



# Test Report

NO.: ASZ080402021C

Date: Apr 12, 2008

Page 1 of 8

Customer: ELMARK INDUSTRIES SC

Address: 2 "DOBRUDJA" BOULEVARD DOBRICH, BULGARIA

Report on the submitted sample said to be

Sample name: Thermal overload relay

Model: LT2-E1301, 02, 03, 04, 05, 06, 07, 08, 10, 12, 14, 16, 21, 22, 53 E2353, 55, E3355, 57, 59, 63, 65

Item/Lot No.: /

Material: /

Buyer: /

Supplier: /

Manufacturer: /

Sample received date: Apr 02, 2008

Testing period: From Apr 02, 2008 to Apr 07, 2008

### Testing Requested

As specified by client, to determine the Lead, Cadmium, Mercury, Hexavalent Chromium, PBB & PBDE content in the submitted sample in accordance with Directive 2002/95/EC (RoHS).

### Testing method:

With reference to IEC 62321, 111/95/CDV

Testing Item	Pretreatment method	Measuring instrument	MQL
Lead (Pb)	IEC 62321, section 8/9	ICP-OES	2mg/kg
Cadmium (Cd)	IEC 62321, section 8/9	ICP-OES	2 mg/kg
Mercury (Hg)	IEC 62321, section 7	CV-AAS	2 mg/kg
Chromium (Cr VI)	IEC 62321, Annex B/C	UV-VIS	2 mg/kg 0.02 mg/kg*
PBBs/ PBDEs	IEC 62321, Annex A	GC-MS	5 mg/kg

### Note:

- \* 0.02 mg/kg refers to the MQL of sample extraction liquid.

### Conclusion:

-When tested as specified the submitted sample complied with the requirements of commission Decision of 18 Aug 2005 amending Directive 2002/95/EC notified under document 2005/618/EC

\*\*\*\*\*FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S)\*\*\*\*\*

Signed for AOV Ltd.

Written by

Inspected by

Approved by

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AOV Testing Technology Co., Ltd.

Add: AOV building, Xueyuan Road East, university city, Shenzhen (Tanglang Village, Xili Town, Nanshan District)  
Tel: +86(0)755 8600 8000 Fax: +86(0)755 8600 8282 Http: //www.aovt.com

