



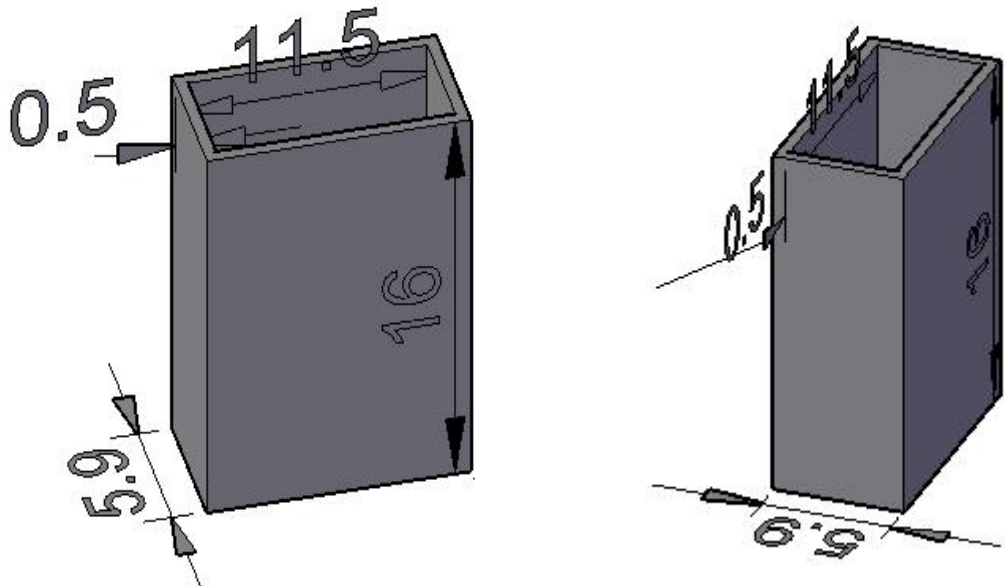
# 结构平面辅料承认书

文件编号: F-ACK-9703

页次: 2/5 页

物料编码: NDST-SP001-MT002	承认日期: 2021-04-19	版本	修改内容
物料名称: 硅胶帽套	产品型号: T0-220B	001	首次发行
尺寸: 16*11.5*5.9*0.5MM			
公差范围: +/-0.2			
材质: 硅胶			
颜色: 灰色			
印刷颜色: 无			
符合 ROHS 要求: <input checked="" type="checkbox"/> 是 <input type="checkbox"/> 否			
储存环境: 常温		使用有效期: 五年	

附图: (单位: mm)



尺寸编号	尺寸规格	测量工具	样品编号							判定结果		
			1#	2#	3#	4#	5#	6#	7#	OK	NG	
①	0.5MM	厚度计	0.51	0.50	0.50							
②	5.9MM	游标尺	5.9	6.0	5.9							
③	11.5MM	游标尺	11.5	11.6	11.5							
④	16.0MM	游标尺	16.1	16.0	16.0							





# 深圳市诺德斯特科技有限公司 材质证明书

产品名称: 灰色帽套 UL 编号 E338508, NDST-SP-001

材质组成: 高纯度的混练硅胶, 相应特制散热、防火等进口材料按一定的比例复合研制而成。

项目	单位	测试方法	测试值
颜色	--	目视	灰色
硬度	Shore C	ASTM D2240	75 度±5
比重	g/cm <sup>3</sup>	ASTM D297	1.9
延伸率	%	ASTM D412	10
耐温范围	℃	EN344	-40℃~+150℃
击穿电压	Kv	ASTM D149	≥5Kv
拉强度	Kgf/cm <sup>2</sup>	ASTM D412	30±3
体积电阻率	Ω-cm	ASTM D257	1.5*10 <sup>13</sup>
防火性能	--	UL-94	V-2
导热系数	W/m.k	ASTM D5470	1.0

