

检测报告 Test Report



报告编号 A2200250075102001E
Report No. A2200250075102001E

第 1 页 共 9 页
Page 1 of 9

报告抬头公司名称 光路新能源材料（上海）有限公司
Company Name LUSUN NEW ENERGY MATERIALS (SHANGHAI) CO.,LTD.
shown on Report
地 址 上海莘庄工业区春西路688号
Address NO.688 CHUNXI ROAD XINZHUANG AREA MINHANG SHANGHAI

以下测试之样品及样品信息由申请者提供并确认

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the applicant

样品名称	Lead Frame
Sample Name	Lead Frame
材料名称	Cu
Material	Cu
样品接收日期	2020.07.31
Sample Received Date	Jul. 31, 2020
样品检测日期	2020.07.31-2020.08.06
Testing Period	Jul. 31, 2020 to Aug. 6, 2020

检测要求 根据客户要求，对所提交样品中的铅(Pb)，镉(Cd)，汞(Hg)，六价铬(Cr(VI))，多溴联苯(PBBs)，多溴二苯醚(PBDEs)，邻苯二甲酸酯(DBP, BBP, DEHP, DIBP)，铍(Be)，锑(Sb)，氟(F)，氯(Cl)，溴(Br)，碘(I)，全氟辛烷磺酸(PFOS)，全氟辛酸(PFOA)进行测试。

Test Requested As specified by client, to test Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Phthalates (DBP, BBP, DEHP, DIBP), Beryllium(Be), Antimony(Sb), Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I), Perfluorooctane Sulfonates (PFOS), Perfluorooctanoic Acid (PFOA) in the submitted sample(s).

检测依据/检测结果 请参见下页。
Test Method/Test Result(s) Please refer to the following page(s).

主 检

张孝瑜

审 核

陶英

Tested by

批 准

Approved by

陈凯敏

Reviewed by

日 期

Date

2020.08.06

陈凯敏
实验室经理 Lab Manager

No. R201801372

上海市闵行区万芳路1351号

No.1351, Wanfang Road, Minhang District, Shanghai, China



检测报告

Test Report

报告编号 A2200250075102001E

第 2 页 共 9 页

Report No. A2200250075102001E

Page 2 of 9

检测依据 Test Method

测试项目 Test Item(s)	测试方法 Test Method	测试仪器 Measured Equipment(s)
铅 Lead(Pb)	IEC 62321-5:2013	ICP-OES
镉 Cadmium(Cd)	IEC 62321-5:2013	ICP-OES
汞 Mercury(Hg)	IEC 62321-4:2013+AMD1:2017 CSV	ICP-OES
六价铬 Hexavalent Chromium(Cr(VI))	IEC 62321-7-1:2015	UV-Vis
多溴联苯 Polybrominated Biphenyls(PBBs)	IEC 62321-6:2015	GC-MS
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS
铍 Beryllium(Be)	参考US EPA 3050B:1996 & US EPA 6010D:2018 Refer to US EPA 3050B:1996 & US EPA 6010D:2018	ICP-OES
锑 Antimony(Sb)	参考US EPA 3050B:1996 & US EPA 6010D:2018 Refer to US EPA 3050B:1996 & US EPA 6010D:2018	ICP-OES
氟 Fluorine (F)	参考EN 14582:2016 Refer to EN 14582:2016	IC
氯 Chlorine (Cl)	参考EN 14582:2016 Refer to EN 14582:2016	IC
溴 Bromine (Br)	参考EN 14582:2016 Refer to EN 14582:2016	IC
碘 Iodine (I)	参考EN 14582:2016 Refer to EN 14582:2016	IC
全氟辛烷磺酸 Perfluorooctane Sulfonates (PFOS)	参考US EPA 3550C:2007 & US EPA 8321B:2007 Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC-MS-MS/LC-MS
全氟辛酸 Perfluorooctanoic Acid (PFOA)	参考US EPA 3550C:2007 & US EPA 8321B:2007 Refer to US EPA 3550C:2007 & US EPA 8321B:2007	LC-MS-MS/LC-MS

