

# 综合评估结论

——球铝生产废料制备平板滤膜的技术

1.该技术以球形  $\alpha\text{-Al}_2\text{O}_3$  生产废料为原料，生产长 1040mm×宽 250mm×厚 12mm、膜面积为  $0.5\text{m}^2$  的平板陶瓷微滤膜，断裂模数平均值大于  $30\text{N}/\text{mm}^2$ 。

2.该技术满足循环经济的要求，球形  $\alpha\text{-Al}_2\text{O}_3$  生产废料利用率可达到 90%以上。

3.该技术生产的平板陶瓷微滤膜，在生活废水处理（ $50\text{m}^3/\text{d}$ ）、给水处理（ $600\text{m}^3/\text{d}$ ）开展了工程示范，已经连续稳定运行半年。

4.建议技术持有方加大该技术生产的平板陶瓷微滤膜在特种污废水处理方面的推广应用。

# 技术检测报告

——球铝生产废料制备平板滤膜的技术

## 测试报告 (SVHC)

No. CANEC1914433702

日期: 2019年07月31日 第1页,共18页

雅安百图新材料股份有限公司  
雅安市名山区雅安工业园区

以下测试之样品是由申请者所提供及确认: 球形氧化铝

SGS工作编号: 20170033 - CQ

样品接收日期: 2019年07月23日

测试周期: 2019年07月23日 - 2019年07月31日

测试要求: 根据客户要求,

(i) 基于欧洲化学品管理署截止2019年7月16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201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
--	----

通标标准技术服务有限公司广州分公司  
授权签名

Jessie Li 李嘉欣  
批准签署人



## 测试报告 (SVHC)

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日期: 2019年07月31日 第2页,共18页

### 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. REACH法规义务:

#### 2.1关于物品:

告知:

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。

通报:

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。

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>

#### 2.2 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。

#### 2.3 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法规及其修订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)以符合供应链通信的义务, 如

-根据欧盟第1272/2008号CLP法规被列为有害物质。

-根据欧盟第1272/2008号CLP法规被列为有害混合物, 而当中物质的浓度大于或等于欧盟第1272/2008号CLP法规列出的浓度限值;或

-根据欧盟第1272/2008号CLP法规并未列为有害混合物, 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)中个别浓度 $\geq 0.1\%$ (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)在个别非气体混合物中的浓度 $\geq 0.1\%$ (w/w), 或



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(d) 设有欧洲范围内工作场所接触限值的物质。

3. 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	CAN19-144337.001	白色粉末

测试方法:

SGS内部方法- GZTC CHEM-TOP-092-01, GZTC CHEM-TOP-092-02, 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	-



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## 测试报告 (SVHC)

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### 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. \* 测试结果是由选定的元素的结果并基于最坏的情况计算得出; \*\* 测试结果是由选定的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:  
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
  4. RL = 0.005% 是针对元素(例如钴、砷、铅、铬(VI)、铝、锆、硼、镉、锌、锑、钛、钡和镉), 除了钼的RL= 0.0005%, 硼的RL= 0.0025%(仅对四氟硼酸铅)。
  5. 硼化合物的结果由ICP-OES测试的总的硼元素结果换算得出。
  6. 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。
  7. ☆ 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。
  8. § 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≥ 0.1%(w / w)的情况下, 该物质才被提议定为SVHC。
- 检测报告仅用于客户科研、教学、内部质量控制、产品研发等目的, 仅供内部参考。



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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( $\alpha$ -HBCDD, $\beta$ -HBCDD, $\gamma$ -HBCDD) $\Delta$	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	钼铬红(C.I.颜料红104)*	12656-85-8	0.005
II	25	铬酸铅*	7758-97-6	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

所有测试的SVHC:

批次	序号	物质名称	CAS No.	RL (%)
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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附录

所有测试的SVHC:

批次	序号	物质名称	CAS No.	RL (%)
VI	60	磷酸钙*	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	磷酸铅*	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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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( $\beta$ -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. CANEC1914433702

日期: 2019年07月31日 第11页,共18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. CANEC1914433702

日期: 2019年07月31日 第12页,共18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. CANEC1914433702

日期: 2019年07月31日 第13页,共18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, 31119-53-6	0.005



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# 测试报告 (SVHC)

No. CANEC1914433702

日期: 2019年07月31日 第14页,共18页

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
XVI	170	4,4'-异亚丙基联苯酚(双酚A)	80-05-7	0.050
XVI	171	4-庚基(支链与直链)苯酚	-	0.050
XVI	172	全氟癸酸(PFDA)及其钠盐和铵盐	3108-42-7 335-76-2 3830-45-3	0.050
XVI	173	对叔戊基苯酚	80-46-6	0.050
XVII	174	全氟己烷-1-磺酸及其盐	-	0.050
XVIII	175	双(六氯环戊二烯)环辛烷(包含任何顺式与反式同分异构体或其组合)	-	0.050
XVIII	176	苯并蒽(BaA)	56-55-3, 1718-53-2	0.050
XVIII	177	硝酸镉*	10022-68-1, 10325-94-7	0.005
XVIII	178	碳酸镉*	513-78-0	0.005



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测试报告  
(SVHC)

No. CANEC1914433702

日期: 2019年07月31日 第15页,共18页

附录

所有测试的SVHC:

批次	序号	物质名称	CAS No.	RL (%)
XVIII	179	氢氧化镉*	21041-95-2	0.005
XVIII	180	屈(CHR)	218-01-9, 1719-03-5	0.050
XVIII	181	1,3,4-噻二唑-2,5-二硫酮、甲醛与支链和直链4-庚基苯酚的反应产物(RP-HP)[含有支链和直链4-庚基苯酚重量比≥0.1%]	-	0.050
XIX	182	1,2,4-苯三酸酐(偏苯三酸酐)	552-30-7	0.050
XIX	183	苯并(g,h,i)芘(二萘嵌苯)(BPE)	191-24-2	0.050
XIX	184	十甲基环五硅氧烷(D5)	541-02-6	0.050
XIX	185	邻苯二甲酸二环己酯	84-61-7	0.050
XIX	186	氧化硼钠*	12008-41-2	0.005
XIX	187	十二甲基环六硅氧烷(D6)	540-97-6	0.050
XIX	188	乙二胺	107-15-3	0.050
XIX	189	铅*	7439-92-1	0.005
XIX	190	八甲基环四硅氧烷(D4)	556-67-2	0.050
XIX	191	氢化三联苯	61788-32-7	0.050
XX	192	1,7,7-三甲基-3-(苯基亚甲基)双环[2.2.1]庚-2-酮(3-亚苄基樟脑)	15087-24-8	0.050
XX	193	4,4'-(1,3-二甲基丁基)二苯酚(1,3-DMBBP)	6807-17-6	0.050
XX	194	苯并(k)荧蒽(BkF)	207-08-9	0.050
XX	195	荧蒽(FLT)	206-44-0, 93951-69-0	0.050
XX	196	菲(PHE)	85-01-8	0.050
XX	197	芘(PYR)	129-00-0, 1718-52-1	0.050



测试报告  
(SVHC)

No. CANEC1914433702

日期: 2019年07月31日 第16页,共18页

附录

所有测试的SVHC:

批次	序号	物质名称	CAS No.	RL (%)
XXI	198	2,3,3,3-四氟-2-(七氟丙氧基)丙酸及其盐和酰基卤化物(包括单体和组合)(HFPO-DA)	-	0.050
XXI	199	2-甲氧基乙基乙酸酯	110-49-6	0.050
XXI	200	4-叔丁基苯酚(PTBP)	98-54-4	0.050
XXI	201	三(4-壬基苯基, 支链和直链)亚磷酸酯(TNPP)(含≥0.1%的支链和直链4-壬基苯酚)	-	0.050