核准: 夏艳丽





# 结构平面辅料承认书

文件编号: F-ACK-9703

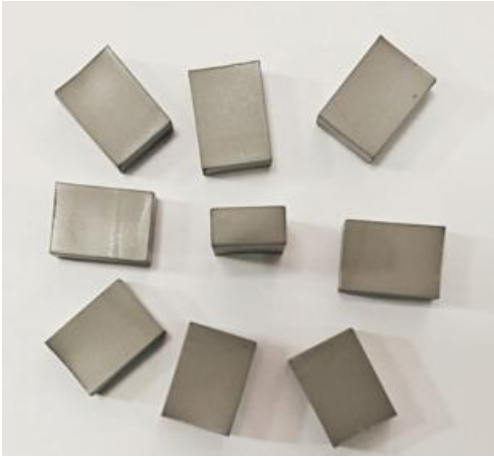
页次: 4/5 页

## 深圳市诺德斯特科技有限公司

### 包装说明:

- 1.产品名称: 灰色矽胶帽套.
- 2.产品规格: 16.0\*11.5\*5.9\*0.5MM.
- 3.最小包装数量: 1000PCS.
- 4.每箱数量: 1000PCS\*10 包=10000PCS

### 包装示意图片



待包装产品



把产品装入 PE 胶袋, 并贴上内标签



装贴好内标签的产品装入纸箱, 每箱 10 包



装箱, 并贴上外标签及 ROHS 标签后封箱





# 深圳市诺德斯特科技有限公司

## 产品详情

“专业生产 TO-220B 硅胶帽套”参数说明

是否有现货：	是	品牌：	深圳市诺德斯特科技有限公司
类型：	电子材料	加工方式：	其它
型号：	TO-220B	商标：	诺德斯特

矽胶帽套是以硅胶及玻璃纤维为基材经过特殊工艺生产而成的套状制品。

因其优良的的导热、绝缘、防震及装配方便等特性，被广泛应用于发热晶体管、二极管、三极管使用时直接安装在发热管上导热硅胶帽套建议用于低应压力处。

产品说明：具有辅助散热功能，可以替代原有的散热金属

不用固定可直接套于小中功率发热晶体管之上，减轻产品重量。

应用范围：功率器件、晶体功率管（三极管、二极管）。大功率发热管以及需要绝缘散热的地方

典型规格：TO-220A、TO-220C、TO-3PA、TO-3PB 等。



# 物质安全资料表

Material Safety Data Sheet



## 一. 物品名称与厂商资料:

Identification Of The Substance / Preparation And Company.

物品名称(Product Information): 导热硅胶片					
物品编号(Product Number): CP-120-T150					
制造商或供应商名称(Manufacturer/Supplier):					
深圳市诺德斯特科技有限公司(SHENZHEN NOU DE SI TE CHNOLOGY CO.,LTD.)					
地址/电话(Address/Phone): 深圳市宝安区观澜牛湖君新路法尔达工业园					
SHENZHEN BAOAN GUANLAN HUANGUAN ZHONGLU SHITAI GONGYIYUAN TEL: (86)0755-29527673/81368872					
紧急联络电话/传真电话: 电话(86)0755-29527673 传真: (86)0755-29527674					
Emergency Phone/Fax: Tel: (86)0755-29527673 Fax: (86)0755-29527674					
文件编号	Q0-10-001	版次	A.0	文件类别	环境手册
Document No.		Version		Document Type	

## 二. 成份辨别资料(Composition/Information On Ingredients):

### 硅胶(Silicone)

中英文名称(English Name):
同义名称(Synonyms): --
化学文摘社登记号码 Chemical Abstracts Number (CAS NO.): --
危害物质成份百分比 Percentage for Chemical Ingredieng (%): --

### 混合物(Mixture)

化学性质(Cheical Characteristics):		
危害物质成份之中英文名称	浓度或浓度范围(成百分比)	危害物质分类及图式
Hazardus Components Name	Concentration/Percentage	Hazard Symbols

# 物质安全资料表

## Material Safety Data Sheet

### 三. 危害辨别资料(Hazard Identification):

最重要危害与效应 Major Hazard Effect	健康危害效应(Hazard warnings for Health):无 (NO)
	环境影响(Hazard warnings for Environment):无 (NO)
Major Hazard Effect	物理性及化学性危害(Physical and Chemical Dangerous):无 (NO)
	特殊危害(Special Harm):无 (NO)
主要症状 Major State	无 (NO)
物品危害分类 Hazard classification	无 (NO)

### 四. 急救措施(Firs Aid Measures):

皮肤接触 Skin Contact	无影响 (NO)
眼睛接触 Eye Contact	及时就医(Call a physician immediately)
食入 Ingestion	及时就医(Call a physician immediately)