检测报告

Test Report

报告编号 A2200250075102001E

第 3 页 共 9 页

Report No. A2200250075102001E

Page 3 of 9

检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
铅 Lead(Pb)	8 mg/kg	2 mg/kg
镉 Cadmium(Cd)	N.D.	2 mg/kg
汞 Mercury(Hg)	N.D.	2 mg/kg
六价铬 Hexavalent Chromium(Cr(VI))	N.D. ▼	0.10 µg/cm ² (LOQ)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
多溴联苯 Polybrominated Biphenyls(PBBs)		
一溴联苯 Monobromobiphenyl	N.D.	5 mg/kg
二溴联苯 Dibromobiphenyl	N.D.	5 mg/kg
三溴联苯 Tribromobiphenyl	N.D.	5 mg/kg
四溴联苯 Tetrabromobiphenyl	N.D.	5 mg/kg
五溴联苯 Pentabromobiphenyl	N.D.	5 mg/kg
六溴联苯 Hexabromobiphenyl	N.D.	5 mg/kg
七溴联苯 Heptabromobiphenyl	N.D.	5 mg/kg
八溴联苯 Octabromobiphenyl	N.D.	5 mg/kg
九溴联苯 Nonabromobiphenyl	N.D.	5 mg/kg
十溴联苯 Decabromobiphenyl	N.D.	5 mg/kg

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
多溴二苯醚 Polybrominated Diphenyl Ethers (PBDEs)		
一溴二苯醚 Monobromodiphenyl ether	N.D.	5 mg/kg
二溴二苯醚 Dibromodiphenyl ether	N.D.	5 mg/kg
三溴二苯醚 Tribromodiphenyl ether	N.D.	5 mg/kg
四溴二苯醚 Tetrabromodiphenyl ether	N.D.	5 mg/kg
五溴二苯醚 Pentabromodiphenyl ether	N.D.	5 mg/kg
六溴二苯醚 Hexabromodiphenyl ether	N.D.	5 mg/kg
七溴二苯醚 Heptabromodiphenyl ether	N.D.	5 mg/kg
八溴二苯醚 Octabromodiphenyl ether	N.D.	5 mg/kg
九溴二苯醚 Nonabromodiphenyl ether	N.D.	5 mg/kg
十溴二苯醚 Decabromodiphenyl ether	N.D.	5 mg/kg

检测报告

Test Report

报告编号 A2200250075102001E

第 4 页 共 9 页

Report No. A2200250075102001E

Page 4 of 9

检测结果 Test Result(s)

测试项目 Tested Item(s)	结果 Result	方法检出限 MDL
邻苯二甲酸酯 Phthalates (DBP, BBP, DEHP, DIBP)		
邻苯二甲酸二丁酯 Dibutyl phthalate(DBP) CAS#:84-74-2	N.D.	50 mg/kg
邻苯二甲酸丁基苄基酯 Butyl benzyl phthalate(BBP) CAS#:85-68-7	N.D.	50 mg/kg
邻苯二甲酸二(2-乙基)己酯 Di-(2-ethylhexyl) phthalate(DEHP) CAS#:117-81-7	N.D.	50 mg/kg
邻苯二甲酸二异丁酯 Diisobutyl phthalate(DIBP) CAS#:84-69-5	N.D.	50 mg/kg
测试项目 Tested Item(s)		
铍 Beryllium(Be)	N.D.	10 mg/kg
锑 Antimony(Sb)	N.D.	10 mg/kg
测试项目 Tested Item(s)		
氟 Fluorine(F)	N.D.	10 mg/kg
氯 Chlorine(Cl)	N.D.	10 mg/kg
溴 Bromine(Br)	N.D.	10 mg/kg
碘 Iodine(I)	N.D.	10 mg/kg
测试项目 Tested Item(s)		
全氟辛烷磺酸 Perfluorooctane Sulfonates(PFOS)	N.D.	5 mg/kg
测试项目 Tested Item(s)		
全氟辛酸 Perfluorooctanoic Acid(PFOA)	N.D.	5 mg/kg

检测报告

Test Report

报告编号 A2200250075102001E
Report No. A2200250075102001E
样品/部位描述 铜色金属
Sample/Part Description Cupreous metal

