



## ICP Test Report Certification Packet

Company name: Littelfuse, Inc.

Product Series: Midget Fuse

Product #: FLQ020 Series

Issue Date: August 20, 2010

It is hereby certified by Littelfuse, Inc. that there is neither RoHS (EU Directive 2002/95/EC)-restricted substance nor such use, for materials to be used for unit parts, for packing/packaging materials, and for additives and the like in the manufacturing processes.

In addition, it is hereby reported to you that the parts and sub-materials, the materials to be used for unit parts, the packing/packaging materials, and the additives and the like in the manufacturing processes, are all composed of the following components.

Issued by:

A handwritten signature in black ink, appearing to read "Jenny S. Dinglasan".

<Global EHS Coordinator>

(1) Parts, sub-materials and unit parts

This document covers the FLQ RoHS-Compliant series products manufactured by Littelfuse, Inc.

< Raw Materials Used

Please see Table 1

(2) The ICP data on all measurable substances

Please see appropriate pages as identified in Table 1

Remarks :

**Table 1: List of Raw Materials covered by this report**

<b>Total Parts</b>	<b>Raw Material Part Number</b>	<b>Raw Material Description</b>	<b>Page(s)</b>
1	090169	Filler-Silica Sand	3-12
2	692532	Solder	3-12
3	039xxx	Body-Melamine	13-20
4	685xxx	Element Pure Ag	21-28

**RESULTS REPORT**

**INTERTEK TESTING SERVICES**

**DE MEXICO SA DE CV**

**LABORATORIO CD. DE MEXICO**

DELIVER TO:

Littelfuse, S.A. de C.V.  
Blvd. Fausto Z Mtz. 1800, Col. Magisterio Secc. 38, Piedras  
Negras, Coahuila, C.P. 26070

ATTENTION: Ing. Mario Alberto Falcón

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1ª. Emisión Junio 2005, 1ª Revisión Junio 26, 2009.

ILTA/003/GENS-F8

**Intertek Testing Services de México, S.A. de C.V.**

Blvd. Manuel Ávila Camacho No. 182 Col. Lomas de Chapultepec  
C.P. 11650, México, D.F. Tel.: 50912150 Fax: 55407863

[www.intertek.com](http://www.intertek.com)

001



Report No.: MX10-0726-MOD – Serie KLDL

Date : 2010-05-07

## TEST REPORT

### APPLICANT

Littelfuse, S.A. de C.V.

Blvd. Fausto Z Mtz. 1800, Col. Magisterio Secc. 38, Piedras Negras, Coahuila, C.P. 26070

Ing. Mario Alberto Falcón

### SAMPLE DESCRIPTION

One (1) group of submitted samples said to be :

Sample Description	NP
	19) Serie KLDL Element 082649
	20) Serie KLDL Cap 923-080
	21) Serie KLDL Rejection Cap 923-088
	22) Serie KLDL Element 082149
Item No.	23) Serie KLDL Cap Solder 927-293
	24) Serie KLDL Disc 882-363-001
	25) Serie KLDL Solder 692532
	26) Serie KLDL/FLQ Element 082384
	27) Serie KLDL Filler silica 090169

Country of Origin	NP
Buyer's Name	NP
Supplier's Name	NP
Date sample received	2010-03-25
Testing period	2010-03-29 to 2010-04-23

\*\*\*\*\*

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002

## TEST CONDUCTED

As requested by the applicant, for details please refer to attached pages.

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## CONCLUSION

Testing item	Conclusion	Failed component	Failed result
Serie KLDL Element 082649	Pass See Result summary	---	---
Serie KLDL Cap 923-080	Pass See Result summary	---	---
Serie KLDL Rejection Cap 923-088	failed See Result summary	Cadmium Lead	2284 mg/kg 12380,0 mg/kg
Serie KLDL Element 082149	Pass See Result summary	---	---
Serie KLDL Cap Solder 927-293	Pass See Result summary	---	---
Serie KLDL Disc 882-363-001	Pass See Result summary	---	---
Serie KLDL Solder 692532	Pass See Result summary	---	---
Serie KLDL/FLQ Element 082384	Pass See Result summary	---	---
Serie KLDL Filler silica 090169	Pass See Result summary	---	---

\*\*\*\*\*

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003

### TEST CONDUCTED

One (1) group of submitted samples said to be :

- 19) Serie KLDR Element 082649
- 20) Serie KLDR Cap 923-080
- 21) Serie KLDR Rejection Cap 923-088
- 22) Serie KLDR Element 082149
- 23) Serie KLDR Cap Solder 927-293
- 24) Serie KLDR Disc 882-363-001
- 25) Serie KLDR Solder 692532
- 26) Serie KLDR/FLQ Element 082384
- 27) Serie KLDR Filler silica 090169

### TEST RESULT SUMMARY FOR RoHS DIRECTIVE :

TESTING ITEM	Ω RESULT (ppm)				Limit
	(19)	(20)	(21)	(22)	
Cadmium (Cd) content	ND	ND	2284,0	ND	0,01% (100 ppm)
Mercury (Hg) content	ND	ND	ND	ND	0,1% (1000 ppm)
Lead (Pb) content	ND	1,106	12380,0	ND	0,1% (1000 ppm)
Chromium (VI) (Cr <sup>6+</sup> )	ND	ND	ND	ND	0,1% (1000 ppm)

TESTING ITEM	Ω RESULT (ppm)			Limit
	(23)	(24)	(25)	
Cadmium (Cd) content	ND	ND	ND	0,01% (100 ppm)
Mercury (Hg) content	0,0776	0,2297	ND	0,1% (1000 ppm)
Lead (Pb) content	212,2	65,24	142,2	0,1% (1000 ppm)
Chromium (VI) (Cr <sup>6+</sup> )	ND	ND	ND	0,1% (1000 ppm)

TESTING ITEM	Ω RESULT (ppm)		Limit
	(26)	(27)	
Cadmium (Cd) content	ND	ND	0,01% (100 ppm)
Mercury (Hg) content	ND	ND	0,1% (1000 ppm)
Lead (Pb) content	ND	ND	0,1% (1000 ppm)
Chromium (VI) (Cr <sup>6+</sup> )	ND	ND	0,1% (1000 ppm)

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ppm = parts per million based on dry weight of sample.

$\mu\text{g}/\text{cm}^2$  = microgram per square centimeter.

mg/kg WITH 50 $\text{cm}^2$  = milligram per kilogram with 50 square centimeter.

< = less than.

ND = Not detected.

The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.

These Accreditations only apply for the methods listed in such. Not accredited under EMA  $\Omega$ .

Prepared and checked by :

For Intertek

*Vern Lopez del  
cord-de-ano*

Laboratory Manager

The Official Mexican Standard NOM-008-SCFI-1993 establishes like separator decimal the comma (,).