### 五. 灭火措施(Fire Fighting Measure):

适用灭火剂(Suitable extinguishing media):干粉(Foam, dry chemical, carbon dioxide)
灭火时可能遭遇之特殊危害 Special exposure hazards:无 (NO)
特殊灭火程序(Special Extinguishing procedure):移动燃源, 用灭火器或用水灭火 (Remove away from the heat, extinguish by water or other media)
消防人员之特殊防护设备(Special protection equipment):无特殊防护 (NO)

### 六. 泄漏处理方法(Accidental Release Measures):

个人应注意事项(Personal protection):
本产品为固体 无泄漏处理. (The product exists solid state, no leakage will happen.)
环境注意事项(Environment protection):无 (NO)
清理方法(Methods for Cleaning up):无 (NO)



# 物质安全资料表

## Material Safety Data Sheet

### 七. 安全处理与储存方法 (Handling and Storage):

处置 (Handling): 无需特殊防护 (No need)

储存 (Storage): 低温干燥, 远离明火, 避免阳光直射 (Store in a cool place, keep away from heat and flame)

### 八. 暴露预防措施 (Exposure Control/personal protection):

工程控制 (Engineering Control): 勿与阳光直接接触 (Don't expose under sunshine directly.)

卫生措施 (Hygienic procedures): 无资料 (N/A)

个人防护设备 (Personal protective Equipment): 无需防护 (No need)

### 九. 物理及化学性质 (Physical and Chemical properties/Characteristics):

物理状态 Appearance: 固态 (Solid)	形状 Form: 片状 (in piece)
颜色 Colour: 各种颜色 can be in different colors	气味 Odour: 无刺激性气味 (Odorless)
PH值 PH Value: 5~7	沸点/沸点范围 Boiling point/Boiling Range: >700°C
分解温度 (Decomposition temperature): 无资料 (N/A)	闪光点 Flash Point: 无资料 (N/A) 测试方法 Test Method: 无资料 (N/A)
自然温度 Spontaneous Temperature: 无资料 (N/A)	爆炸界限 Explosion Limits: 无资料 (N/A)
蒸气压 Vapor Pressure: 无资料 (N/A)	蒸气密度 Vapor Density: 无资料 (N/A)
密度 Specific Gravity: >1.6 (25°C)	溶解度 Solubility in water: 无资料 (N/A)

### 十. 安定性及反应性 (Stability and Reactivity):

安定性 (Stability): 安定 (Stable)

特殊状况下可能之危害反应 (Special Conditions of Hazardous Reaction): 无资料 (N/A)

某些生锈金属: 无资料 (N/A)

应避免之状况 (Conditions to Avoid): 无资料 (N/A)

应避免之物质 (Incompatibility): 强碱及强酸 (Strong alkalis and strong acids)



# 物质安全资料表

## Material Safety Data Sheet

### 十一. 毒性资料 (Toxicological information)

急毒性 (Acute toxicity): 无 (No)

局部效应 (Local Effects): 无 (No)

敏感性 (Sensitivity): 无 (No)

慢毒性及长期毒性 (Chronic toxicity): 无 (No)

特殊效应 (Special effect): 无 (No)

### 十二. 生态资料 (Ecological Information):

可能之环境影响/环境流布 (Possibility of Environmental Impact/move): 对环境无影响  
(No harmful effect to environment)

### 十三. 放弃处置方法 (Disposal Information):

放弃处置方法 (Disposal information): 可回收或再生 (Can be recycled)

### 十四. 运送资料 (Transport Information):

国际运送规定 (International Transport Regulation): 货柜装箱 及 散装箱 (Container)

联合国编号 The United Nations Number (Un-No): 无 (No)

国内运输规定 (Internal Transport regulation):

用容量  $\leq 10\text{Kg}$  的纸箱包装

Can be packed in box:  $\leq 10\text{Kg}$



### 十五. 法规资料 (Regulation Information)

适用法规 (Apply Regulation): 无资料 No

### 十六. 其它资料

制表单位 Make Unit	名称: 深圳市诺德斯特科技有限公司 (SHENZHEN NOU DE SI TE CHNOLOGY CO., LTD.)	
	电话 (86) 0755-29527673/81368872 Tel: (86) 0755-29527673/81368872	传真: (86) 0755-29527674 Fax: (86) 0755-29527674
制表人	职称:	姓名 (Name)
制表日期		

