

Test Report No.: 48.400.23.1087.01-00/06

Rev.: 00

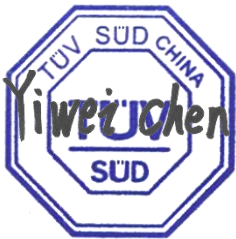
Dated: 2023-10-30



Applicant: Jiangsu Acrel Electrical Manufacturing. Co., Ltd.
Address: No. 5, Dongmeng Road, Nanzha Street, Jiangyin, Jiangsu, P. R. China
Attn: Han Zhonghua
Sample Description: Current transformer
Model No.: AKH-0.66 W-7
Sample Received Date: 2023-10-12
Test Period: 2023-10-12~2023-10-27
Test Location: TÜV SÜD Certification and Testing (China) Co., Ltd.
Shanghai Branch, SHA Chemical Lab.
Purpose of examination: Verification of RoHS (Restriction of Hazardous Substances) directive 2011/65/EU and its amendment (EU) 2015/863 on submitted samples
Test Results: Refer to following page(s)
Remark:
- The result relates only to the items tested.
- The reference model(s) was declared by client.
- The test sample(s) and item(s) was specified by client.

TÜV SÜD Certification and Testing (China) Co., Ltd.
TÜV SÜD Group
Prepared by:

Reviewed by:



Mr. Yiwei CHEN



Mr. Feng ZHANG

Disclaimer Measurement Uncertainty: Unless otherwise agreed upon, Pass or Fail verdicts are given base on the measured values without any considerations of measurement uncertainties. Please note, every test method has a measurement uncertainty which has been evaluated by the laboratory according to ISO/IEC 17025 requirements. By taking measurement uncertainties into account it might happen that measured values can neither be assessed as Pass nor as Fail. Any use for advertising purposes must be granted in writing. This test report may only be quoted in full. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production. For further details, please see testing and certification regulation, chapter A-3.4.

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Test Report No.: 48.400.23.1087.01-00/06

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SUMMARY OF TEST RESULTS

No.	Test Requested	Conclusion	Remarks
1.	Heavy Metal (Pb, Cd, Hg and Cr VI) Content	PASS	
2.	Polybrominated Biphenyls (PBBs) and Polybrominated Diphenyl Ethers (PBDEs) Content	PASS	
3.	Phthalates (DEHP, BBP, DBP and DIBP) Content	PASS	

TEC_WUX_F_25.05E - Rev. 00 2021-06-24





1. TESTED SUBJECT DESCRIPTION

Sample No.	Description (Material, colour)	Photograph/Location
01	Black hard plastic shell	
02	Silvery soft plastic label	
03	Blue hard plastic shell	
04	Green metal Iron core	
05	Gold copper alloy enameled wire	



TEC_WUX_F_25.05E - Rev. 00 2021-06-24



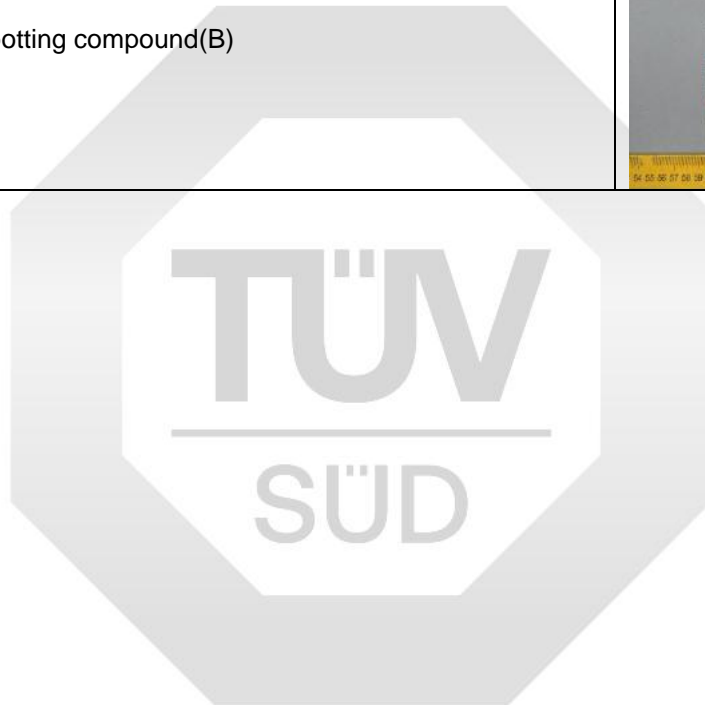
TEC_WUX_F_25.05E - Rev. 00 2021-06-24

Sample No.	Description (Material, colour)	Photograph/Location
06	Yellow soft plastic adhesive tape	
07	Yellow soft plastic wire jacket	
08	Red soft plastic wire jacket	
09	Silvery metal wire	
10	Black potting material(A+B)	



Sample No.	Description (Material, colour)	Photograph/Location
11	Yellow potting compound(A)	
12	Black potting compound(B)	

TEC_WUX_F_25.05E - Rev. 00 2021-06-24





2. TEST RESULT(S)

2.1 SCREENING TEST

Test method: With reference to EN 62321-1:2013, EN IEC 62321-2:2021, EN 62321-3-1:2014 and EN 62321-8:2017.