NOTE : DecaBDE IN POLYMERIC APPLICATIONS IS EXEMPTED ACCORDING TO ROHS DIRECTIVE AMENDMENT 2005/717/EC.

# = ACCORDING TO IEC 62321, A POSITIVE RESULT INDICATES THE PRESENCE OF Cr(VI) COATING. IT IS THE Cr(VI) CONCENTRATION DETECTED IN THE BOILING-WATER-EXTRACTION SOLUTION AND SHOULD NOT BE INTERPRETED AS THE Cr(VI) CONCENTRATION IN THE COATING LAYER OF THE SAMPLE.

REMARK: AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX10-0726-19 WERE TESTED TOGETHER.

REMARK: AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX10-0726-20 WERE TESTED TOGETHER.

REMARK: AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX10-0726-21 WERE TESTED TOGETHER.

REMARK: AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX10-0726-22 WERE TESTED TOGETHER.

REMARK: AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX10-0726-23 WERE TESTED TOGETHER.

REMARK: AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX10-0726-24 WERE TESTED TOGETHER.



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005

REMARK: AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX10 726-25 WERE TESTED TOGETHER.

REMARK: AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX10 726-26 WERE TESTED TOGETHER.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX10 726-27 WERE TESTED TOGETHER.

#### Test method :

Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
Chromium VI (Cr <sup>6+</sup> ) content	With reference to USEPA 3060, by EPA 7196	QHU2009-3p63	2010-04-06	MELAJLHS, MTCM	2,0

No. de Muestra	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
19	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 7420	MET2010-4p31	2010-04-23	VLM	9,80
20	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 7420	MET2010-4p31	2010-04-23	VLM	2,34
21	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 7420	MET2010-4p31	2010-04-23	VLM	1,81
22	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 7420	MET2010-4p31	2010-04-23	VLM	7,25
23	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 7420	MET2010-4p31	2010-04-23	VLM	8,33
24	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 7420	MET2010-4p31	2010-04-23	VLM	10,00
25	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 7420	MET2010-4p31	2010-04-23	VLM	8,93
26	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 7420	MET2010-4p31	2010-04-23	VLM	8,06
27	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 7420	MET2010-4p31	2010-04-23	VLM	7,81

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<u>No. de Muestra</u>	<u>Testing item</u>	<u>Ω Testing method</u>	<u>Quality control Batch:</u>	<u>Analysis Date:</u>	<u>Analyzed By:</u>	<u>Reporting limit ppm</u>
19	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-4p31	2010-04-05	DCL,JMR	1,961
20	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-4p31	2010-04-05	DCL,JMR	0,467
21	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-4p31	2010-04-05	DCL,JMR	0,362
22	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-4p31	2010-04-05	DCL,JMR	1,449
23	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-4p31	2010-04-05	DCL,JMR	1,66
24	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-4p31	2010-04-05	DCL,JMR	2,00
25	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-4p31	2010-04-05	DCL,JMR	1,785
26	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-4p32	2010-04-05	DCL,JMR	1,612
27	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-4p32	2010-04-05	DCL,JMR	1,562

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<u>No. de Muestra</u>	<u>Testing item</u>	<u>Ω Testing method</u>	<u>Quality control Batch:</u>	<u>Analysis Date:</u>	<u>Analyzed By:</u>	<u>Reporting limit ppm</u>
19	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-4p35	2010-04-01	UBM	0,0806
20	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-4p35	2010-04-01	UBM	0,0235
21	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-4p35	2010-04-01	UBM	0,0183
22	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-4p35	2010-04-01	UBM	0,0806
23	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-4p35	2010-04-01	UBM	0,0769
24	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-4p35	2010-04-01	UBM	0,0820
25	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-4p35	2010-04-01	UBM	0,0833
26	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-4p36	2010-04-01	UBM	0,0833
27	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-4p36	2010-04-01	UBM	0,0833

\*\*\*\*\*

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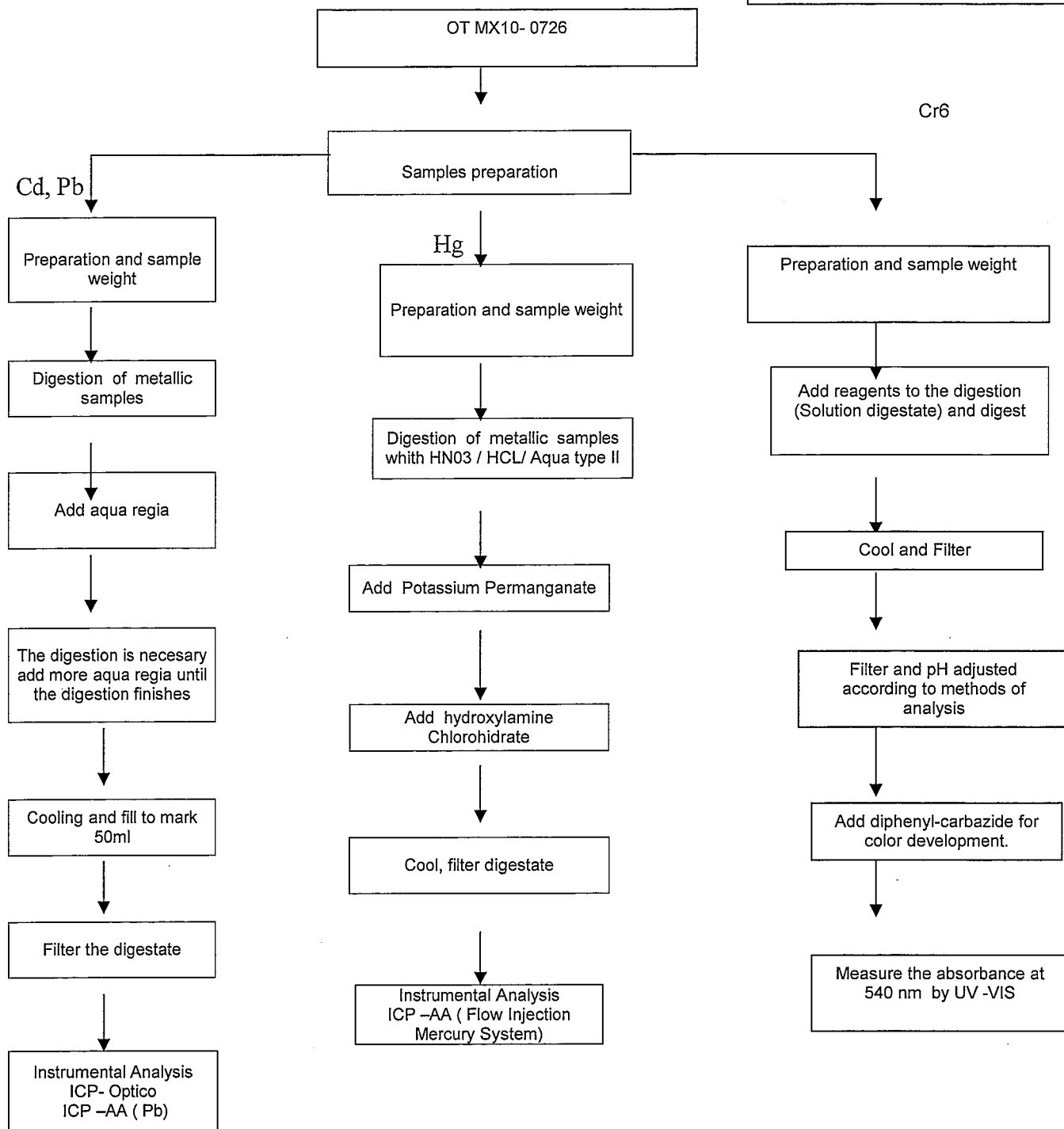
ILTA/003/GENS-F8