第 5 页 共 9 页
Page 5 of 9

备注: 对于检测铅, 镉, 汞, 铍, 锑之样品已完全溶解。
-N.D. = 未检出 (小于方法检出限或定量限)
-mg/kg = ppm = 百万分之一
-LOQ = 定量限, 六价铬的定量限为0.10 $\mu\text{g}/\text{cm}^2$
-▼六价铬浓度小于0.10 $\mu\text{g}/\text{cm}^2$, 样品未检出六价铬。

Remark: **The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury, Beryllium, Antimony.**
-MDL = Method Detection Limit
-N.D. = Not Detected (<MDL or LOQ)
-mg/kg = ppm = parts per million
-LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 $\mu\text{g}/\text{cm}^2$
-▼The sample is negative for Cr(VI) – The Cr(VI) concentration is below 0.10 $\mu\text{g}/\text{cm}^2$. The coating is considered a non-Cr(VI) based coating.

注释: 本报告中的数据结果供科研、教学、企业内部质量控制、企业产品研发等目的用。
Note: **The testing data and result(s) in this report is(are) just for scientific research, education, internal quality control and product development etc.**

检测报告 Test Report

报告编号 A2200250075102001E

第 6 页 共 9 页

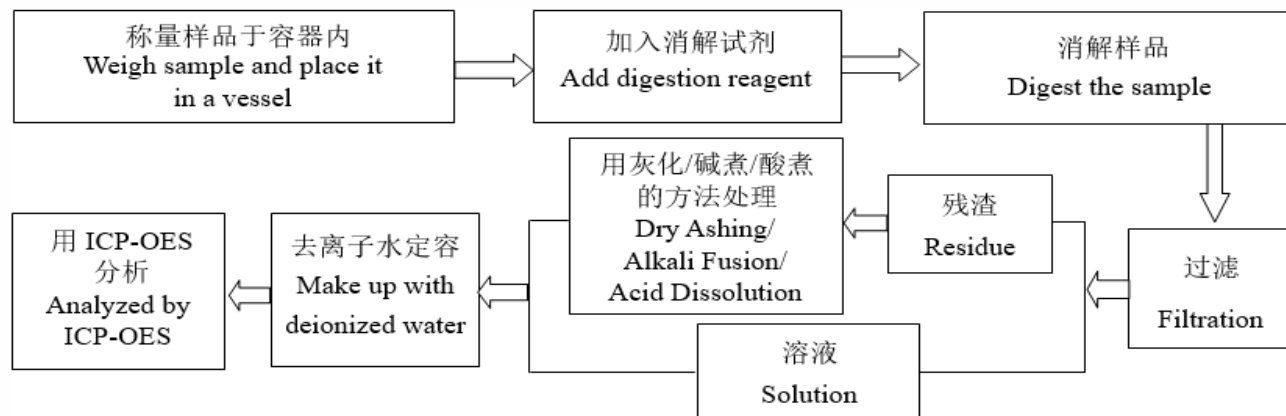
Report No. A2200250075102001E

Page 6 of 9

检测流程 Test Process

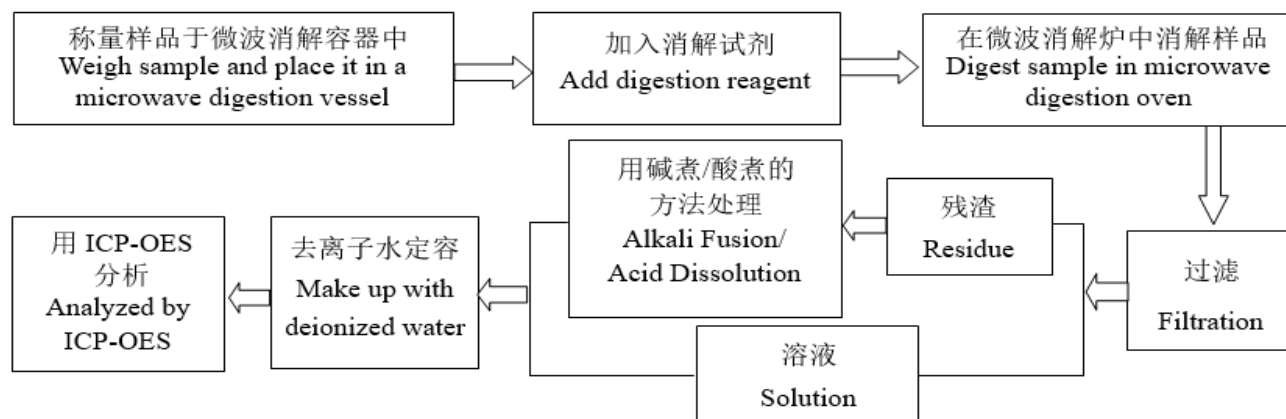
1. 铅(Pb), 镉(Cd)