For Heavy Metals and Flame Retardants, analyzed by Energy Dispersive X-ray Fluorescence Spectrometer (XRF); for phthalates, analyzed by Gas Chromatography and Mass Spectrometer (GC-MS).

Sample No.	Heavy Metals and Flame Retardants					Phthalates			
	Cd	Pb	Hg	Cr	Br	DEHP	BBP	DBP	DIBP
01	BL	BL	BL	BL	Inc. ^(a)	BL	BL	BL	BL
02	BL	BL	BL	BL	BL	BL	BL	BL	BL
03	BL	BL	BL	BL	Inc. ^(a)	BL	BL	BL	BL
04	BL	BL	BL	BL	NA	NA	NA	NA	NA
05	BL	BL	BL	BL	NA	NA	NA	NA	NA
06	BL	BL	BL	BL	BL	BL	BL	BL	BL
07	BL	BL	BL	BL	BL	BL	BL	BL	BL
08	BL	BL	BL	BL	BL	BL	BL	BL	BL
09	BL	BL	BL	BL	NA	NA	NA	NA	NA
10	BL	BL	BL	BL	Inc. ^(a)	BL	BL	BL	BL
11	BL	BL	BL	BL	BL	BL	BL	BL	BL
12	BL	BL	BL	BL	BL	BL	BL	BL	BL

TEC_WUX_F_25.05E - Rev. 00 2021-06-24



Remark:

- "BL" denotes below limit
- "OL" denotes over limit
- "Inc." denotes inconclusive
- "NA" denotes not applicable
- "(a)" denotes further confirmation test was conducted, results are listed in 2.2 and 2.3.
- XRF screening limits in mg/kg for regulated elements in various matrices

ELEMENT	POLYMER		
	BL	INCONCLUSIVE	OL
Cd	$X \leq (70-3\sigma)$	$(70-3\sigma) < X < (130+3\sigma)$	$X \geq (130+3\sigma)$
Pb	$X \leq (700-3\sigma)$	$(700-3\sigma) < X < (1300+3\sigma)$	$X \geq (1300+3\sigma)$
Hg	$X \leq (700-3\sigma)$	$(700-3\sigma) < X < (1300+3\sigma)$	$X \geq (1300+3\sigma)$
Br	$X \leq (300-3\sigma)$	$X > (300-3\sigma)$	NA
Cr	$X \leq (700-3\sigma)$	$X > (700-3\sigma)$	NA

ELEMENT	METAL		
	BL	INCONCLUSIVE	OL
Cd	$X \leq (70-3\sigma)$	$(70-3\sigma) < X < (130+3\sigma)$	$X \geq (130+3\sigma)$
Pb	$X \leq (700-3\sigma)$	$(700-3\sigma) < X < (1300+3\sigma)$	$X \geq (1300+3\sigma)$
Hg	$X \leq (700-3\sigma)$	$(700-3\sigma) < X < (1300+3\sigma)$	$X \geq (1300+3\sigma)$
Cr	$X \leq (700-3\sigma)$	$X > (700-3\sigma)$	NA

ELEMENT	COMPLEX MATERIAL		
	BL	INCONCLUSIVE	OL
Cd	$X \leq (50-3\sigma)$	$(50-3\sigma) < X < (150+3\sigma)$	$X \geq (150+3\sigma)$
Pb	$X \leq (500-3\sigma)$	$(500-3\sigma) < X < (1500+3\sigma)$	$X \geq (1500+3\sigma)$
Hg	$X \leq (500-3\sigma)$	$(500-3\sigma) < X < (1500+3\sigma)$	$X \geq (1500+3\sigma)$
Br	$X \leq (250-3\sigma)$	$X > (250-3\sigma)$	NA
Cr	$X \leq (500-3\sigma)$	$X > (500-3\sigma)$	NA

- Screening limits in mg/kg for regulated phthalates in various matrices

PHthalATES	BL	INCONCLUSIVE
DEHP	$X < 600$	$X \geq 600$
BBP	$X < 600$	$X \geq 600$
DBP	$X < 600$	$X \geq 600$
DIBP	$X < 600$	$X \geq 600$

TEC_WUX_F_25.05E - Rev. 00 2021-06-24



2.3 POLYBROMINATED BIPHENYLS (PBBs) AND POLYBROMINATED DIPHENYL ETHERS (PBDEs) CONTENT

Test Method: With reference to EN 62321-6:2015, extracted by toluene and analyzed by Gas Chromatography and Mass Spectrometer (GC-MS). [Reporting Limit : 5 mg/kg]