**Intertek Testing Services de México, S.A. de C.V.**

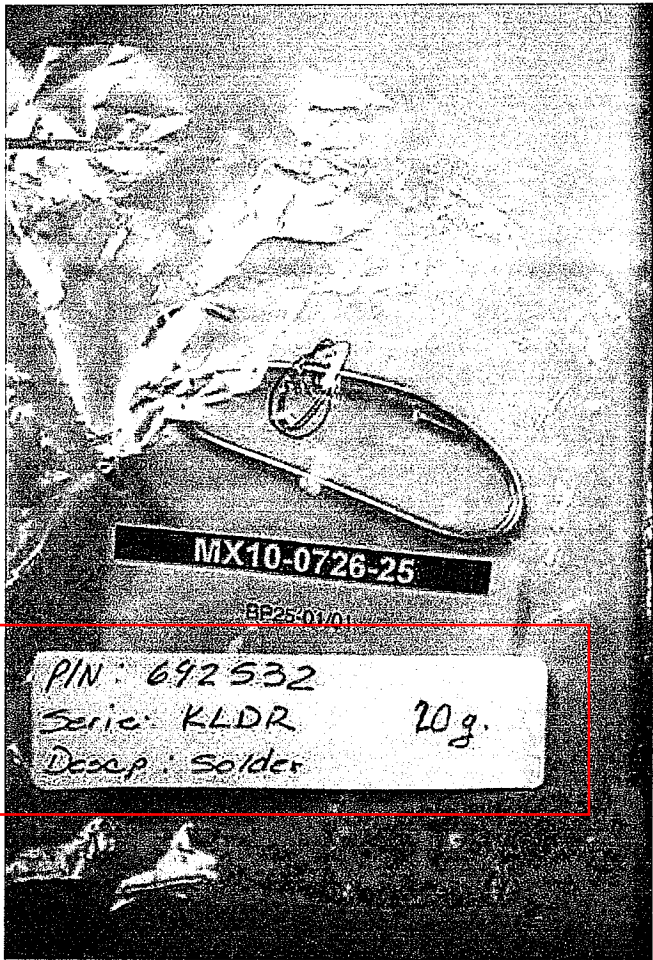
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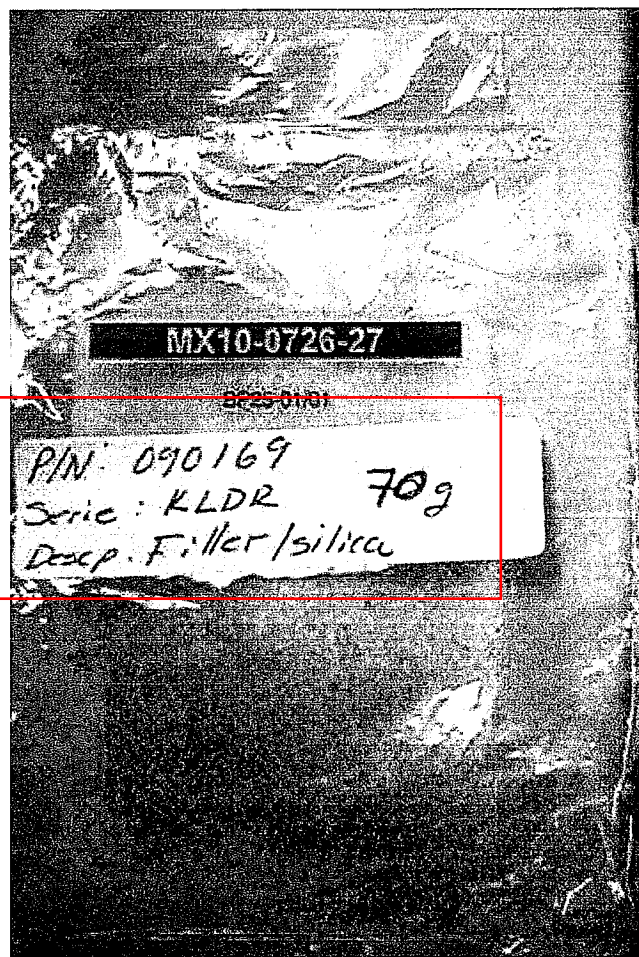
007



**MX10-0726-25**



**MX10-0726-27**





Report No.: MX10-0928-Serie SPF  
Date : 2010-05-31

**RESULTS REPORT**  
**INTERTEK TESTING SERVICES**  
**DE MEXICO SA DE CV**  
**LABORATORIO CD. DE MEXICO**

DELIVER TO:

Littelfuse, S.A. de C.V.  
Poder Judicial No. 1005, Col. Burócratas, Piedras Negras,  
Coahuila, C.P. 26020

ATTENTION: Berenice Casas / Mario Falcón

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**TEST REPORT****APPLICANT**

Littelfuse, S.A. de C.V.  
Poder Judicial No. 1005, Col. Burócratas, Piedras Negras, Coahuila, C.P. 26020  
Berenice Casas / Mario Falcón

**SAMPLE DESCRIPTION**

One (1) group of submitted samples said to be :

Sample Description NP  
19) P/N: 082342 Serie: SPF  
28) P/N: 909-161 / 909-171 Serie: FLQ/SPF  
Item No. 29) P/N: 901-182 Serie: KLKR/BLS  
31) P/N: 087284 Serie: SPF

Country of Origin NP  
Buyer's Name NP  
Supplier's Name NP  
Date sample received 2010-04-20  
Testing period 2010-04-29 to 2009-05-22

\*\*\*\*\*

**TEST CONDUCTED**

As requested by the applicant, for details please refer to attached pages.