# Test Report

NO.: ASZ0804020201C

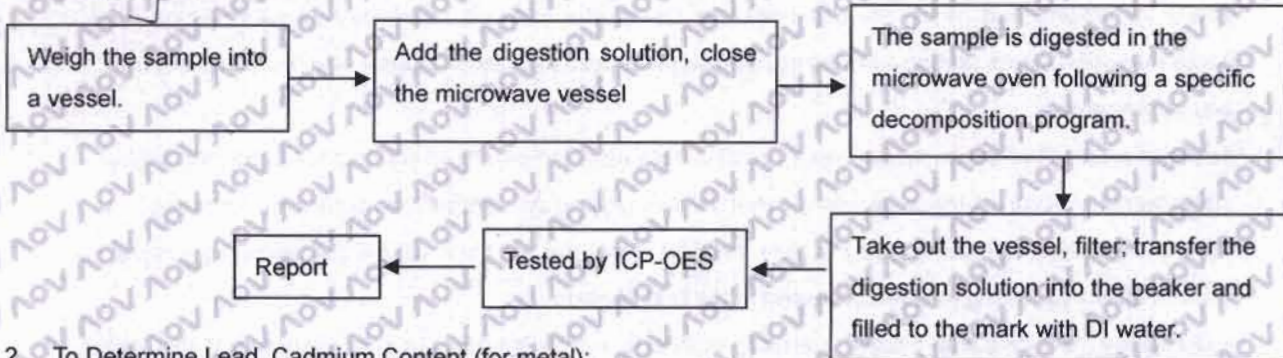
Date: Apr 12, 2008

Page 2 of 8

## Test Flow:

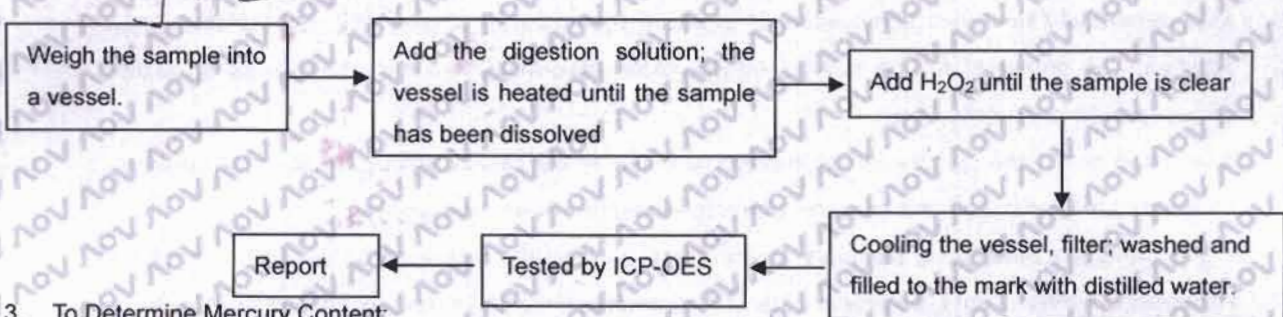
1. To Determine Lead, Cadmium Content (for Polymer);

Tested by: *JURE*



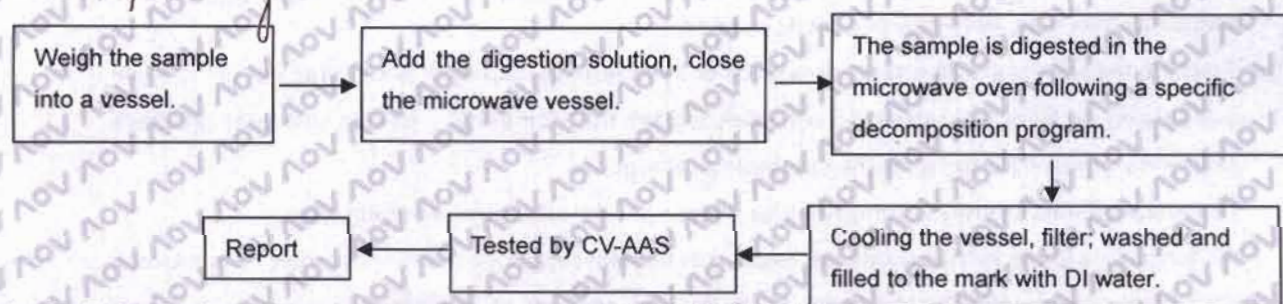
2. To Determine Lead, Cadmium Content (for metal):

Tested by: *JURE*



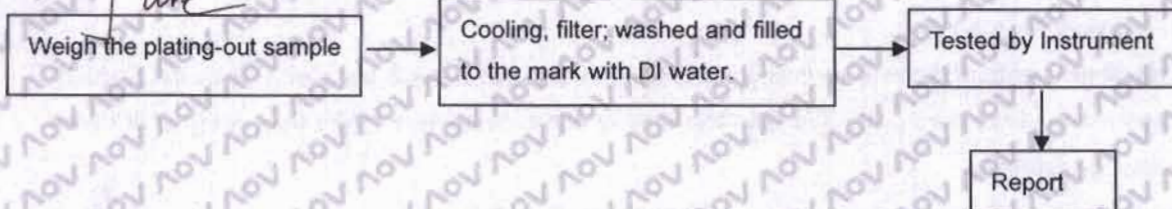
3. To Determine Mercury Content:

Tested by: *ROSEY*



4. To Determine Lead, Cadmium and Mercury Content: (for plating layer)

Tested by: *JURE*



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# Test Report

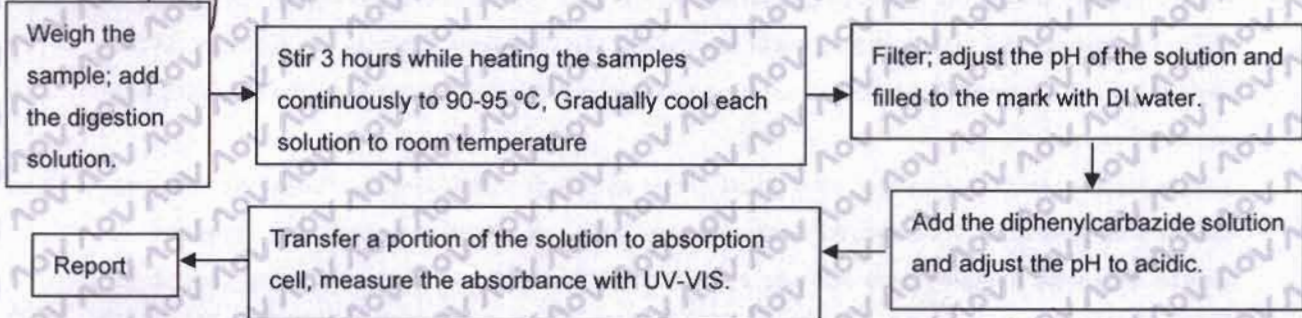
NO.: ASZ0804020201C

Date: Apr 12, 2008

Page 3 of 8

## 5. To Determine Hexavalent Chromium Content (for Polymer):

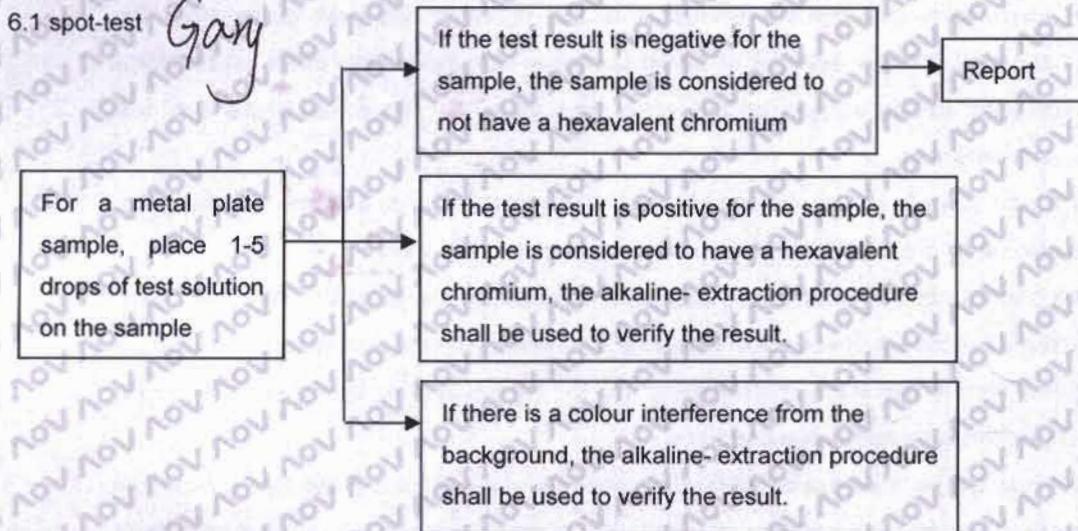
Tested by: *Gary*



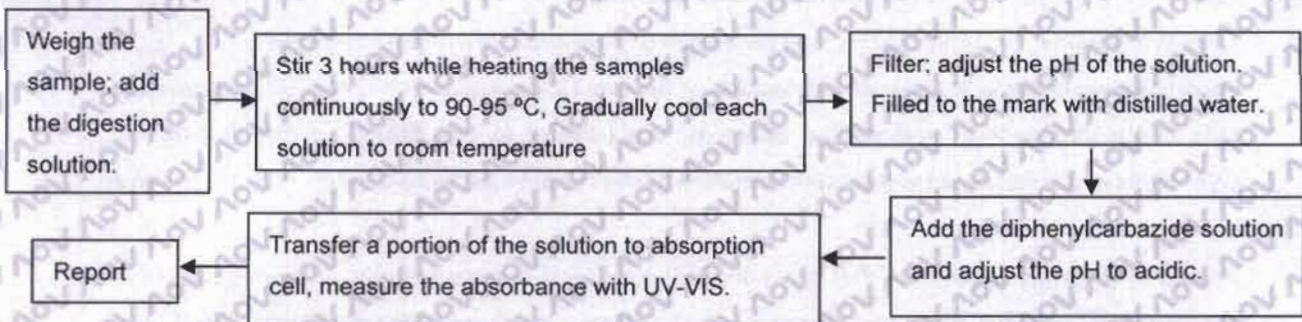
## 6. To Determine Hexavalent Chromium Content in metals:

Tested by:

6.1 spot-test *Gary*



## 6.2 alkaline- extraction Method



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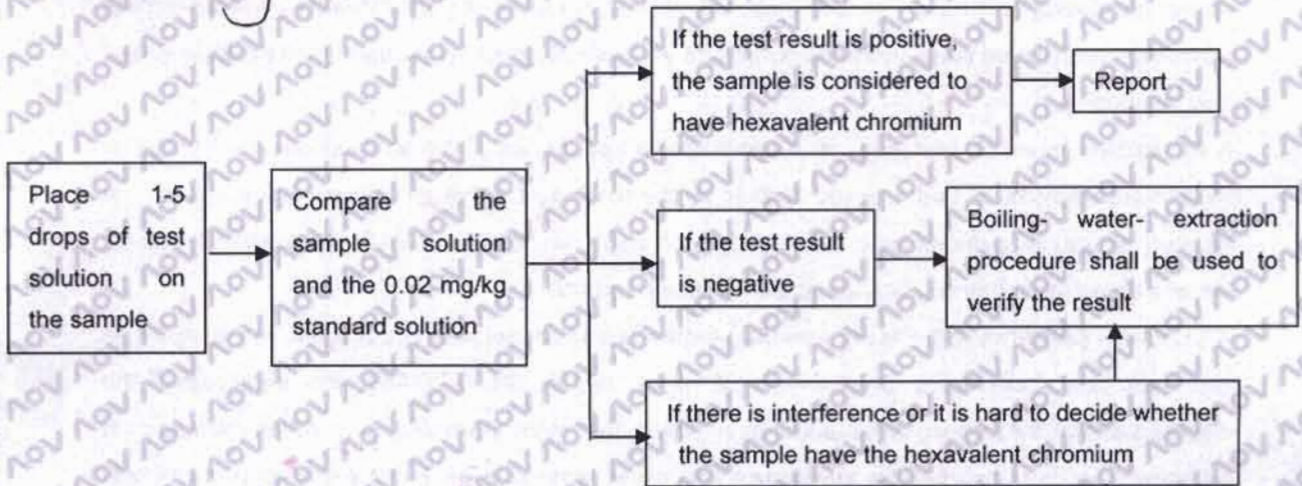


7. To Determine Hexavalent Chromium Content in colorless and colored chromate coating on metals:

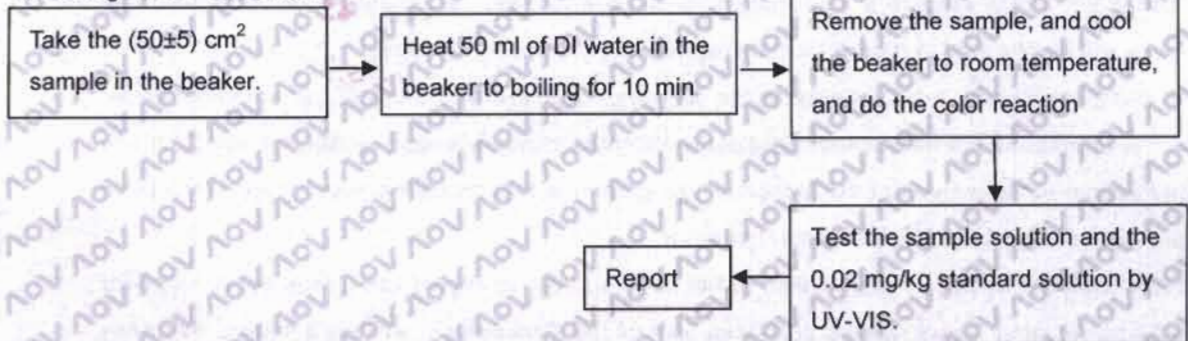
Tested by:

7.1 spot-test

*Gary*



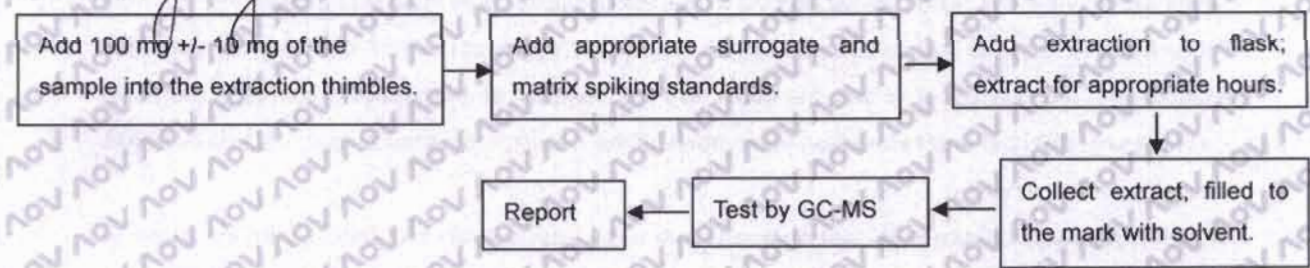
7.2 boiling- water- extraction



8. To Determine PBBs/PBDEs Content:

Tested by:

*Young*



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# Test Report

NO.: ASZ0804020201C

Date: Apr 12, 2008

Page 5 of 8

## Test Results:

Item	Unit	RoHS Limit	1	2	3	4	5
Lead (Pb)	mg/kg	1000	N.D.	N.D.	67.1	214.1	17.7
Cadmium (Cd)	mg/kg	100	N.D.	N.D.	N.D.	6.1	N.D.
Mercury (Hg)	mg/kg	1000	N.D.	N.D.	N.D.	N.D.	N.D.
Chromium(CrVI) by spot test	/	/	/	Negative	Negative	Negative	Negative
Chromium(CrVI) by boiling water extraction	/	/	/	/	/	/	/
Chromium (CrVI)	mg/kg	1000	N.D.	N.D.	N.D.	N.D.	N.D.

Item	Unit	RoHS Limit	6	7	8	9
Lead (Pb)	mg/kg	1000	N.D.	125.4	N.D.	N.D.
Cadmium (Cd)	mg/kg	100	N.D.	N.D.	N.D.	N.D.
Mercury (Hg)	mg/kg	1000	N.D.	N.D.	N.D.	N.D.
Chromium(CrVI) by spot test	/	/	Negative	Negative	Negative	Negative
Chromium(CrVI) by boiling water extraction	/	/	/	/	/	Negative
Chromium (CrVI)	mg/kg	1000	N.D.	N.D.	N.D.	/

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Flame Retardants	Unit	RoHS Limit	1
PBBs	mg/kg	1000	--
MonoBB	mg/kg	/	N.D.
DiBB	mg/kg	/	N.D.
TriBB	mg/kg	/	N.D.
TetraBB	mg/kg	/	N.D.
PentaBB	mg/kg	/	N.D.
HexaBB	mg/kg	/	N.D.
HeptaBB	mg/kg	/	N.D.
OctaBB	mg/kg	/	N.D.
NonaBB	mg/kg	/	N.D.
DecaBB	mg/kg	/	N.D.
PBDEs	mg/kg	1000	--
MonoBDE	mg/kg	/	N.D.
DiBDE	mg/kg	/	N.D.
TriBDE	mg/kg	/	N.D.
TetraBDE	mg/kg	/	N.D.
PentaBDE	mg/kg	/	N.D.
HexaBDE	mg/kg	/	N.D.
HeptaBDE	mg/kg	/	N.D.
OctaBDE	mg/kg	/	N.D.
NonaBDE	mg/kg	/	N.D.
DecaBDE	mg/kg	/	N.D.*

**Specimen Description:**

No.	Sample name	Material
1	Bakelite piece	/
2	Double metal	/
3	Electric staff	/
4	Copper piece	/
5	Spring	/
6	Resistance silk	/
7	Silver spot	/
8	Screw	/
9	Screw plating layer	Zinc

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## Test Report

NO.: ASZ0804020201C

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Page 7 of 8

### Note:

- Specimens, which requested to determine Cadmium, Mercury and Lead Content, have been dissolved completely.
- mg/kg=ppm
- N.D.=not detected(<MQL)
- MQL=Method Quantitation Limit
- Spot-test:  
Negative=Absence of Cr(VI);
- \*(Deca BDE) In polymeric applications is exempted by commission Decision of 13 Oct 2005 amending directive 2002/95/EC notified under document 2005/717/EC  
(The tested sample should be further verified by boiling-water-extraction method if the spot test result is uncertain or negative.)
- Photo is included

Photographs of Samples



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### Photographs of Samples



Thermal overload relay

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

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