Test Item		Result(s) [mg/kg]			RoHS Requirement [mg/kg]
		01	03	10	
PBBs	Monobromobiphenyl	<5	<5	<5	-
	Dibromobiphenyl	<5	<5	<5	-
	Tribromobiphenyl	<5	<5	<5	-
	Tetrabromobiphenyl	<5	<5	<5	-
	Pentabromobiphenyl	<5	<5	<5	-
	Hexabromobiphenyl	<5	<5	<5	-
	Heptabromobiphenyl	<5	<5	<5	-
	Octabromobiphenyl	<5	<5	<5	-
	Nonabromobiphenyl	<5	<5	<5	-
	Decabromobiphenyl	<5	<5	<5	-
	Sum of detected PBBs	<50	<50	<50	1000
PBDEs	Monobromodiphenyl ether	<5	<5	<5	-
	Dibromodiphenyl ether	<5	<5	<5	-
	Tribromodiphenyl ether	<5	<5	<5	-
	Tetrabromodiphenyl ether	<5	<5	<5	-
	Pentabromodiphenyl ether	<5	<5	<5	-
	Hexabromodiphenyl ether	<5	<5	<5	-
	Heptabromodiphenyl ether	<5	<5	<5	-
	Octabromodiphenyl ether	<5	<5	<5	-
	Nonabromodiphenyl ether	<5	<5	<5	-
	Decabromodiphenyl ether	<5	<5	<5	-
	Sum of detected PBDEs	<50	<50	<50	1000

Remark:

- "mg/kg" denotes milligram per kilogram
- "<" denotes less than

TEC_WUX_F_25.05E - Rev. 00 2021-06-24

Test Report No.: 48.400.23.1087.01-00/06

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2.4 PHTHALATES (DEHP, BBP, DBP and DIBP) CONTENT TEST

Test method: With reference to EN 62321-8:2017, extracted by organic solvent and analyzed by Gas Chromatography and Mass Spectrometer (GC-MS). [Reporting Limit : 50 mg/kg]

Test Item	Result(s) [mg/kg]	RoHS Requirement [mg/kg]
	10	
Di-iso-butyl Phthalate (DIBP)	<50	<1000
Di-butyl Phthalate (DBP)	211	<1000
Butyl-benzyl Phthalate (BBP)	<50	<1000
Di-(2-ethyl-hexyl) Phthalate (DEHP)	<50	<1000

Remark:

- "mg/kg" denotes milligram per kilogram
- "<" denotes less than



TEC_WUX_F_25.05E - Rev. 00 2021-06-24


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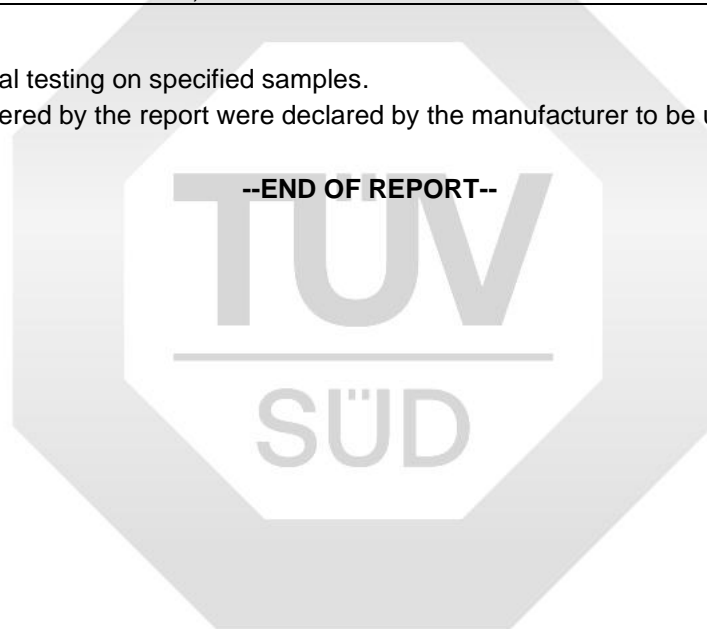


APPENDIX I: Product Model

Product: Current transformer	Test model: AKH-0.66 W-7
	
Additional models: AKH-0.66 W-8, AKH-0.66 W-11, AKH-0.66 W-12, AKH-0.66 W-20, AKH-0.66 W-30, AKH-0.66 W-35, AKH-0.66 W-45, AKH-0.66 W-9(A/B), AKH-0.66 W-15(A/B), AKH-0.66 W-12N/W-9N, AKH-0.66 W-30N/20N, AKH-0.66 Z-3*Φ15, AKH-0.66 Z-3*Φ10	

Remark:

1. The report covers material testing on specified samples.
2. The tested materials covered by the report were declared by the manufacturer to be used on the additional model.



--END OF REPORT--
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