

测试报告 (SVHC)

No. SHAEC1700415102

日期: 2017年01月13日 第1页,共14页

金安国纪科技股份有限公司/上海国纪电子材料有限公司/国际层压板材有限公司/金安国纪科技(珠海)有限公司/金安国纪科技(杭州)有限公司
上海市松江区工业园区宝胜路33号

以下测试之样品是由申请者所提供及确认: FR-4.0环氧玻纤板

SGS工作编号: SP17-000648 - SH

样品接收日期: 2017年01月06日

测试周期: 2017年01月06日 - 2017年01月13日

测试要求: 根据客户要求,

(i) 基于欧洲化学品管理署截止2016年6月20日公布的供授权审议的高关注物质候选清单(根据欧盟第1907/2006号REACH法规), 对169种高关注物质(SVHC)进行筛分测试。

(ii) 基于欧洲化学品管理署于2016年9月6日公布的供授权审议的高关注物质咨询清单(根据欧盟第1907/2006号REACH法规), 对6种高关注物质(SVHC)进行筛分测试。

测试结果: 请参见下一页

总结:

根据具体的范围和筛分测试, 所提交样品中SVHC测试结果 $\leq 0.1\%$ (w/w)。	通过
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通标标准技术服务(上海)有限公司
授权签名

Marry Ma 马广媛
批准签署人

本报告是编号为SHAEC1700415101报告的中文版本。



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备注:

- (1) 本报告所涉及的关于特定高关注物质的化学分析是根据欧洲化学品管理署发布的下列文件, 利用现有的分析技术完成的。

<http://echa.europa.eu/web/guest/candidate-list-table>

这些文件清单由欧洲化学品管理署评估, 将来可能会有变化。

- (2) 关于物品:

根据欧盟第1907/2006 (EC) 号法规, 如果满足以下两个条件, 如果物质符合第57条中的标准并根据第59条第一款被确定, 物品的任何欧洲制造商或进口商应根据第7条第4款向欧盟化学品管理署进行通报: (a) 候选清单中的物质在物品中的总含量超过1吨/年/生产商或进口商; (b) 候选清单中的物质在物品中的总含量以质量分数计超过0.1% 的浓度。

欧盟第1907/2006 (EC) 号法规第33条规定, 含有满足第57条中的标准并根据第59条第一款被确定且质量分数大于0.1%的物质的物品的所有供应商应向物品接受者提供其可获取的充足信息, 以使物品使用安全, 这些信息至少包括含有的候选清单中物质的名称。

SGS采用欧盟法院对REACH物品定义的裁定, 除非另有说明。详细的解释请见下列网址:

<http://www.sgs.com/-/media/global/documents/technical-documents/technical-bulletins/sgs-crs-position-statement-on-svhc-in-articles-a4-en-16-06.pdf?la=en>

- (3) 关于材料:

报告中的测试结果是基于测试样品。如样品是均一材质, 当其构成成品时, 此结果不能代表成品中的SVHC浓度。如样品为均一材质等比例合测, 这些材质也可能来自不同的物品。

如果样品是一种物质或混合物, 并且直接出口到欧盟, 客户有责任遵守欧盟第1907/2006号REACH法规第31条供应链信息传递的义务和附件十四中的授权高关注物质授权的责任。

- (4) 关于物质和配制品:

如果样品中高关注物质的浓度超过0.1% (w/w) 和/或欧盟第1272/2008号CLP法规和欧盟委员会条例第790/2009号中设定的特殊浓度限值, 建议客户根据欧盟第1907/2006号REACH法规对有关高关注物质准备安全数据表(SDS)以符合供应链传递信息的义务, 如:

- 根据欧盟第1272/2008号CLP法规被列为有害物质。

- 根据危险混合物指令1999/45/EC或欧盟第1272/2008号CLP法规被列为危险混合物, 而其浓度大于或等于危险混合物指令1999/45/EC第3条(3)中规定的限制数值或欧盟第1272/2008号CLP法规附件六第3部分列出的较低值;或

