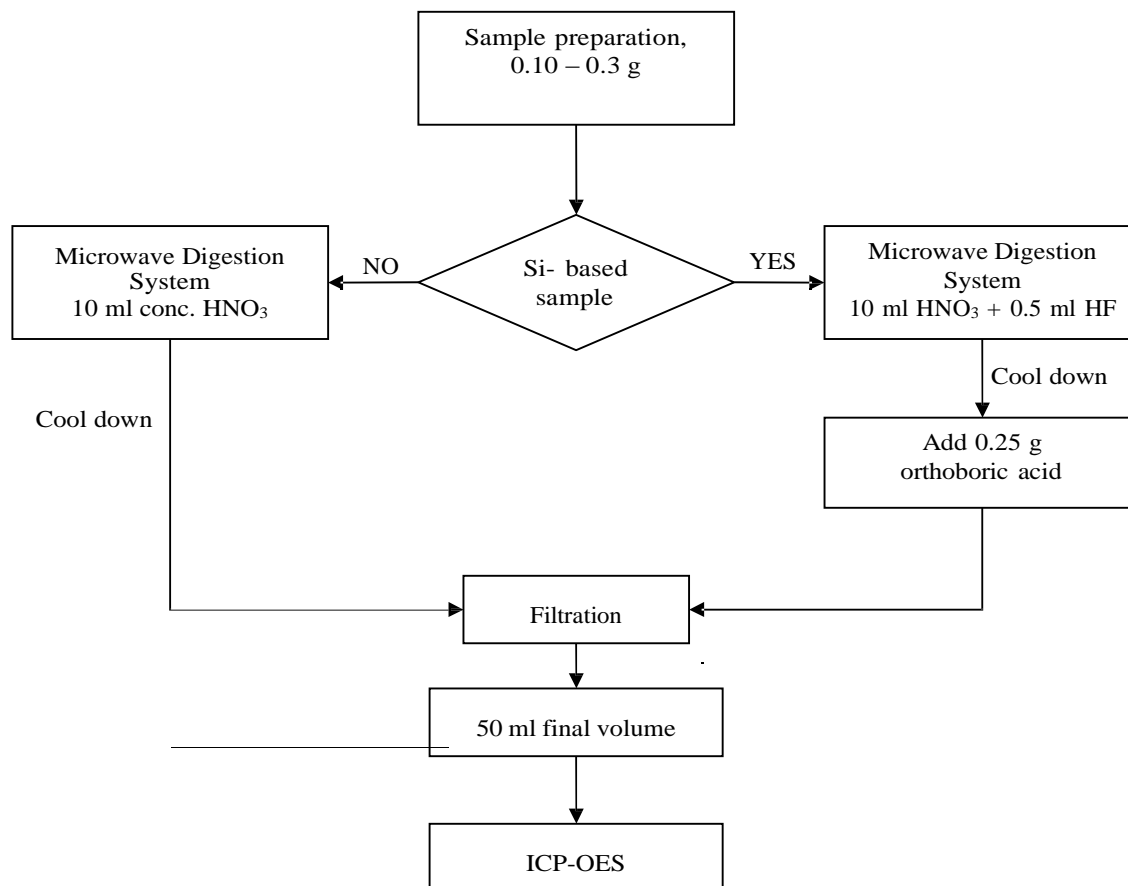
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Notes:

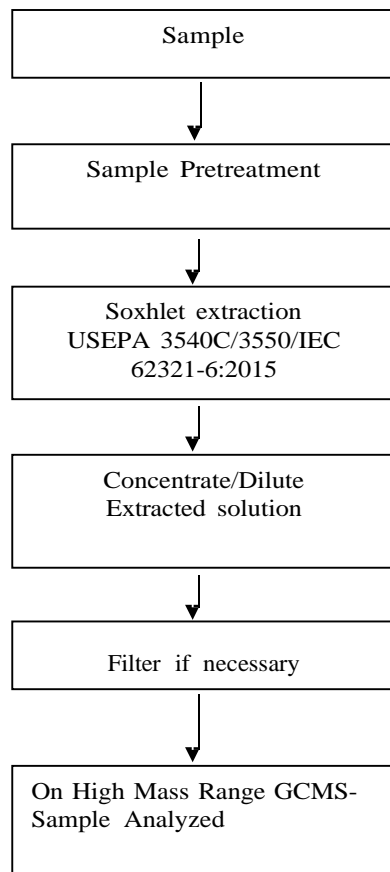
- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.
IEC 62321 series is equivalent to EN 62321 series