Lead(Pb), Cadmium(Cd)



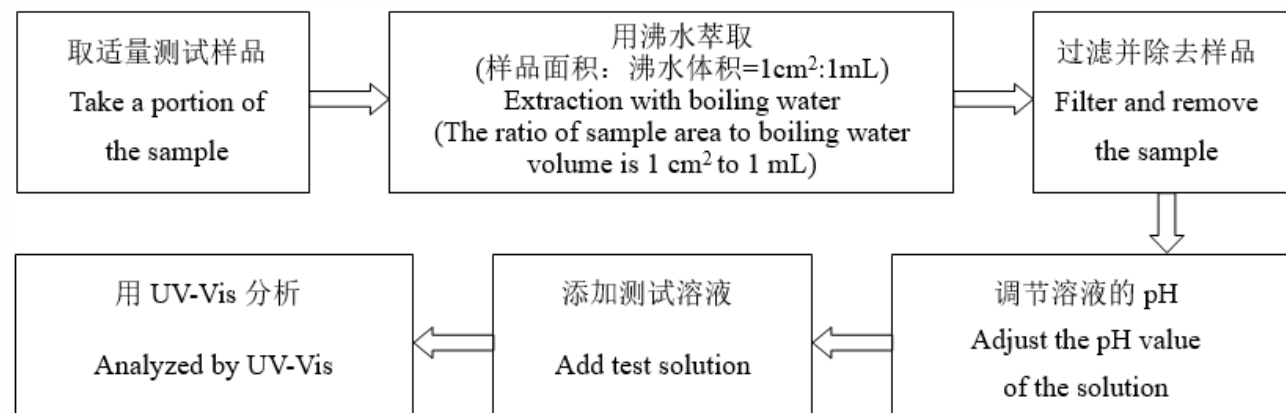
2. 汞(Hg)

Mercury(Hg)



3. 六价铬(Cr(VI))

Hexavalent Chromium(Cr(VI))