- 根据危险混合物指令1999/45/EC并未列为危险混合物, 但包含:

(a) 对人类健康或环境有害的物质, 而在固体或液体混合物(即非气体混合物)中其浓度 $\geq 1\%$ (w/w) 或在气体混合物中占体积 $\geq 0.2\%$, 或

(b) PBT或vPvB物质, 在固体或液体混合物(即非气体混合物)中浓度 $\geq 0.1\%$ (w/w), 或

(c) 授权审议的高关注物质候选清单上的物质(除上述以外的原因)在非气体混合物中的浓度 $\geq 0.1\%$



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(w/w), 或
(d) 设有欧洲范围内工作场所接触限值的物质。

(5) 如果样品中SVHC的测试结果超过报告限, 建议客户进一步定量分析检测含有SVHC的组分并且得到SVHC物质的准确浓度。

测试样品:

测试样品描述:

样品编号	SGS样品ID	描述
SN1	SHA17-004151.001	黄色固体

测试方法:

SGS内部方法-SHTC-CHEM-SOP-97-T, SHTC-CHEM-SOP-302-T, 采用 ICP-OES、UV-VIS、GC-MS、HPLC-DAD/MS 和比色法分析。



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测试结果: (SVHC候选清单中的高关注物质)

批次	物质名称	CAS No.	001 浓度 (%)	RL (%)
-	所有测试的候选清单中的SVHC	-	ND	-

测试结果: (SVHC咨询清单中的高关注物质)

批次	物质名称	CAS No.	001 浓度 (%)	RL (%)
-	所有测试的咨询清单中的SVHC	-	ND	-

注释:

- (1) 上表仅显示检出的SVHC, 低于RL的SVHC没有列出。所有测试的SVHC请参见附录
- (2) RL = 报告极限值, 所有RL是基于均一材质的测试。
ND = 未检出 (< RL), ND针对SVHC物质。
- (3) Δ 六溴环十二烷(HBCDD) 的非对映异构体 α -HBCDD、 β -HBCDD、 γ -HBCDD的CAS NO分别为134237-50-6, 134237-51-7, 134237-52-8。
☆甲基六氢邻苯二甲酸酐, 4-甲基六氢邻苯二甲酸酐, 1-甲基六氢邻苯二甲酸酐, 3-甲基六氢邻苯二甲酸酐的CAS No: 25550-51-0, 19438-60-9, 48122-14-1, 57110-29-9; 及其EC No: 247-094-1, 243-072-0, 256-356-4, 260-566-1。
- (4) * 测试结果是由选定的元素或标记物的结果并基于最坏的情况计算得出。详细信息请参见SGS REACH网站: www.reach.sgs.com/substance-of-very-high-concern-analysis-information-page.htm
硼化合物的结果由ICP-OES测试的总硼(液体, 粉末, 膏体类样品)和水提取(其他样品)的硼元素结果换算得出。
RL = 0.005% 是针对元素(例如钴、砷、铅、铬(VI)、铝、锆、硼、锶、锌、铈、钽、钷和镉), 除了钷的RL= 0.0005%, 硼的RL= 0.0025%(仅对四氟硼酸铅)。
- (5) § 只有当物质包含米氏酮(CAS No.: 90-94-8)或米氏碱(CAS No.: 101-61-1)的浓度 $\geq 0.1\%$ (w / w)的情况下, 该物质才被提议定为SVHC。
- (6) / = 咨询清单中的高关注物质



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附录

所有测试的SVHC:

批次	序号	物质名称	CAS No.	RL (%)
I	1	4,4'-二氨基二苯甲烷(MDA)	101-77-9	0.050
I	2	2,4,6-三硝基-5-叔丁基间二甲苯(二甲苯麝香)	81-15-2	0.050
I	3	C10-13 氯代烃(短链氯化石蜡)	85535-84-8	0.050
I	4	蒽	120-12-7	0.050
I	5	邻苯二甲酸丁苄酯(BBP)	85-68-7	0.050
I	6	邻苯二甲酸二(2-乙基己基)酯(DEHP)	117-81-7	0.050
I	7	氧化双三丁基锡(TBTO)	56-35-9	0.050
I	8	二氯化钴*	7646-79-9	0.005
I	9	五氧化二砷*	1303-28-2	0.005
I	10	三氧化二砷*	1327-53-3	0.005
I	11	邻苯二甲酸二丁酯(DBP)	84-74-2	0.050
I	12	六溴环十二烷(HBCDD) 及其非对映异构体(α -HBCDD, β -HBCDD, γ -HBCDD) Δ	25637-99-4, 3194- 55-6	0.050
I	13	砷酸氢铅*	7784-40-9	0.005
I	14	重铬酸钠*	7789-12-0, 10588-01-9	0.005
I	15	三乙基砷酸酯*	15606-95-8	0.005
II	16	2,4-二硝基甲苯	121-14-2	0.050
II	17	丙烯酰胺	79-06-1	0.050
II	18	蒽油*	90640-80-5	0.050
II	19	蒽油, 蒽糊*	90640-81-6	0.050
II	20	蒽油, 蒽糊, 蒽馏分*	91995-15-2	0.050



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附录

所有测试的SVHC:

批次	序号	物质名称	CAS No.	RL (%)
II	21	葱油, 葱糊, 轻油*	91995-17-4	0.050
II	22	葱油, 含葱量少*	90640-82-7	0.050
II	23	邻苯二甲酸二异丁酯	84-69-5	0.050
II	24	铬酸铅*	7758-97-6	0.005
II	25	钼铬红(C.I.颜料红104)*	12656-85-8	0.005
II	26	铅铬黄(C.I.颜料黄34)*	1344-37-2	0.005
II	27	沥青, 煤焦油, 高温*	65996-93-2	0.050
II	28	磷酸三(2-氯乙基)酯	115-96-8	0.050
III	29	重铬酸铵*	7789-09-5	0.005
III	30	硼酸*	10043-35-3, 11113-50-1	0.005
III	31	无水四硼酸钠*	1303-96-4, 1330-43-4, 12179-04-3	0.005
III	32	铬酸钾*	7789-00-6	0.005
III	33	重铬酸钾*	7778-50-9	0.005
III	34	铬酸钠*	7775-11-3	0.005
III	35	水合硼酸钠*	12267-73-1	0.005
III	36	三氯乙烯	79-01-6	0.050
IV	37	乙二醇乙醚	110-80-5	0.050
IV	38	乙二醇单甲醚	109-86-4	0.050
IV	39	铬酸, 铬酸及重铬酸低聚物, 重铬酸*	7738-94-5 - 13530-68-2	0.005



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附录

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IV	40	三氧化铬*	1333-82-0	0.005
IV	41	碳酸钴*	513-79-1	0.005
IV	42	乙酸钴*	71-48-7	0.005
IV	43	硝酸钴*	10141-05-6	0.005
IV	44	硫酸钴*	10124-43-3	0.005
V	45	1,2,3-三氯丙烷	96-18-4	0.050
V	46	1,2-苯二酸-二(C6-8支链)烷基酯(富C7)	71888-89-6	0.050
V	47	1,2-苯二酸-二(C7-11支链与直链)烷基(醇)酯	68515-42-4	0.050
V	48	1-甲基-2-吡咯烷酮	872-50-4	0.050
V	49	乙二醇乙醚醋酸酯	111-15-9	0.050
V	50	联氨	7803-57-8, 302-01-2	0.050
V	51	铬酸铯*	7789-06-2	0.005
VI	52	1,2-二氯乙烷	107-06-2	0.050
VI	53	4,4'-二氨基-3,3'-二氯二苯甲烷	101-14-4	0.050
VI	54	2-甲氧基苯胺	90-04-0	0.050
VI	55	对特辛基苯酚	140-66-9	0.050
VI	56	硅酸铝耐火陶瓷纤维*	650-017-00-8 (Index no.)	0.005
VI	57	砷酸*	7778-39-4	0.005
VI	58	二乙二醇二甲醚	111-96-6	0.050
VI	59	邻苯二甲酸二甲氧基乙酯	117-82-8	0.050