http://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25
- (2) The result of Hexavalent Chromium (Cr(VI)) is “n.d.” as the result of Chromium (Cr) is “n.d.”, and confirmation test of Hexavalent Chromium (Cr(VI)) is not required.
- (3) If the Chromium (Cr) content is greater than the Reporting Limit of Hexavalent Chromium (Cr(VI)), confirmation test of Hexavalent Chromium (Cr(VI)) is required.
- (4) 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.
- (5) The restriction of DEHP, BBP, DBP and DIBP shall apply to medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, from 22 July 2021.
- (6) The restriction of DEHP, BBP, DBP and DIBP shall not apply to cables or spare parts for the repair, the reuse, the updating of functionalities or upgrading of capacity of EEE placed on the market before 22 July 2019, and of medical devices, including in vitro medical devices, and monitoring and control instruments, including industrial monitoring and control instruments, placed on the market before 22 July 2021.
- (7) The restriction of DEHP, BBP and DBP shall not apply to toys which are already subject to the restriction of DEHP, BBP and DBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.

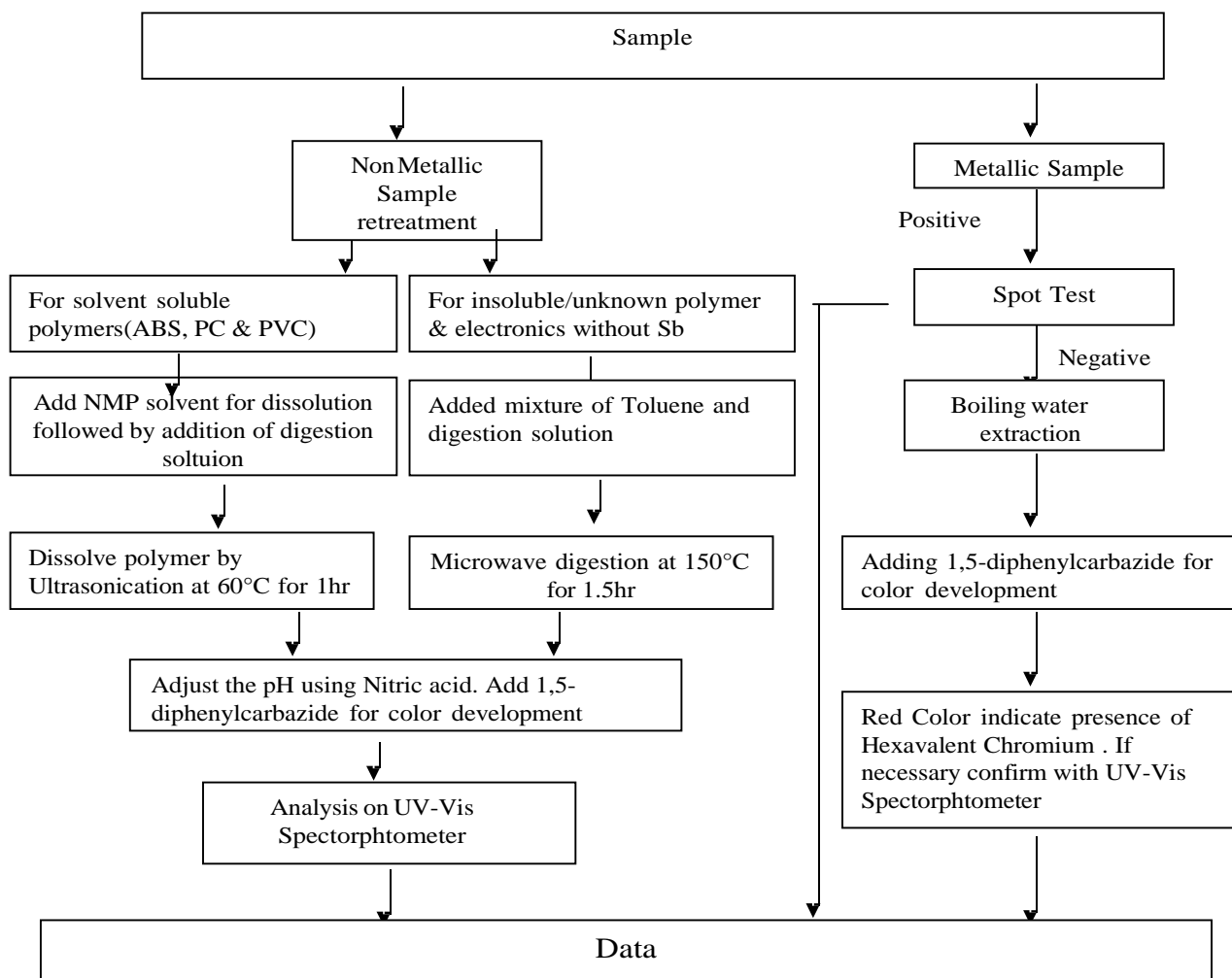
Process Flow for analysis of metal contents in plastics, metals and electronic components sample