\*\*\*\*\*

**CONCLUSION**

	<u>Testing item</u>	<u>Conclusion</u>	<u>Failed component</u>	<u>Failed result</u>
19	P/N: 082342 Serie: SPF	Pass See Result summary	---	---
28	P/N: 909-161 / 909-171 Serie: FLQ/SPF	Pass See Result summary	---	---
29	P/N: 901-182 Serie: KLKR/BLS	Pass See Result summary	---	---
31	P/N: 087284 Serie: SPF	Pass See Result summary	---	---

002

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### TEST CONDUCTED

One (1) group of submitted samples said to be :

- 19) P/N: 082342 Serie: SPF
- 28) P/N: 909-161 / 909-171 Serie: FLQ/SPF
- 29) P/N: 901-182 Serie: KLKR/BLS
- 31) P/N: 087284 Serie: SPF

### TEST RESULT SUMMARY FOR RoHS DIRECTIVE :

TESTING ITEM	Ω RESULT (ppm)				Limit #
	(19)	(28)	(29)	(31)	
Cadmium (Cd) content	ND	ND	ND	ND	0,01% (100 ppm)
Lead (Pb) content	ND	ND	ND	ND	0,1% (1000 ppm)
Mercury (Hg) content	ND	ND	ND	ND	0,1% (1000 ppm)
Chromium (VI) (Cr <sup>6+</sup> )	ND	ND	ND	ND	0,1% (1000 ppm)
<b>POLYBROMINATED BIPHENYLS (PBBs)</b>	---	ND	ND	ND	0,1% (1000 ppm)
Monobromobiphenyl (MonoBB)	---	ND	ND	ND	---
Dibromobiphenyl (DiBB)	---	ND	ND	ND	---
Tribromobiphenyl (TriBB)	---	ND	ND	ND	---
Tetrabromobiphenyl (TetraBB)	---	ND	ND	ND	---
Pentabromobiphenyl (PentaBB)	---	ND	ND	ND	---
Hexabromobiphenyl (HexaBB)	---	ND	ND	ND	---
Heptabromobiphenyl (HeptaBB)	---	ND	ND	ND	---
Octabromobiphenyl (OctaBB)	---	ND	ND	ND	---
Nonabromobiphenyl (NonaBB)	---	ND	ND	ND	---
Decabromobiphenyl (DecaBB)	---	ND	ND	ND	---
<b>POLYBROMINATED DIPHENYL ETHERS (PBDEs)</b>	---	ND	ND	ND	0,1% (1000 ppm)
Monobromodiphenyl (MonoBDE)	---	ND	ND	ND	---
Dibromodiphenyl (DiBDE)	---	ND	ND	ND	---
Tribromodiphenyl (TriBDE)	---	ND	ND	ND	---
Tetrabromodiphenyl (TetraBDE)	---	ND	ND	ND	---
Pentabromodiphenyl (PentaBDE)	---	ND	ND	ND	---
Hexabromodiphenyl (HexaBDE)	---	ND	ND	ND	---
Heptabromodiphenyl (HeptaBDE)	---	ND	ND	ND	---
Octabromodiphenyl (OctaBDE)	---	ND	ND	ND	---
Nonabromodiphenyl (NonaBDE)	---	ND	ND	ND	---
Decabromodiphenyl (DecaBDE)	---	ND	ND	ND	---

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ppm = parts per million based on dry weight of sample.

$\mu\text{g}/\text{cm}^2$  = microgram per square centimeter.

$\text{mg}/\text{kg WITH } 50\text{cm}^2$  = milligram per kilogram with 50 square centimeter.

< = less than.

ND = Not detected.

The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.

These Accreditations only apply for the methods listed in such. Not accredited under EMA  $\Omega$ .

Prepared and checked by :

For Intertek

*Vra López*  
*[Signature]*  
*Coord de área*  
Laboratory Manager



The Official Mexican Standard NOM-008-SCFI-1993 establishes like separator decimal the comma (,).

NOTE :DecaBDE IN POLYMERIC APPLICATIONS IS EXEMPTED ACCORDING TO  
ROHS DIRECTIVE AMENDMENT 2005/717/EC.

# =ACCORDING TO IEC 62321, A POSITIVE RESULT INDICATES THE PRESENCE OF  
Cr(VI) COATING. IT IS THE Cr(VI) CONCENTRATION DETECTED IN TH E  
BOILING-WATER-EXTRACTION SOLUTION AND SHOULD NOT BE INTERPRETED AS  
THE Cr(VI) CONCENTRATION IN THE COATING LAYER OF THE SAMPLE.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF  
TESTED COMPONENTS OF THE SAMPLE MX10 928-19 WERE TESTED TOGETHER.

REMARK: AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF  
TESTED COMPONENTS OF THE SAMPLE MX10 928-28 WERE TESTED TOGETHER.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF  
TESTED COMPONENTS OF THE SAMPLE MX10 928-29 WERE TESTED TOGETHER.

REMARK: AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF  
REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF  
TESTED COMPONENTS OF THE SAMPLE MX10 928-31 WERE TESTED TOGETHER.



## Test method :

No. de Muestra	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
	Chromium VI (Cr <sup>6+</sup> ) content	With reference to USEPA Panasonic (HACH), by EPA Panasonic (HACH) (Sample 1,4) With reference to USEPA 3060, by EPA 7196	BAL827p85 BEQ160p5b	(Sample 1,4) 2010-05-04 2010-05-01,03	MELA,JLHS	0,020 2,0

No. de Muestra	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
	POLYBROMINATED BIPHENYLS (PBBs)	Determined by GC-MSD	2010-004440-P CL	2010-04-28 2010-05-22	CONT	50*
	POLYBROMINATED DIPHENYL ETHERS (PBDEs)	Determined by GC-MSD	2010-004440-P CL	2010-04-28 2010-05-22	CONT	50*

No. de Muestra	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
19	Lead (Pb) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-4p59	2010-04-29	MARY,DCL	4,902
28	Lead (Pb) content	With reference to USEPA 3052MOD, by EPA 6010	MET2010-4p60	2010-04-29	MARY,DCL	4,717
29	Lead (Pb) content	With reference to USEPA 3052MOD, by EPA 6010	MET2010-4p60	2010-04-29	MARY,DCL	4,717
31	Lead (Pb) content	With reference to USEPA 3052MOD, by EPA 6010	MET2010-4p60	2010-04-29	MARY,DCL	4,902

No. de Muestra	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
19	Cadmium (Cd) content	With reference to USEPA 3050MOD, by EPA 6010	MET2010-4p59	2010-04-29	MARY,DCL	1,961
28	Cadmium (Cd) content	With reference to USEPA 3052MOD, by EPA 6010	MET2010-4p60	2010-04-29	MARY,DCL	1,887
29	Cadmium (Cd) content	With reference to USEPA 3052MOD, by EPA 6010	MET2010-4p60	2010-04-29	MARY,DCL	1,887
31	Cadmium (Cd) content	With reference to USEPA 3052MOD, by EPA 6010	MET2010-4p60	2010-04-29	MARY,DCL	1,961