核准:

制表: 彭晓金



## Test Report

No. SZXEC2002543403

Date: 23 Oct 2020

Page 1 of 6

SHEN ZHEN SHI NUO DE SI TE TECHNOLOGY CO., LTD

FA ER DA GONG YE YUAN JUN XIN LU NIU HU GUAN LAN SHENZHEN CITY CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : SILICONE (in Chinese as:矽胶布 矽胶片 绝缘片 硅胶垫)

SGS Job No. : RP20-023016 - SZ  
Model No. : NDST  
Client Ref. Info. : UL, E338508, ndst-CP-120, ndst-SB-110, ndst-sp-001  
Date of Sample Received : 20 Oct 2020  
Testing Period : 20 Oct 2020 - 23 Oct 2020  
Test Requested : Selected test(s) as requested by client.  
Test Method : Please refer to next page(s).  
Test Results : Please refer to next page(s).  
Conclusion : Based on the performed tests on submitted sample(s), 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 RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of  
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch



Andy Ni  
Approved Signatory



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SZX20-025434.002	Gray silicone sheet

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected ( < MDL )
- (4) "-" = Not Regulated

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

Test Method : With reference to IEC 62321-4:2013+AMD1:2017, IEC62321-5:2013, IEC62321-7-2:2017, IEC 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	7
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND



# Test Report

No. SZXEC2002543403

Date: 23 Oct 2020

Page 3 of 6

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl Phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl Phthalate (BBP)	1000	mg/kg	50	ND
Bis(2-ethylhexyl) Phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalate (DIBP)	1000	mg/kg	50	ND

Notes :

- (1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863. IEC 62321 series is equivalent to EN 62321 series  
[https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP\\_ORG\\_ID,FSP\\_LANG\\_ID:1258637,25](https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25)
- (2) 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.
- (3) The restriction of DEHP, BBP, DBP and DIBP shall not apply to toys which are already subject to the restriction of DEHP, BBP, DBP and DIBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.