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测试报告 (SVHC)

No. SHAEC1700415102

日期: 2017年01月13日 第8页,共14页

附录

所有测试的SVHC:

批次	序号	物质名称	CAS No.	RL (%)
VI	60	砷酸钙*	7778-44-1	0.005
VI	61	铬酸铬*	24613-89-6	0.005
VI	62	甲醛与苯胺的低聚物	25214-70-4	0.050
VI	63	叠氮化铅*	13424-46-9	0.005
VI	64	苦味酸铅*	6477-64-1	0.005
VI	65	史蒂芬酸铅*	15245-44-0	0.005
VI	66	N,N-二甲基乙酰胺	127-19-5	0.050
VI	67	氢氧化铬酸锌*	49663-84-5	0.005
VI	68	酚酞	77-09-8	0.050
VI	69	氢氧化铬酸锌钾*	11103-86-9	0.005
VI	70	砷酸铅*	3687-31-8	0.005
VI	71	氧化锆硅酸铝耐火陶瓷纤维*	650-017-00-8 (Index no.)	0.005
VII	72	C.I.碱性蓝26§	2580-56-5	0.050
VII	73	C.I.碱性紫3§	548-62-9	0.050
VII	74	三乙二醇二甲醚(TEGDME)	112-49-2	0.050
VII	75	乙二醇二甲醚(EGDME)	110-71-4	0.050
VII	76	4,4'-二(二甲氨基)二苯甲酮(米氏酮)	90-94-8	0.050
VII	77	4,4'-二(二甲氨基)-4"-甲氨基三苯甲醇§	561-41-1	0.050
VII	78	三氧化二硼*	1303-86-2	0.005
VII	79	甲酰胺	75-12-7	0.050



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测试报告 (SVHC)

No. SHAEC1700415102

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附录

所有测试的SVHC:

批次	序号	物质名称	CAS No.	RL (%)
VII	80	甲基磺酸铅*	17570-76-2	0.005
VII	81	N,N,N',N'-四甲基-4,4'-二氨基二苯甲烷(米氏碱)	101-61-1	0.050
VII	82	1,3,5-三(环氧乙基甲基)-1,3,5-三嗪-2,4,6-(1H, 3H,5H)-三酮(TGIC)	2451-62-9	0.050
VII	83	C.I.溶剂蓝4§	6786-83-0	0.050
VII	84	1,3,5-三-[(2S和2R)-2,3-环氧丙基]-1,3,5-三嗪-2,4,6-(1H, 3H, 5H)-三酮(β-TGIC)	59653-74-6	0.050
VIII	85	二盐基邻苯二甲酸铅*	69011-06-9	0.005
VIII	86	1,2-苯二酸-二(支链与直链)戊基酯	84777-06-0	0.050
VIII	87	乙二醇二乙醚	629-14-1	0.050
VIII	88	1-溴丙烷	106-94-5	0.050
VIII	89	3-乙基-2-甲基-2-(3-甲基丁基)-1,3-恶唑烷	143860-04-2	0.050
VIII	90	对特辛基苯酚乙氧基醚	-	0.050
VIII	91	4,4'-二氨基-3,3'-二甲基二苯甲烷	838-88-0	0.050
VIII	92	4,4'-二氨基二苯醚及其盐	101-80-4	0.050
VIII	93	4-氨基偶氮苯	60-09-3	0.050
VIII	94	2,4-二氨基甲苯	95-80-7	0.050
VIII	95	4-壬基(支链与直链)苯酚	-	0.050
VIII	96	2-甲氧基-5-甲基苯胺	120-71-8	0.050
VIII	97	碱式乙酸铅*	51404-69-4	0.005
VIII	98	4-氨基联苯	92-67-1	0.050
VIII	99	十溴二苯醚(DecaBDE)	1163-19-5	0.050



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测试报告 (SVHC)

No. SHAEC1700415102

日期: 2017年01月13日 第10页,共14页

附录

所有测试的SVHC:

批次	序号	物质名称	CAS No.	RL (%)
VIII	100	环己烷-1,2-二羧酸酐,顺式-环己烷-1,2-二羧酸酐,反式-环己烷-1,2-二羧酸酐	85-42-7, 13149-00-3, 14166-21-3	0.050
VIII	101	偶氮二甲酰胺	123-77-3	0.050
VIII	102	二丁基二氯化锡(DBTC)	683-18-1	0.050
VIII	103	硫酸二乙酯	64-67-5	0.050
VIII	104	邻苯二甲酸二异戊酯	605-50-5	0.050
VIII	105	硫酸二甲酯	77-78-1	0.050
VIII	106	地乐酚	88-85-7	0.050
VIII	107	双(十八烷基)二氧化三铅*	12578-12-0	0.005
VIII	108	C16-18-脂肪酸铅*	91031-62-8	0.005
VIII	109	呋喃	110-00-9	0.050
VIII	110	全氟十一烷酸	2058-94-8	0.050
VIII	111	全氟十四烷酸	376-06-7	0.050
VIII	112	甲基六氢邻苯二甲酸酐,4-甲基六氢邻苯二甲酸酐,1-甲基六氢邻苯二甲酸酐,3-甲基六氢邻苯二甲酸酐	☆	0.050
VIII	113	四氟硼酸铅*	13814-96-5	0.005
VIII	114	氨基氰铅盐*	20837-86-9	0.005
VIII	115	硝酸铅*	10099-74-8	0.005
VIII	116	一氧化铅*	1317-36-8	0.005
VIII	117	碱式硫酸铅*	12036-76-9	0.005
VIII	118	四氧化三铅*	1314-41-6	0.005
VIII	119	钛酸铅*	12060-00-3	0.005



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测试报告 (SVHC)

No. SHAEC1700415102

日期: 2017年01月13日 第11页,共14页

附录

所有测试的SVHC:

批次	序号	物质名称	CAS No.	RL (%)
VIII	120	钛酸铅铅*	12626-81-2	0.005
VIII	121	甲氧基乙酸	625-45-6	0.050
VIII	122	1,2-环氧丙烷	75-56-9	0.050
VIII	123	N,N-二甲基甲酰胺	68-12-2	0.050
VIII	124	N-甲基乙酰胺	79-16-3	0.050
VIII	125	邻苯二甲酸正戊基异戊基酯	776297-69-9	0.050
VIII	126	邻-氨基偶氮甲苯	97-56-3	0.050
VIII	127	2-氨基甲苯	95-53-4	0.050
VIII	128	全氟十三烷酸	72629-94-8	0.050
VIII	129	硫酸四氧化五铅*	12065-90-6	0.005
VIII	130	铅锑黄*	8012-00-8	0.005
VIII	131	掺杂铅的硅酸钡*	68784-75-8	0.005
VIII	132	硅酸铅*	11120-22-2	0.005
VIII	133	二碱式亚硫酸铅*	62229-08-7	0.005
VIII	134	四乙基铅*	78-00-2	0.005
VIII	135	硫酸三氧化四铅*	12202-17-4	0.005
VIII	136	全氟十二烷酸	307-55-1	0.050
VIII	137	碱式碳酸铅*	1319-46-6	0.005
VIII	138	二碱式亚磷酸铅*	12141-20-7	0.005
IX	139	4-壬基(支链与直链)苯酚乙氧基醚	-	0.050
IX	140	全氟辛酸铵(APFO)	3825-26-1	0.050



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测试报告
(SVHC)

No. SHAEC1700415102

日期: 2017年01月13日 第12页,共14页

附录

所有测试的SVHC:

批次	序号	物质名称	CAS No.	RL (%)
IX	141	氧化镉*	1306-19-0	0.005
IX	142	镉*	7440-43-9	0.005
IX	143	邻苯二甲酸二正戊酯(DPP)	131-18-0	0.050
IX	144	全氟辛酸(PFOA)	335-67-1	0.050
X	145	硫化镉*	1306-23-6	0.005
X	146	邻苯二甲酸二正己酯	84-75-3	0.050
X	147	C.I.直接红28	573-58-0	0.050
X	148	C.I.直接黑38	1937-37-7	0.050
X	149	2-巯基咪唑啉	96-45-7	0.050
X	150	乙酸铅*	301-04-2	0.005
X	151	磷酸三二甲苯酯	25155-23-1	0.050
XI	152	邻苯二甲酸二(支链与直链)己基酯	68515-50-4	0.050
XI	153	氯化镉*	10108-64-2	0.005
XI	154	水合过硼酸钠*	-	0.005
XI	155	过硼酸钠*	7632-04-4	0.005
XII	156	2-(2H-苯并三唑-2-基)-4,6-二叔戊基苯酚(UV-328)	25973-55-1	0.050
XII	157	2-苯并三唑-2-基-4,6-二叔丁基苯酚(UV-320)	3846-71-7	0.050
XII	158	二正辛基-双(2-乙基己基巯基乙酸酯)锡 (DOTE)	15571-58-1	0.050
XII	159	氟化镉 *	7790-79-6	0.005
XII	160	硫酸镉 *	10124-36-4,31119-53	0.005

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测试报告 (SVHC)

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附录

所有测试的SVHC:

批次	序号	物质名称	CAS No.	RL (%)
XII	161	二正辛基-双(2-乙基己基巯基乙酸酯)锡(DOTE)和单辛基-三(2-乙基己基巯基乙酸酯)锡(MOTE)的反应物	-	0.050
XIII	162	1,2-苯二甲酸, 二(C6-10)烷基酯 / 1,2-苯二甲酸, 混合二己二辛二癸酯, 其中邻苯二甲酸二己酯含量≥0.3%	68515-51-5,68648-93 -1	0.050
XIII	163	5-二级丁基-2-(2,4-二甲基环己-3-烯-1-基)-5-甲基-1,3-二恶烷[1], 5-二级丁基-2-(4,6-二甲基环己-3-烯-1-基)-5-甲基-1,3-二恶烷[2] [任何[1]和[2]或者其任意组合的单独异构体或其任何组合]		0.050
XIV	164	1,3-丙磺酸内酯	1120-71-4	0.050
XIV	165	2,4-二叔丁基-6-(5-氯苯并三唑-2-基)苯酚(UV-327)	3864-99-1	0.050
XIV	166	2-(2H-苯并三唑-2-基)-4-叔丁基-6-仲丁基苯酚(UV-350)	36437-37-3	0.050
XIV	167	硝基苯	98-95-3	0.050
XIV	168	全氟壬酸及其钠盐和铵盐	375-95-1,21049-39-8, 4149-60-4	0.050
XV	169	苯并(a)芘	50-32-8	0.050
/	170	4,4'-异亚丙基联苯酚(双酚A)	80-05-7	0.050
/	171	4-庚基(支链与直链)苯酚	-	0.050
/	172	4-叔丁基苯酚	98-54-4	0.050
/	173	1,2,4-苯三酸酐(偏苯三酸酐)	552-30-7	0.050
/	174	全氟癸酸(PFDA)及其钠盐和铵盐	3108-42-7 335-76-2 3830-45-3	0.050
/	175	对叔戊基苯酚	80-46-6	0.050



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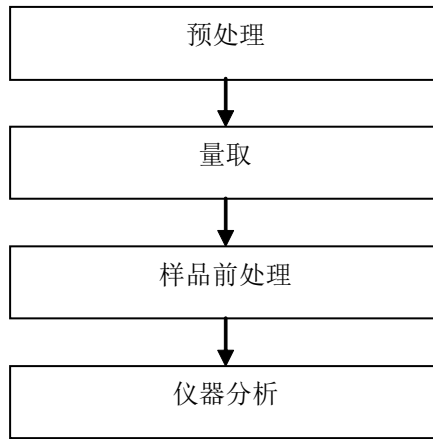
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SVHC 测试流程图

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