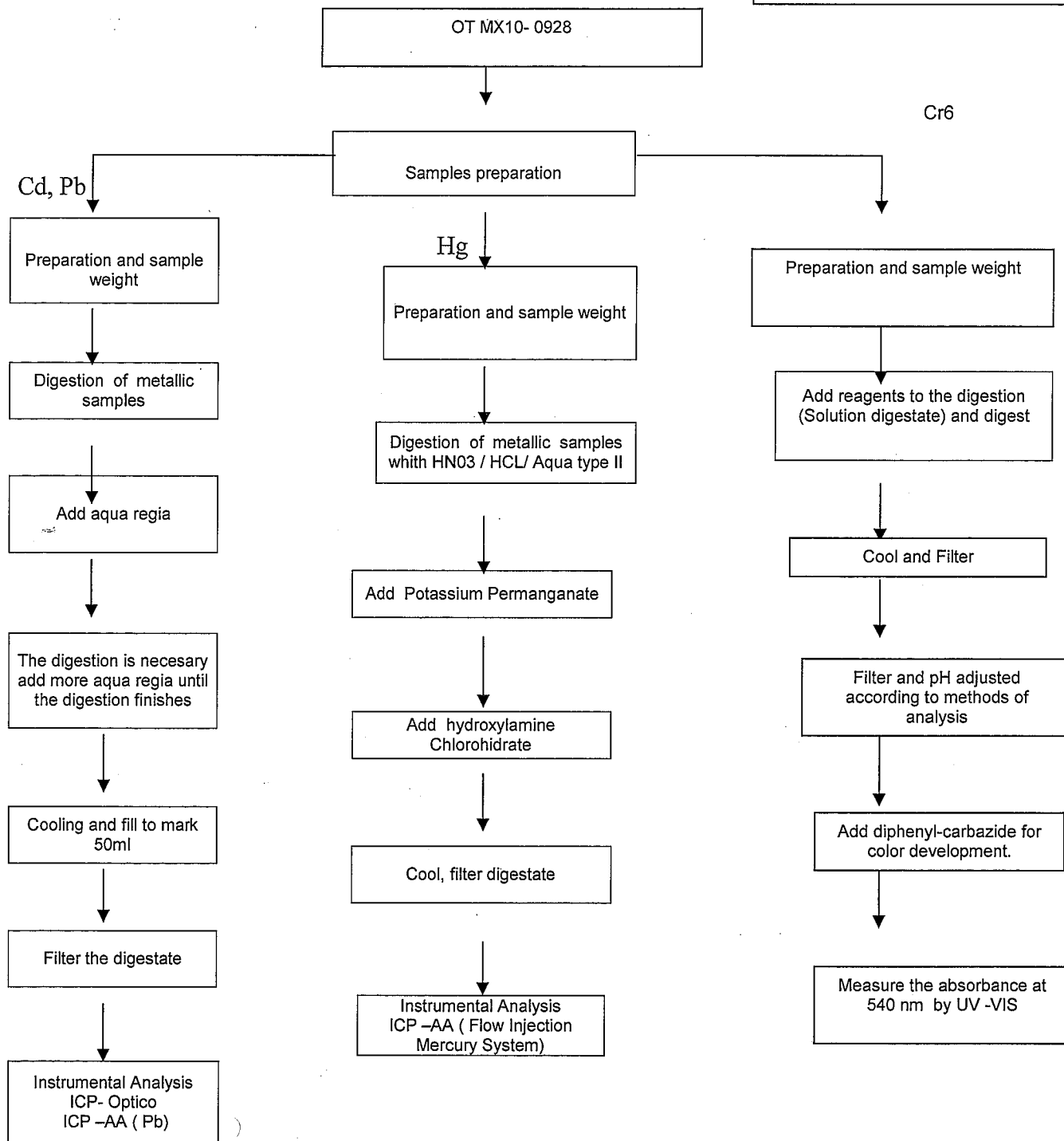
No. de Muestra	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
19	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-4p61	2010-04-30	UBM	0,082
28	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-8p2	2010-04-30	UBM	0,0746
29	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-8p2	2010-04-30	UBM	0,0714
31	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-8p2	2010-04-30	UBM	0,0794

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Bldv. Manuel Ávila Camacho No. 182 Col. Lomas de Chapultepec  
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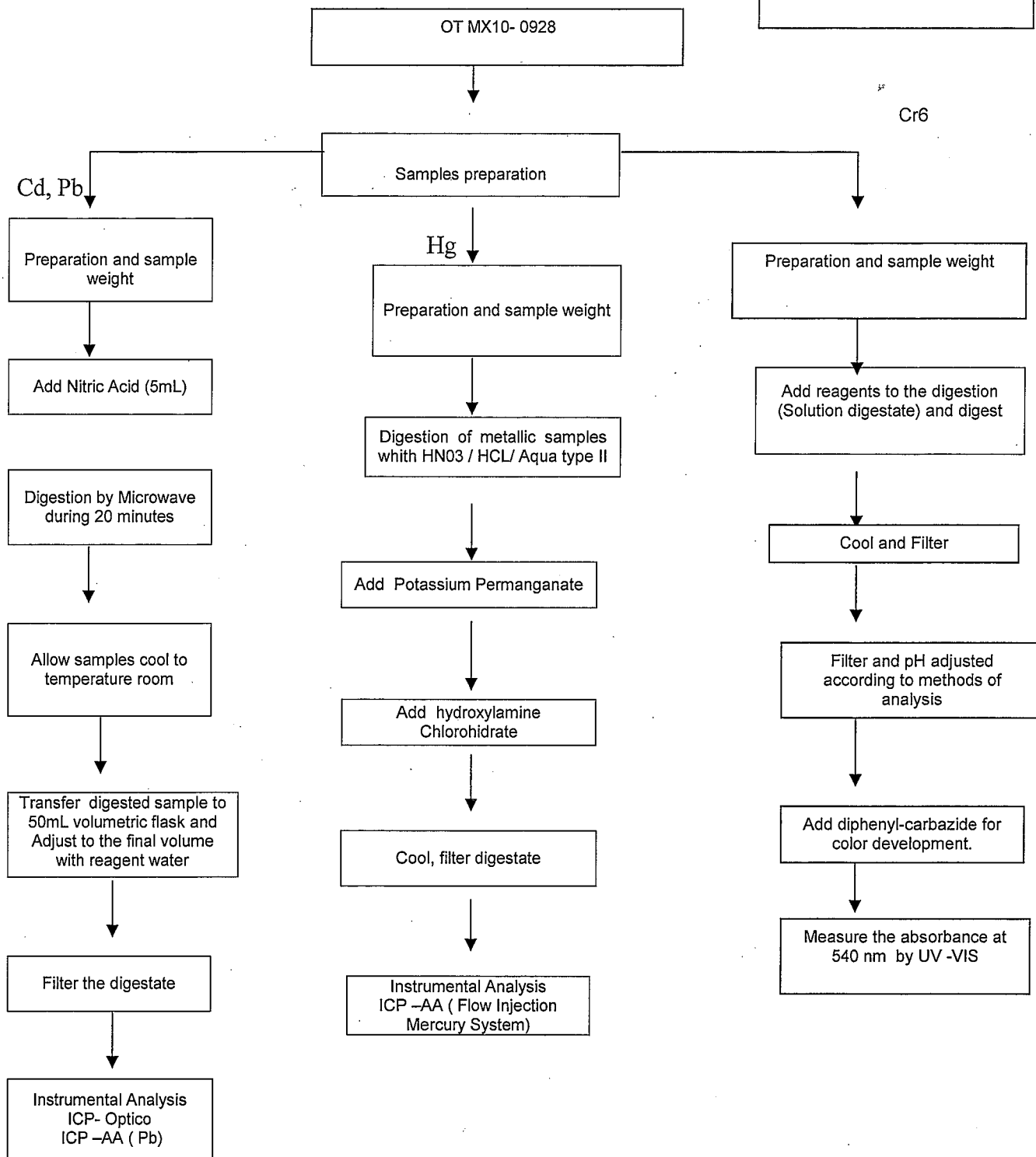