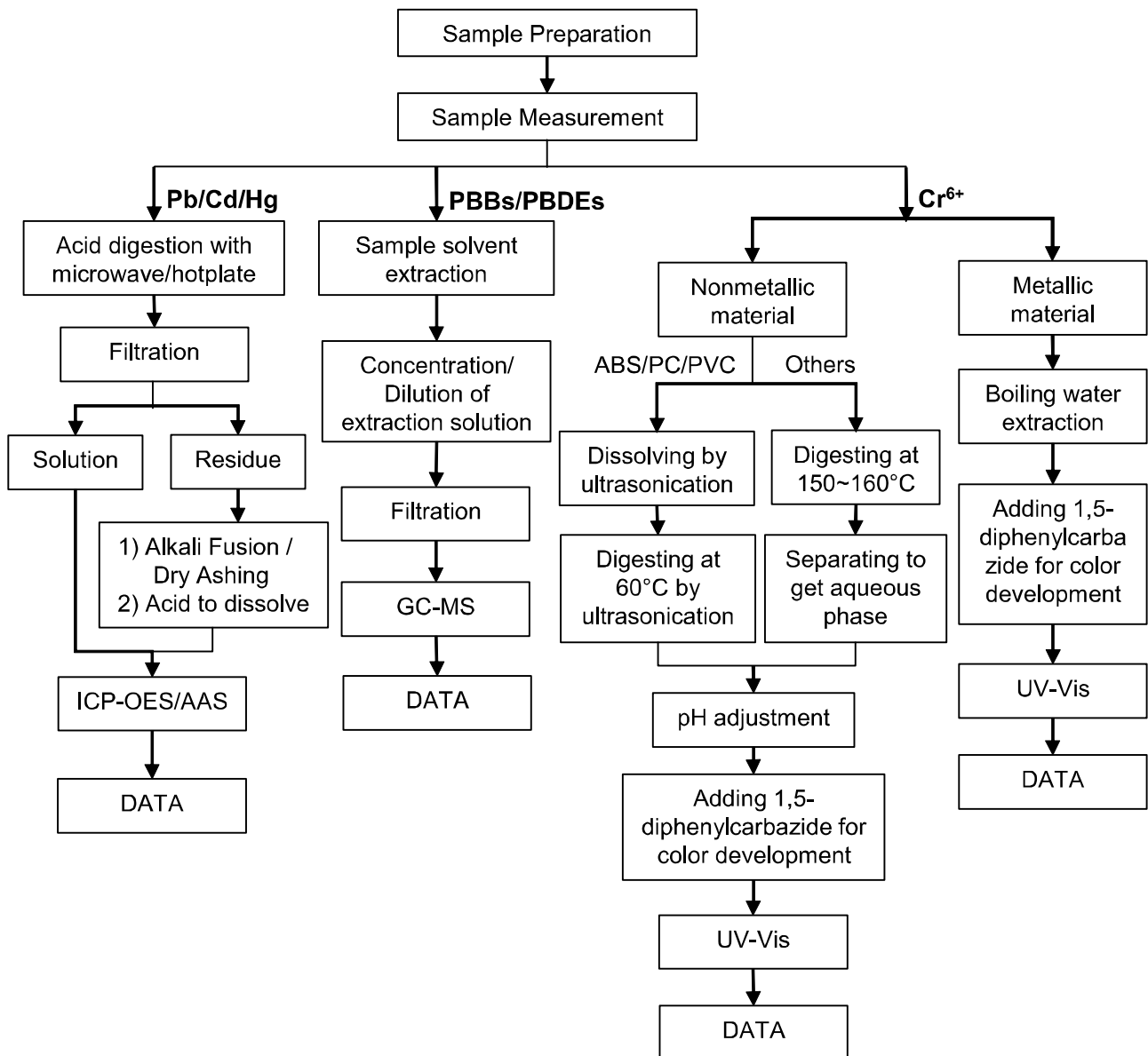


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ATTACHMENTS

**Pb/Cd/Hg/Cr<sup>6+</sup>/PBBs/PBDEs Testing Flow Chart**

1) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded).



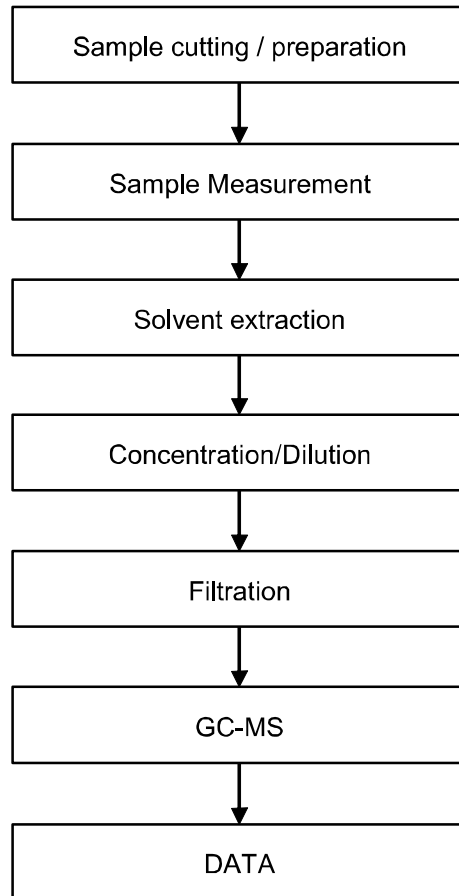
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### Phthalates Testing Flow Chart