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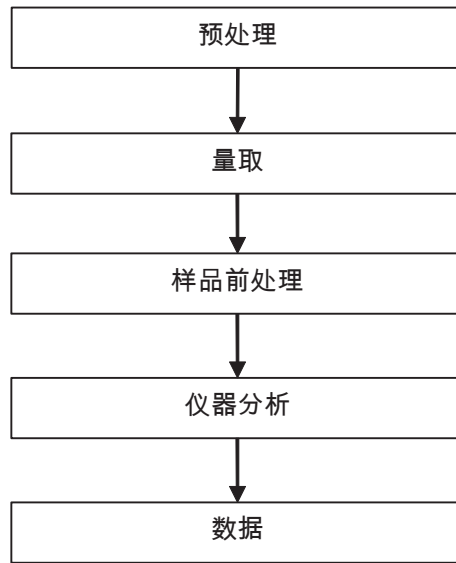
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附件

### SVHC 测试流程图



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## 测试报告 (SVHC)

No. CANEC1914433702

日期: 2019年07月31日 第18页,共18页

样品照片:



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## 测试报告

No. NGBML1900767802

日期: 2019年03月12日

第1页,共8页

雅安百图高新材料股份有限公司  
雅安市名山区雅安工业园区

以下测试之样品是由申请者所提供及确认:球形氧化铝

SGS工作编号: NBIN1903001782PC - NB  
样品接收日期: 2019年03月06日  
测试周期: 2019年03月06日 - 2019年03月12日  
测试要求: 根据客户要求测试  
测试方法: 请参见下一页  
测试结果: 请参见下一页  
结论: 基于所送样品进行的测试, 镉、铅、汞、六价铬、多溴联苯(PBBs)、多溴二苯醚(PBDEs)、邻苯二甲酸酯(如邻苯二甲酸二丁酯(DBP)、邻苯二甲酸丁苄酯(BBP)、邻苯二甲酸二(2-乙基己基)酯(DEHP)和邻苯二甲酸二异丁酯(DIBP))的测试结果符合欧盟RoHS指令2011/65/EU附录II的修正指令(EU) 2015/863的限值要求。

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授权签名

Iris Xiao 肖玲艳  
批准签署人



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Ningbo Branch Chemical Laboratory

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## 测试报告

No. NGBML1900767802

日期: 2019年03月12日

第2页,共8页

测试结果:

测试样品描述:

样品编号	SGS样品ID	描述
SN1	NGB19-007678.001	白色粉末

备注:

- (1) 1 mg/kg = 0.0001%
- (2) MDL = 方法检测限
- (3) ND = 未检出 (< MDL)
- (4) "-" = 未规定

### RoHS 指令2011/65/EU附录II的修正指令(EU) 2015/863

测试方法: 参考IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015和IEC 62321-8:2017, 采用ICP-OES,UV-Vis和GC-MS进行分析.

测试项目	限值	单位	MDL	001
镉(Cd)	100	mg/kg	2	ND
铅(Pb)	1000	mg/kg	2	ND
汞(Hg)	1000	mg/kg	2	ND
六价铬 (Cr(VI))	1000	mg/kg	8	ND
多溴联苯(PBBs)之和	1000	mg/kg	-	ND
一溴联苯	-	mg/kg	5	ND
二溴联苯	-	mg/kg	5	ND
三溴联苯	-	mg/kg	5	ND
四溴联苯	-	mg/kg	5	ND
五溴联苯	-	mg/kg	5	ND
六溴联苯	-	mg/kg	5	ND
七溴联苯	-	mg/kg	5	ND
八溴联苯	-	mg/kg	5	ND
九溴联苯	-	mg/kg	5	ND
十溴联苯	-	mg/kg	5	ND
多溴二苯醚之和(PBDEs)	1000	mg/kg	-	ND
一溴二苯醚	-	mg/kg	5	ND
二溴二苯醚	-	mg/kg	5	ND
三溴二苯醚	-	mg/kg	5	ND
四溴二苯醚	-	mg/kg	5	ND
五溴二苯醚	-	mg/kg	5	ND
六溴二苯醚	-	mg/kg	5	ND