检测报告 Test Report

报告编号 A2200250075102001E

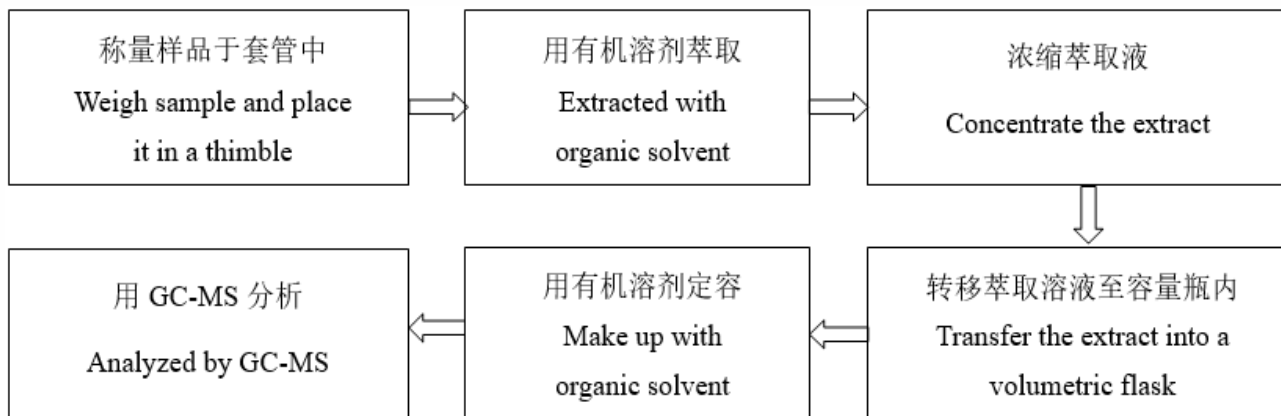
第 7 页 共 9 页

Report No. A2200250075102001E

Page 7 of 9

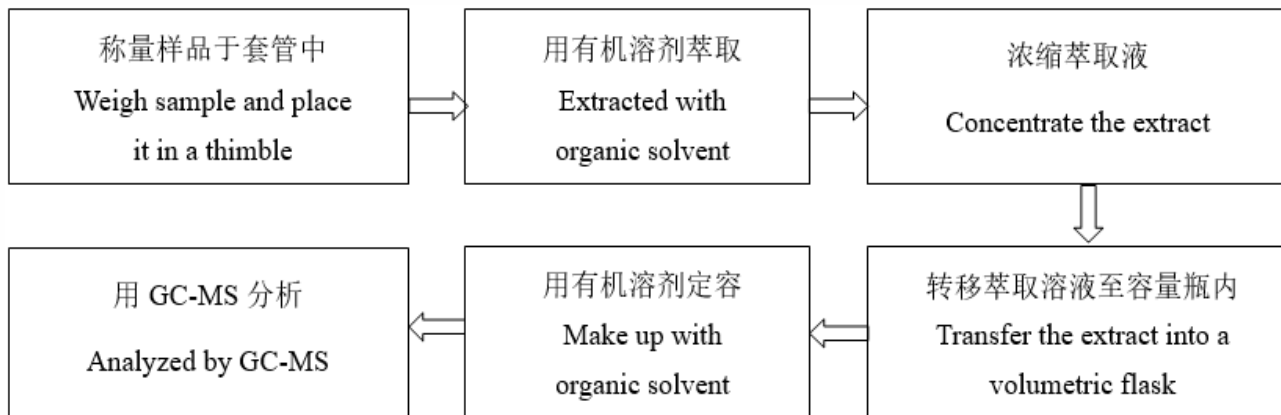
4. 多溴联苯(PBBs), 多溴二苯醚(PBDEs)

Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers (PBDEs)



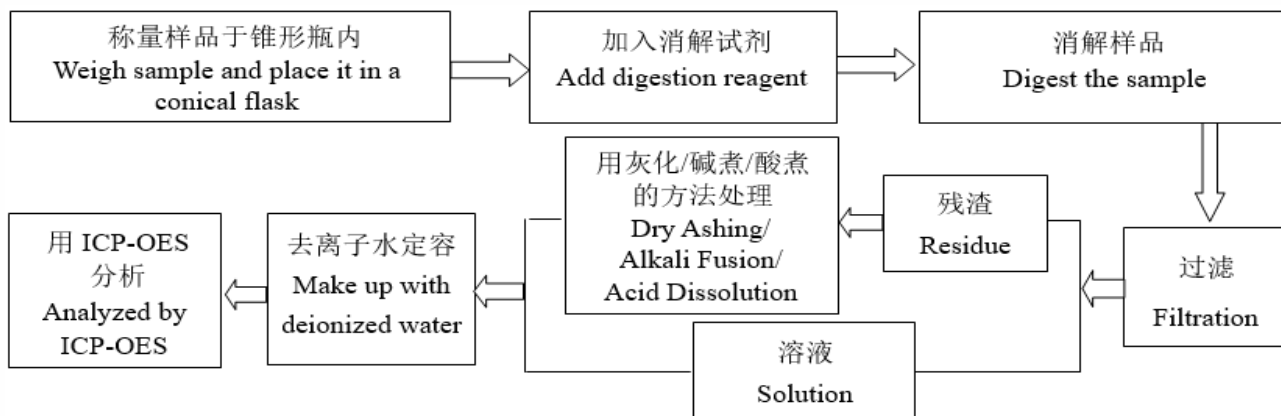
5. 邻苯二甲酸酯(DBP, BBP, DEHP, DIBP)