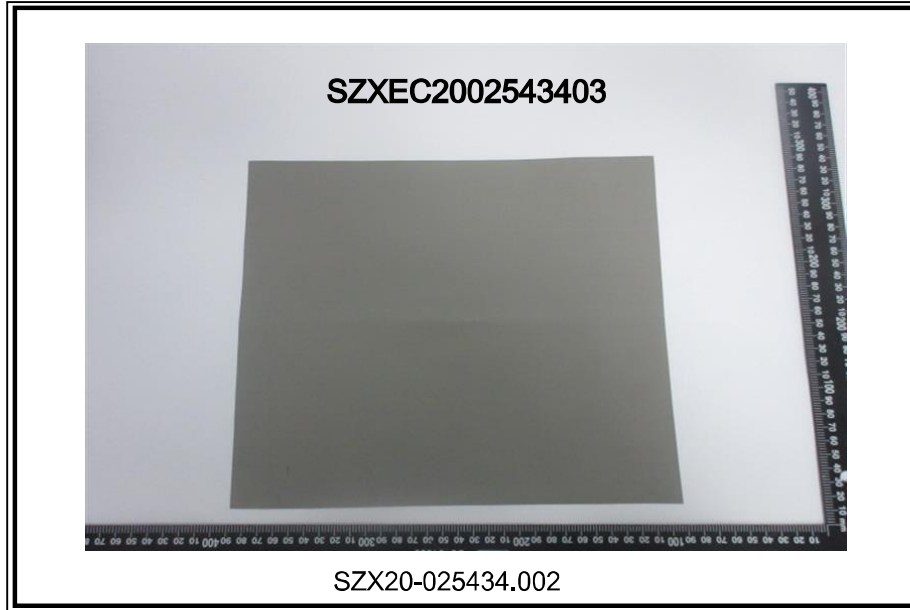


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## Test Report

No. SZXEC2002543403

Date: 23 Oct 2020

Page 1 of 6

SHEN ZHEN SHI NUO DE SI TE TECHNOLOGY CO., LTD

FA ER DA GONG YE YUAN JUN XIN LU NIU HU GUAN LAN SHENZHEN CITY CHINA

The following sample(s) was/were submitted and identified on behalf of the clients as : SILICONE (in Chinese as:矽胶布 矽胶片 绝缘片 硅胶垫)

SGS Job No. : RP20-023016 - SZ  
Model No. : NDST  
Client Ref. Info. : UL, E338508, ndst-CP-120, ndst-SB-110, ndst-sp-001  
Date of Sample Received : 20 Oct 2020  
Testing Period : 20 Oct 2020 - 23 Oct 2020  
Test Requested : Selected test(s) as requested by client.  
Test Method : Please refer to next page(s).  
Test Results : Please refer to next page(s).  
Conclusion : Based on the performed tests on submitted sample(s), 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 RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU.

Signed for and on behalf of  
SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch



Andy Ni  
Approved Signatory



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Test Results :

Test Part Description :

Specimen No.	SGS Sample ID	Description
SN1	SZX20-025434.002	Gray silicone sheet

Remarks :

- (1) 1 mg/kg = 1 ppm = 0.0001%
- (2) MDL = Method Detection Limit
- (3) ND = Not Detected ( < MDL )
- (4) "-" = Not Regulated

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

Test Method : With reference to IEC 62321-4:2013+AMD1:2017, IEC62321-5:2013, IEC62321-7-2:2017, IEC 62321-6:2015 and IEC62321-8:2017, analyzed by ICP-OES, UV-Vis and GC-MS.

Test Item(s)	Limit	Unit	MDL	002
Cadmium (Cd)	100	mg/kg	2	ND
Lead (Pb)	1,000	mg/kg	2	7
Mercury (Hg)	1,000	mg/kg	2	ND
Hexavalent Chromium (Cr(VI))	1,000	mg/kg	8	ND
Sum of PBBs	1,000	mg/kg	-	ND
Monobromobiphenyl	-	mg/kg	5	ND
Dibromobiphenyl	-	mg/kg	5	ND
Tribromobiphenyl	-	mg/kg	5	ND
Tetrabromobiphenyl	-	mg/kg	5	ND
Pentabromobiphenyl	-	mg/kg	5	ND
Hexabromobiphenyl	-	mg/kg	5	ND
Heptabromobiphenyl	-	mg/kg	5	ND
Octabromobiphenyl	-	mg/kg	5	ND
Nonabromobiphenyl	-	mg/kg	5	ND
Decabromobiphenyl	-	mg/kg	5	ND
Sum of PBDEs	1,000	mg/kg	-	ND
Monobromodiphenyl ether	-	mg/kg	5	ND
Dibromodiphenyl ether	-	mg/kg	5	ND
Tribromodiphenyl ether	-	mg/kg	5	ND
Tetrabromodiphenyl ether	-	mg/kg	5	ND
Pentabromodiphenyl ether	-	mg/kg	5	ND





# Test Report

No. SZXEC2002543403

Date: 23 Oct 2020

Page 3 of 6

<u>Test Item(s)</u>	<u>Limit</u>	<u>Unit</u>	<u>MDL</u>	<u>002</u>
Hexabromodiphenyl ether	-	mg/kg	5	ND
Heptabromodiphenyl ether	-	mg/kg	5	ND
Octabromodiphenyl ether	-	mg/kg	5	ND
Nonabromodiphenyl ether	-	mg/kg	5	ND
Decabromodiphenyl ether	-	mg/kg	5	ND
Dibutyl Phthalate (DBP)	1000	mg/kg	50	ND
Butyl benzyl Phthalate (BBP)	1000	mg/kg	50	ND
Bis(2-ethylhexyl) Phthalate (DEHP)	1000	mg/kg	50	ND
Diisobutyl Phthalate (DIBP)	1000	mg/kg	50	ND

Notes :

(1) The maximum permissible limit is quoted from RoHS Directive (EU) 2015/863.