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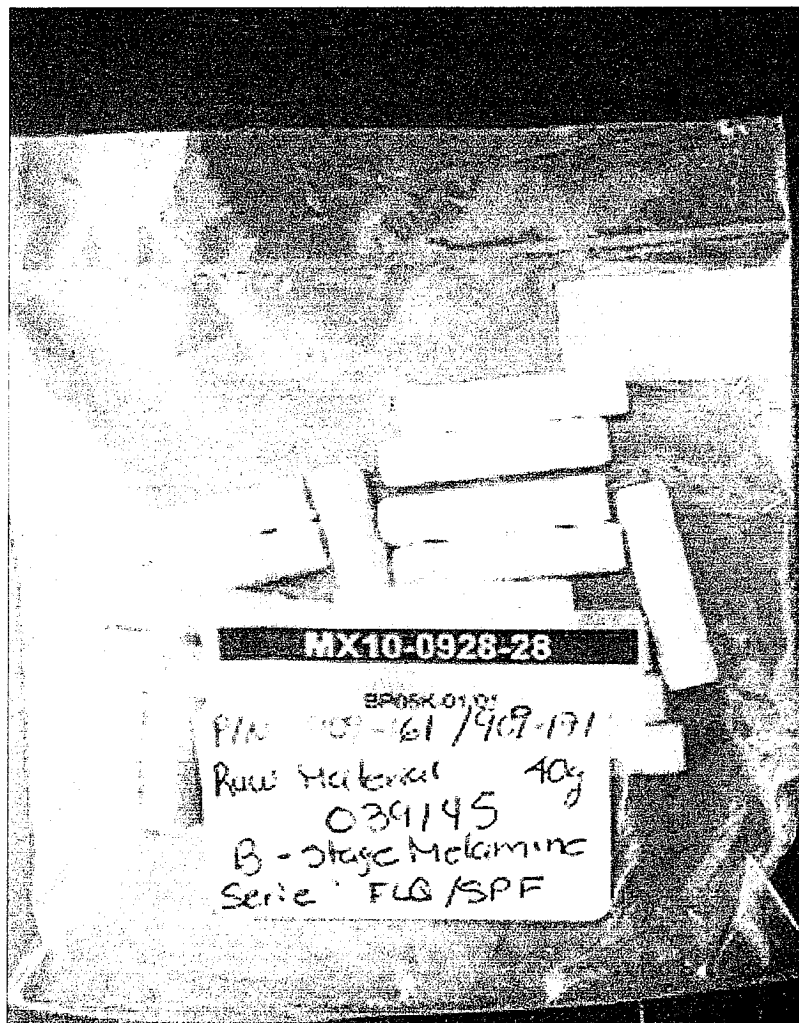
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**MX10-0928-28**



**RESULTS REPORT**

**INTERTEK TESTING SERVICES**

**DE MEXICO SA DE CV**

**LABORATORIO CD. DE MEXICO**

DELIVER TO:

Littelfuse, S.A. de C.V.

Blvd. Fausto Z. Martínez 1800, Col. Magisterio Sección 38,  
Piedras Negras, Coahuila

ATTENTION: Ing. Mario Falcón / Ing. Manuel Berain

## TEST REPORT

## APPLICANT

Littelfuse, S.A. de C.V.

Blvd. Fausto Z. Martínez 1800, Col. Magisterio Sección 38, Piedras Negras, Coahuila

Ing. Mario Falcón / Ing. Manuel Berain

## SAMPLE DESCRIPTION

One (1) group of submitted samples said to be :

Sample Description      Serie APT  
1) N.P. 924-145  
2) N.P. 080697  
Item No.                    3) N.P. 685406  
4) N.P. 900-143

Country of Origin      NP

Buyer's Name          NP

Supplier's Name       NP

Date sample received 2010-07-26

Testing period          2010-07-29 to 2010-08-09

\*\*\*\*\*

## TEST CONDUCTED

As requested by the applicant, for details please refer to attached pages.

\*\*\*\*\*

## CONCLUSION

<u>Sample Number</u>	<u>Testing item</u>	<u>Conclusion</u>	<u>Failed component</u>	<u>Failed result</u>
1	N.P. 924-145	Pass See Result summary	---	---
2	N.P. 080697	Pass See Result summary	---	---
3	N.P. 685406	Pass See Result summary	---	---
4	N.P. 900-143	Pass See Result summary	---	---

\*\*\*\*\*

## TEST CONDUCTED

One (1) group of submitted samples said to be :