Phthalates (DBP, BBP, DEHP, DIBP)



6. 铍(Be), 锑(Sb)

Beryllium(Be), Antimony(Sb)



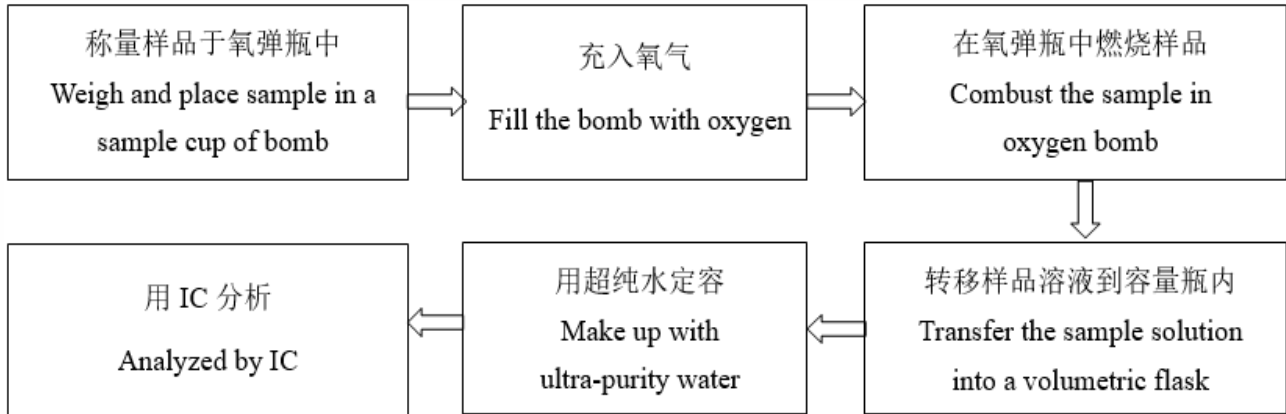
检测报告 Test Report

报告编号 A2200250075102001E
Report No. A2200250075102001E

第 8 页 共 9 页
Page 8 of 9

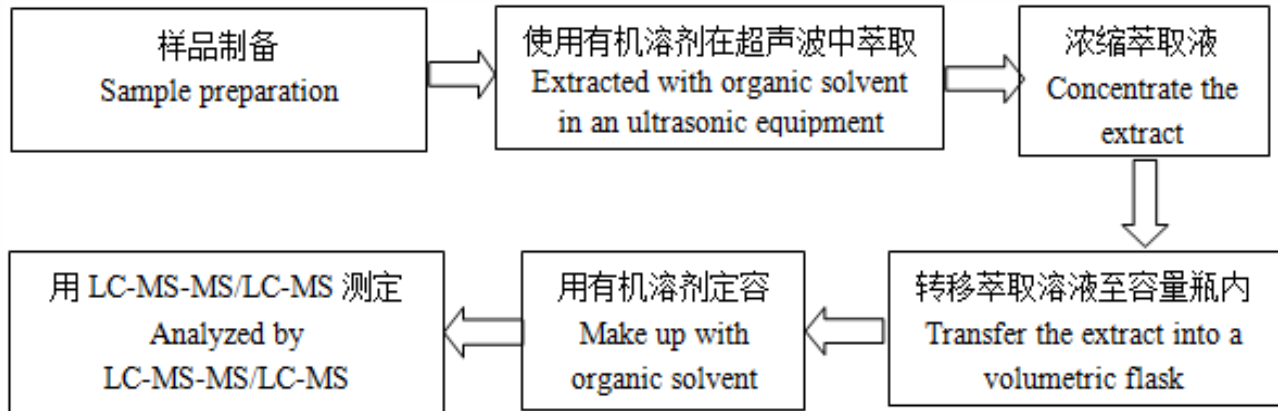
7. 氟(F), 氯(Cl), 溴(Br), 碘(I)

Fluorine (F), Chlorine (Cl), Bromine (Br), Iodine (I)



8. 全氟辛烷磺酸(PFOS), 全氟辛酸(PFOA)