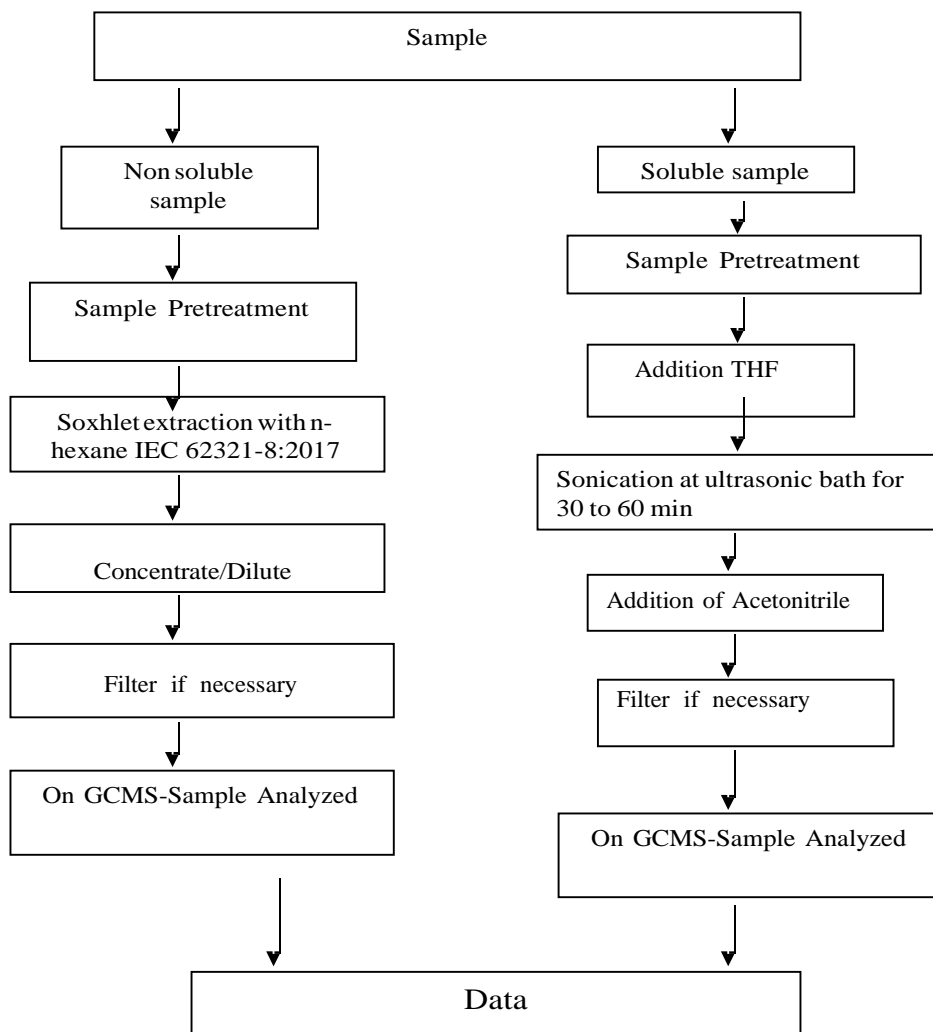
Process Flow for analysis of Flame Retardants in plastics, metals and electronic components sample



Process Flow for analysis of Hexavalent Chromium contents in plastics, metals and electronic components sample



Process Flow for analysis of Phthalates in Electrotechnical Product As per soxhelt Extraction or THE Extraction:



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Sample Photo:



SGS authenticate the photo on original report only

Note : Above test has been subcontracted.

*** End of Report ***

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