1) N.P. 924-145

2) N.P. 080697

3) N.P. 685406

4) N.P. 900-143

## TEST RESULT SUMMARY FOR RoHS DIRECTIVE :

TESTING ITEM	Ω RESULT (ppm)				Limit
	(1)	(2)	(3)	(4)	
Cadmium (Cd) content	ND	ND	ND	ND	0,01% (100 ppm)
Lead (Pb) content	199,5	ND	ND	ND	0,1% (1000 ppm)
Mercury (Hg) content	ND	ND	ND	ND	0,1% (1000 ppm)
Chromium (VI) (Cr <sup>6+</sup> )	ND	ND	ND	ND	0,1% (1000 ppm)
<b>POLYBROMINATED BIPHENYLS (PBBs) Total</b>	---	---	---	ND	0,1% (1000 ppm)
Monobromobiphenyl (MonoBB)	---	---	---	ND	---
Dibromobiphenyl (DiBB)	---	---	---	ND	---
Tribromobiphenyl (TriBB)	---	---	---	ND	---
Tetrabromobiphenyl (TetraBB)	---	---	---	ND	---
Pentabromobiphenyl (PentaBB)	---	---	---	ND	---
Hexabromobiphenyl (HexaBB)	---	---	---	ND	---
Heptabromobiphenyl (HeptaBB)	---	---	---	ND	---
Octabromobiphenyl (OctaBB)	---	---	---	ND	---
Nonabromobiphenyl (NonaBB)	---	---	---	ND	---
Decabromobiphenyl (DecaBB)	---	---	---	ND	---
<b>POLYBROMINATED DIPHENYL ETHERS (PBDEs) Total</b>	---	---	---	ND	0,1% (1000 ppm)
Monobromodiphenyl (MonoBDE)	---	---	---	ND	---
Dibromodiphenyl (DiBDE)	---	---	---	ND	---
Tribromodiphenyl (TriBDE)	---	---	---	ND	---
Tetrabromodiphenyl (TetraBDE)	---	---	---	ND	---
Pentabromodiphenyl (PentaBDE)	---	---	---	ND	---
Hexabromodiphenyl (HexaBDE)	---	---	---	ND	---
Heptabromodiphenyl (HeptaBDE)	---	---	---	ND	---
Octabromodiphenyl (OctaBDE)	---	---	---	ND	---
Nonabromodiphenyl (NonaBDE)	---	---	---	ND	---
Decabromodiphenyl (DecaBDE)	---	---	---	ND	---

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1ª. Emisión Junio 2005, 1ª Revisión Junio 26, 2009.

ILTA/003/GENS-F8

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ppm = parts per million based on dry weight of sample.

$\mu\text{g}/\text{cm}^2$  = microgram per square centimeter.

mg/kg WITH 50cm<sup>2</sup> = milligram per kilogram with 50 square centimeter.

< = less than.

ND = Not detected.

The above limits were quoted from 2002/95/EC and amendment 2005/618/EC for homogeneous material.

These Accreditations only apply for the methods listed in such. Not accredited under EMA  $\Omega$ .

Prepared and checked by :  
For Intertek

Laboratory Manager

The Official Mexican Standard NOM-008-SCFI-1993 establishes like separator decimal the comma (,).

NOTE :DecaBDE IN POLYMERIC APPLICATIONS IS EXEMPTED ACCORDING TO  
ROHS DIRECTIVE AMENDMENT 2005/717/EC.

# =ACCORDING TO IEC 62321, A POSITIVE RESULT INDICATES THE PRESENCE OF Cr(VI) COATING. IT IS THE Cr(VI) CONCENTRATION DETECTED IN THE BOILING-WATER-EXTRACTION SOLUTION AND SHOULD NOT BE INTERPRETED AS THE Cr(VI) CONCENTRATION IN THE COATING LAYER OF THE SAMPLE.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX10-1602-1 WERE TESTED TOGETHER.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX10-1602-2 WERE TESTED TOGETHER.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX10-1602-3 WERE TESTED TOGETHER.

REMARK : AS REQUESTED BY THE APPLICANT, COATING WITH BASE MATERIAL OF TESTED COMPONENTS OF THE SAMPLE MX10-1602-4 WERE TESTED TOGETHER.



## Test method :

Sample number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
1-4	Chromium VI ( $\text{Cr}^{6+}$ ) content	With reference to USEPA 3060, by EPA 7196	QHU2009-3p151	2010-07-31	JLHS	2,0

Sample number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
4	POLYBROMINATED BIPHENYLS (PBBs)	Determined by GC-MSD	2010-004616-P CL	2010-08-09	▲ CONT	50,0
4	POLYBROMINATED DIPHENYL ETHERS (PBDEs)	Determined by GC-MSD	2010-004616-P CL	2010-08-09	▲ CONT	50,0

Sample number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
1	Lead (Pb) content	With reference to USEPA 3050-MOD, by EPA 6010	MET2010-32p34	2010-08-03	DCL,JMR	5,0
2	Lead (Pb) content	With reference to USEPA 3050-MOD, by EPA 6010	MET2010-32p34	2010-08-03	DCL,JMR	5,0
3	Lead (Pb) content	With reference to USEPA 3050-MOD, by EPA 6010	MET2010-32p34	2010-08-03	DCL,JMR	5,0
4	Lead (Pb) content	With reference to USEPA 3052, by EPA 6010	MET2010-32p35	2010-08-03	DCL,JMR	5,0

Sample number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
1	Cadmium (Cd) content	With reference to USEPA 3050-MOD, by EPA 6010	MET2010-32p34	2010-08-03	DCL,JMR	2,0
2	Cadmium (Cd) content	With reference to USEPA 3050-MOD, by EPA 6010	MET2010-32p34	2010-08-03	DCL,JMR	2,0
3	Cadmium (Cd) content	With reference to USEPA 3050-MOD, by EPA 6010	MET2010-32p34	2010-08-03	DCL,JMR	2,0
4	Cadmium (Cd) content	With reference to USEPA 3052, by EPA 6010	MET2010-32p35	2010-08-03	DCL,JMR	2,0