Perfluorooctane Sulfonates (PFOS), Perfluorooctanoic Acid (PFOA)

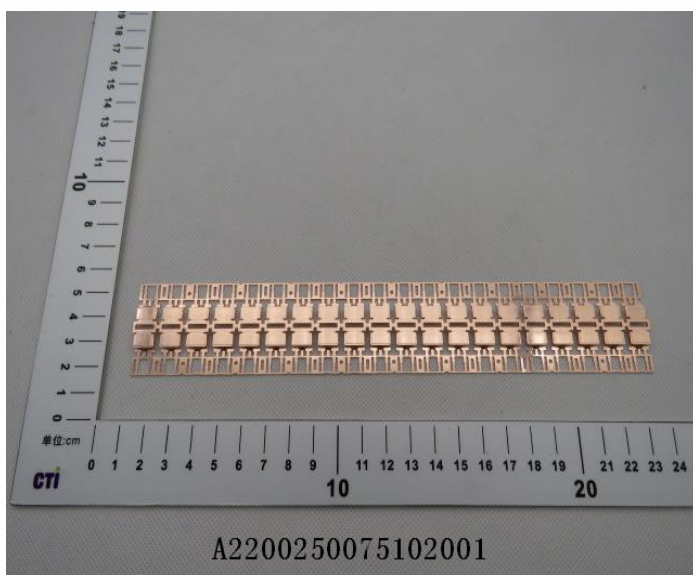


检测报告 Test Report

报告编号 A2200250075102001E
Report No. A2200250075102001E

第 9 页 共 9 页
Page 9 of 9

样品图片 Photo(s) of the sample(s)



声明 Statement:

1. 检测报告无批准人签字、“专用章”及报告骑缝章无效;
This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. 报告抬头公司名称及地址、样品及样品信息由申请者提供, 申请者应对其真实性负责, CTI未核实其真实性;
The Company Name shown on Report and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified;
3. 本报告检测结果仅对受测样品负责;
The result(s) shown in this report refer(s) only to the sample(s) tested;
4. 未经CTI书面同意, 不得部分复制本报告;
Without written approval of CTI, this report can't be reproduced except in full;
5. 如检测报告中的英文内容与中文内容有差异, 以中文为准。
In case of any discrepancy between the English version and Chinese version of the testing reports (if generated), the Chinese version shall prevail.

报告结束

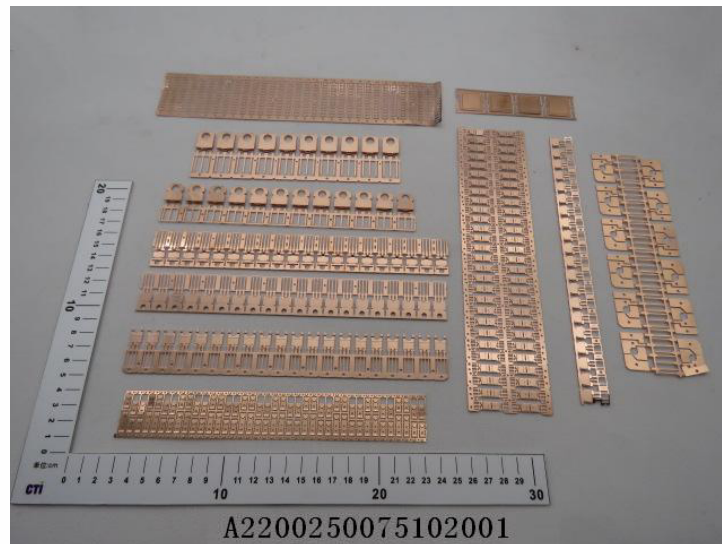
*** End of report ***

附录Appendix

客户参考信息Client Reference Information

TO220/TS6P/D2PAK/TO-220F/TO247/TO263/TO252/TO3P/TO3PS/ITO220/SMA/SOD/ME/CLIP/Heat Sink

客户参考图片（非测试样品） Client Reference Photo (Non-tested sample)



声明Statement:

附录内容由申请者提供，申请者应对其真实性负责，CTI未核实其真实性。

The Appendix Information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.