IEC 62321 series is equivalent to EN 62321 series

[https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP\\_ORG\\_ID,FSP\\_LANG\\_ID:1258637,25](https://www.cenelec.eu/dyn/www/f?p=104:30:1742232870351101:::FSP_ORG_ID,FSP_LANG_ID:1258637,25)

(2) 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.

(3) The restriction of DEHP, BBP, DBP and DIBP shall not apply to toys which are already subject to the restriction of DEHP, BBP, DBP and DIBP through entry 51 of Annex XVII to Regulation (EC) No 1907/2006.



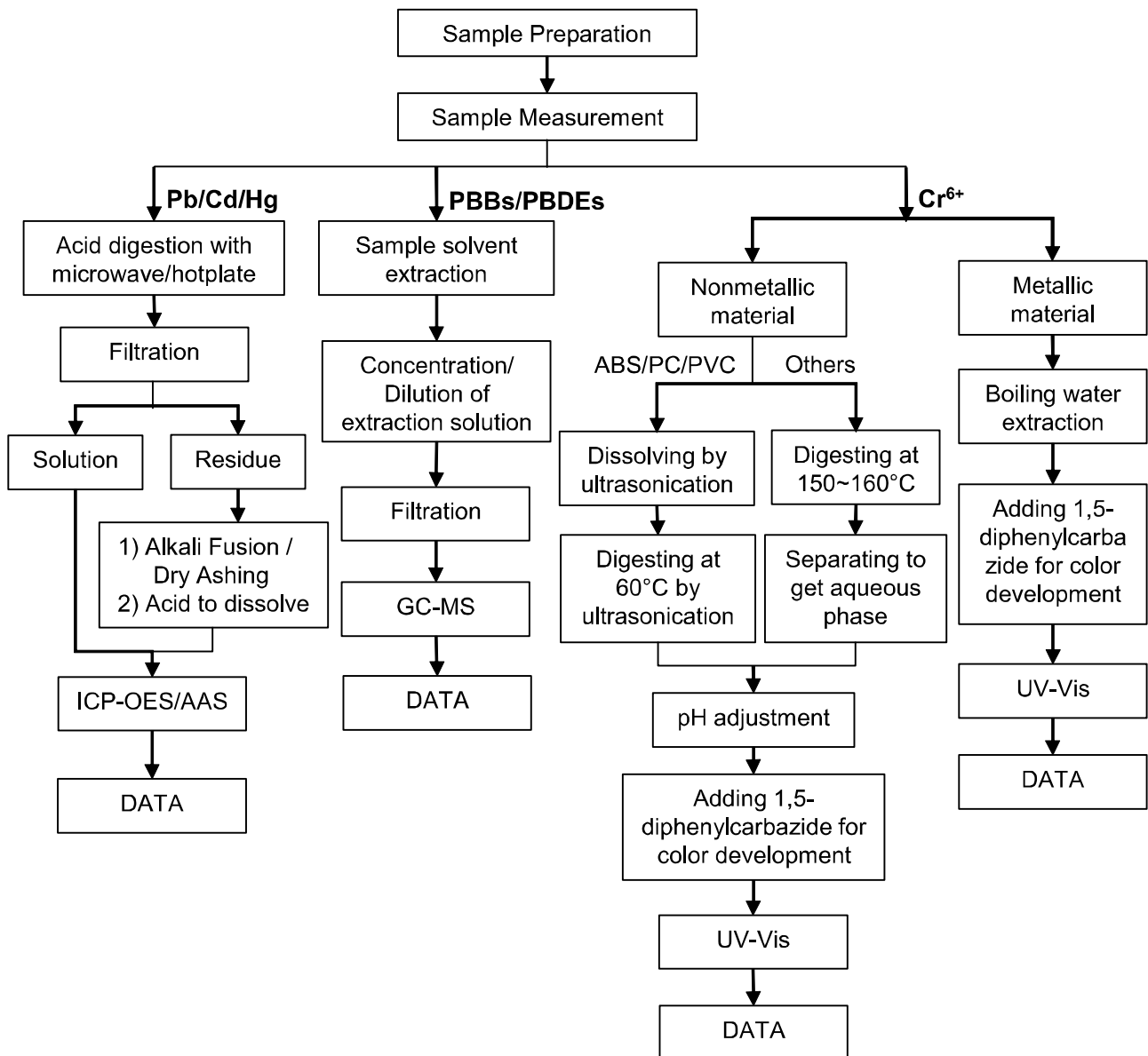
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**Pb/Cd/Hg/Cr<sup>6+</sup>/PBBs/PBDEs Testing Flow Chart**