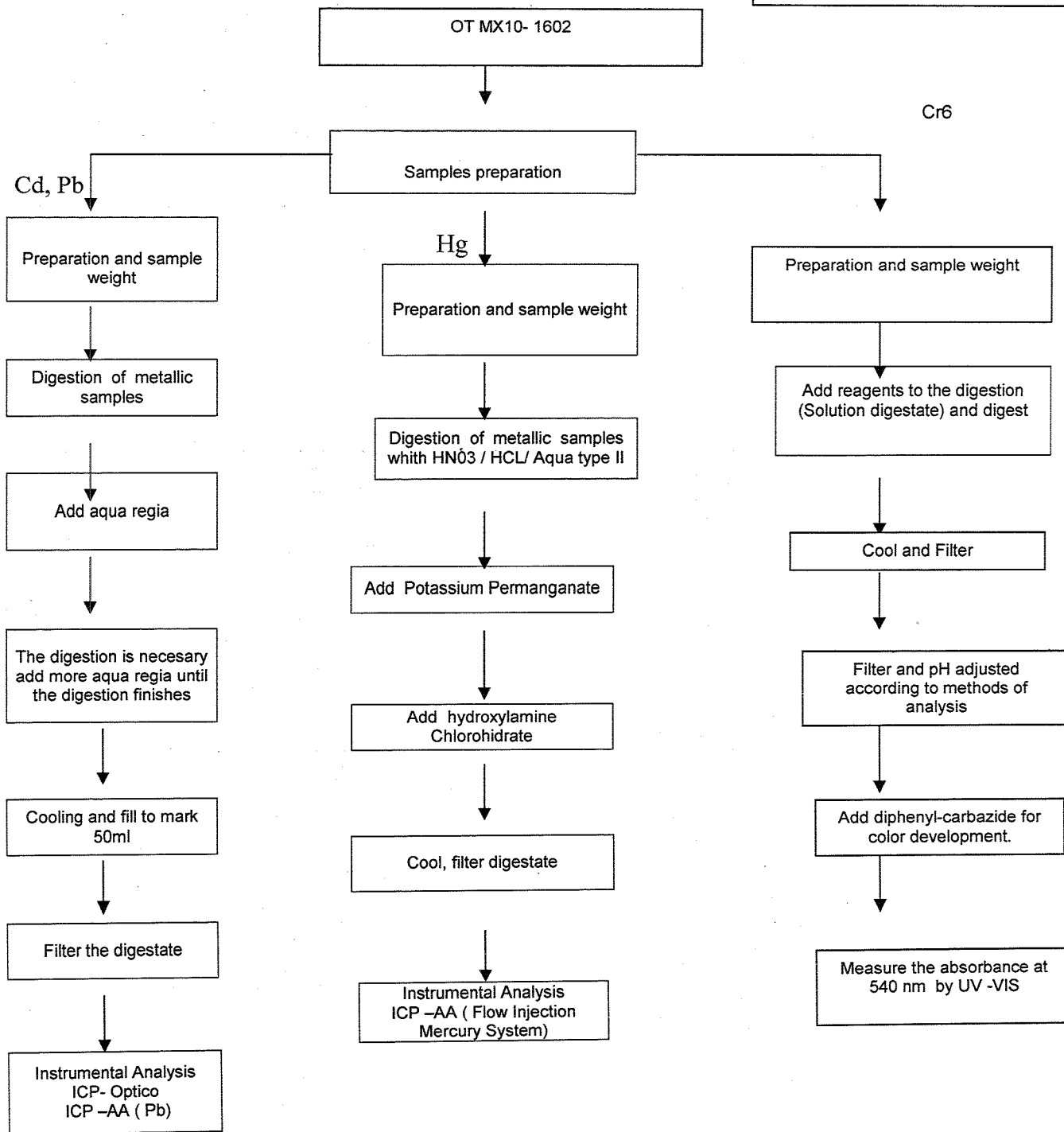
Sample number	Testing item	Ω Testing method	Quality control Batch:	Analysis Date:	Analyzed By:	Reporting limit ppm
1	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-32p40	2010-08-04	JAPM	0,3
2	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-32p40	2010-08-04	JAPM	0,3
3	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-32p40	2010-08-04	JAPM	0,3
4	Mercury (Hg) content	With reference to USEPA 7471 by USEPA 7471	MET2010-32p39	2010-08-04	JAPM	0,3

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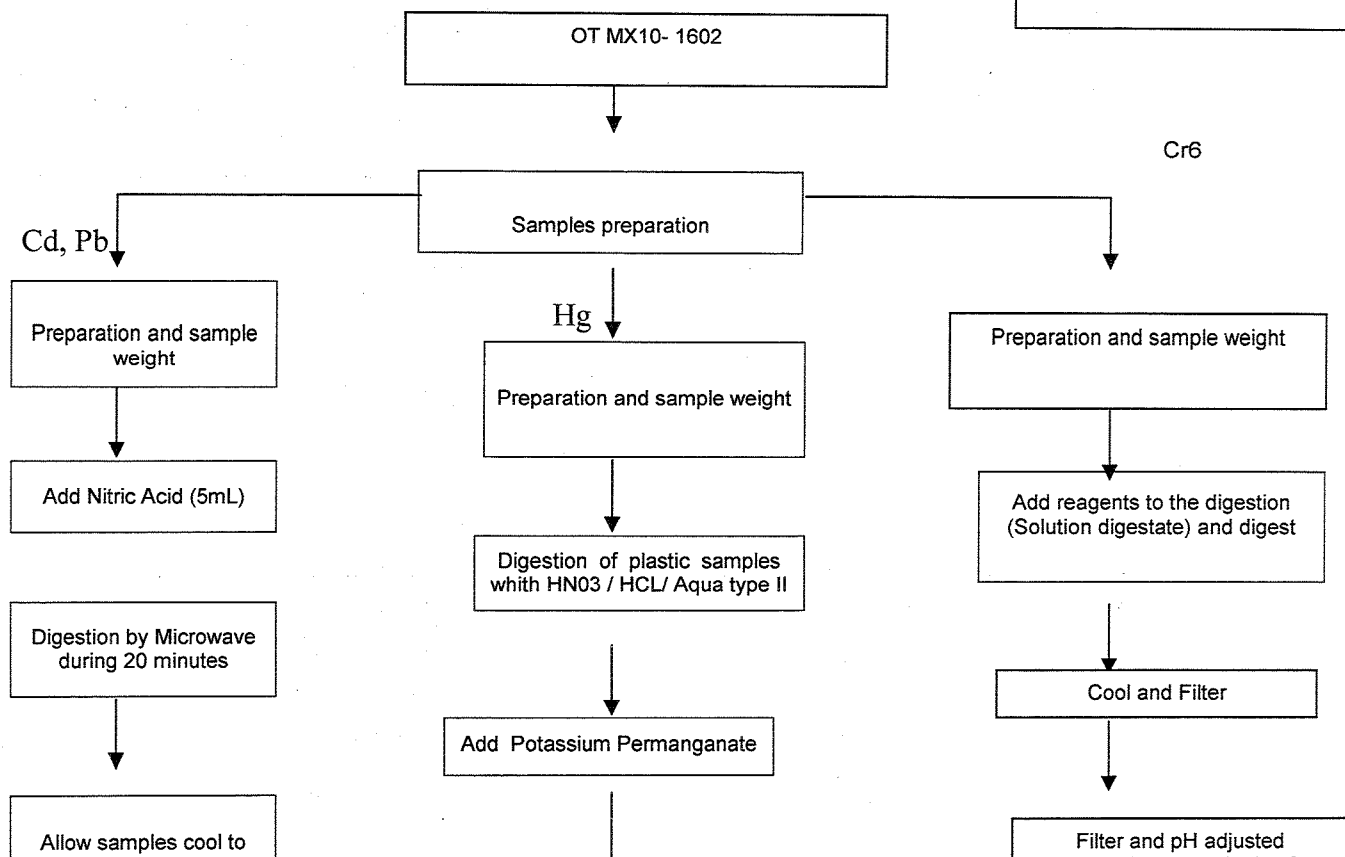
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**MX10-1602**