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## 测试报告

No. NGBML1900767802

日期: 2019年03月12日

第3页,共8页

测试项目	限值	单位	MDL	001
七溴二苯醚	-	mg/kg	5	ND
八溴二苯醚	-	mg/kg	5	ND
九溴二苯醚	-	mg/kg	5	ND
十溴二苯醚	-	mg/kg	5	ND
邻苯二甲酸二丁酯 (DBP)	1000	mg/kg	50	ND
邻苯二甲酸丁苄酯(BBP)	1000	mg/kg	50	ND
邻苯二甲酸二(2-乙基己基)酯(DEHP)	1000	mg/kg	50	ND
邻苯二甲酸二异丁酯(DIBP)	1000	mg/kg	50	ND

### 备注:

(1) 最大允许极限值引用自RoHS指令(EU) 2015/863。

IEC 62321系列等同于 EN 62321系列

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

检测报告仅用于客户科研、教学、内部质量控制、产品研发等目的, 仅供内部参考。



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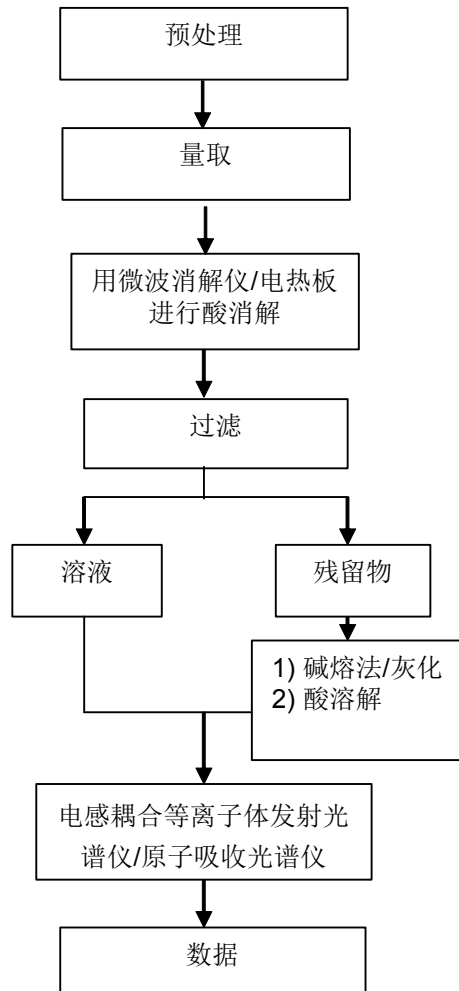
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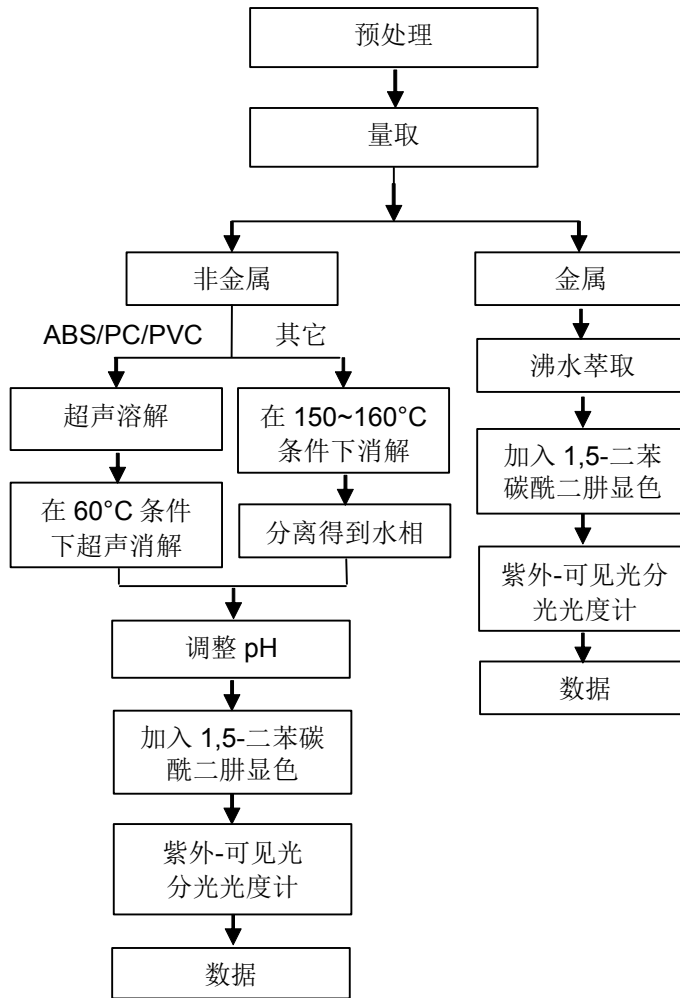
## Pb /Cd / Hg 测试流程图