1) These samples were dissolved totally by pre-conditioning method according to below flow chart. (Cr<sup>6+</sup> and PBBs/PBDEs test method excluded).



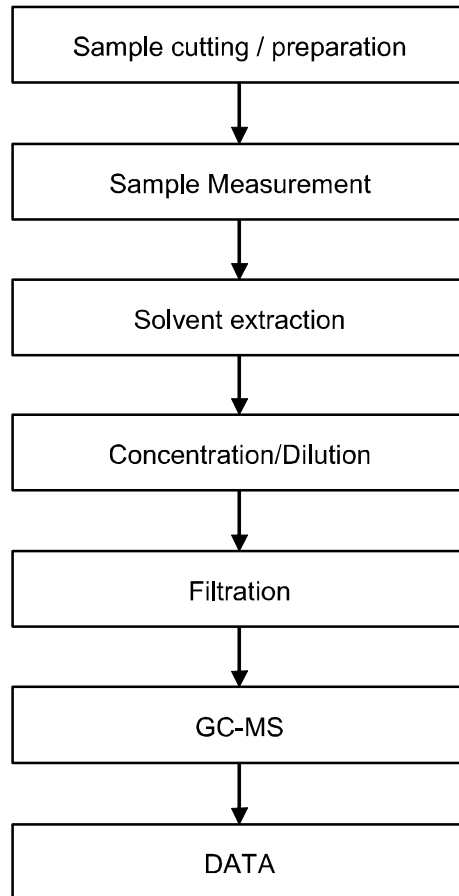
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### Phthalates Testing Flow Chart

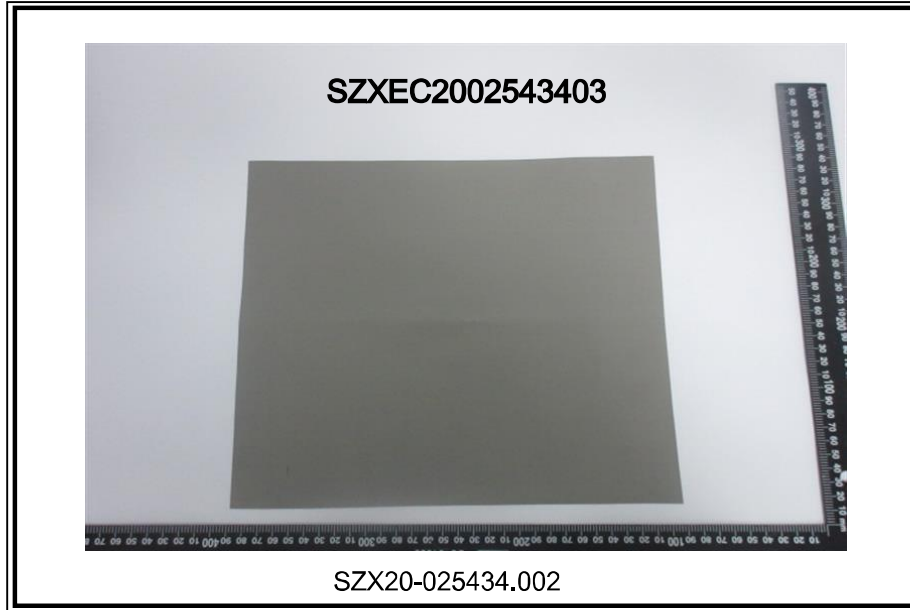


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Sample photo:



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