1)样品按照下述流程被完全消解

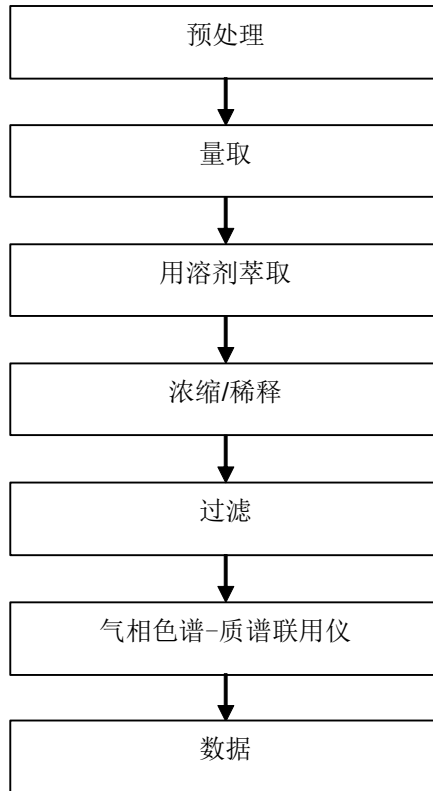


附件

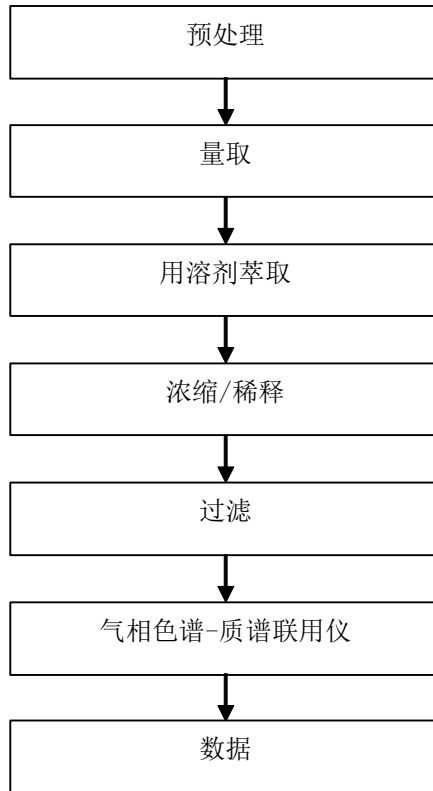
## 六价铬测试流程图



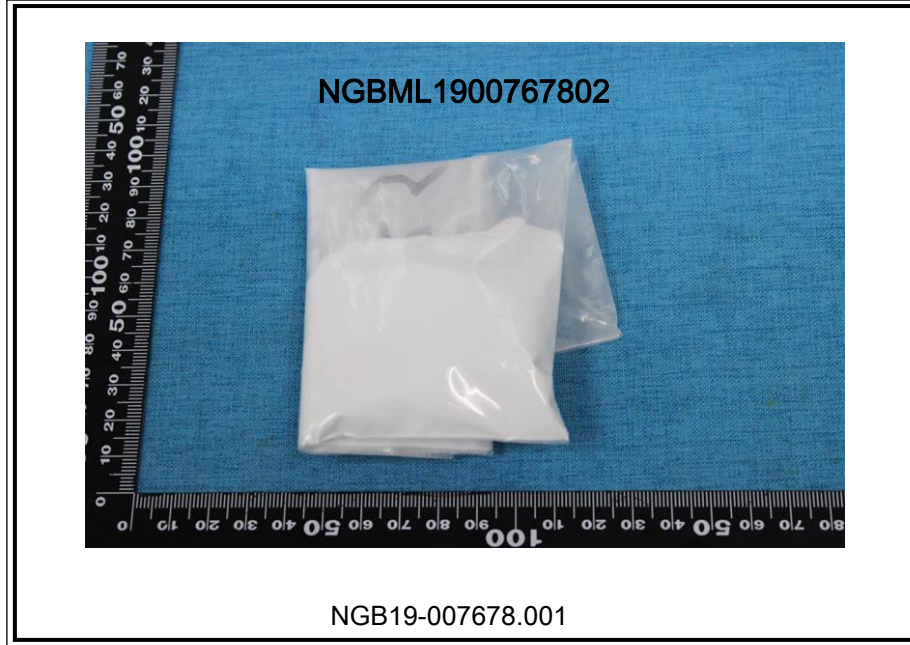
## PBBs/PBDEs 测试流程图



## Phthalates 测试流程图



样品照片:



此照片仅限于随SGS正本报告使用

\*\*\* 报告完 \*\*\*



## 测试报告 (SVHC)

No. CKGEC1900258602

日期: 2019年04月08日 第1页,共18页

雅安沃克林环保科技有限公司  
四川省雅安市经济技术开发区大弓路8号

以下测试之样品是由申请者所提供及确认: 陶瓷平板膜

SGS工作编号: 19829984 - CQ

样品接收日期: 2019年03月27日

测试周期: 2019年03月27日 - 2019年04月04日

测试要求: 根据客户要求,

(i) 基于欧洲化学品管理署截止2019年1月15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197种高关注物质(SVHC)进行筛分测试。

(ii) 基于WTO 2019年2月7日通报中额外鉴定的1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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吕廷婷

Tess Lv吕廷婷

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Chongqing Branch Chemical Laboratory.

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## 测试报告 (SVHC)

No. CKGEC1900258602

日期: 2019年04月08日 第2页,共18页

### 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. REACH法规义务:

#### 2.1 关于物品:

告知:

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。

通报:

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。

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>

#### 2.2 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。

#### 2.3 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法规及其修订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)以符合供应链通信的义务, 如

-根据欧盟第1272/2008号CLP法规被列为有害物质。

-根据欧盟第1272/2008号CLP法规被列为有害混合物, 而当中物质的浓度大于或等于欧盟第1272/2008号CLP法规列出的浓度限值;或

-根据欧盟第1272/2008号CLP法规并未列为有害混合物, 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) 中个别浓度 $\geq 0.1\%$  (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) 在个别非气体混合物中的浓度 $\geq 0.1\%$  (w/w), 或



## 测试报告 (SVHC)

No. CKGEC1900258602

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(d) 设有欧洲范围内工作场所接触限值的物质。

3. 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	CKG19-002586.001	白色物料

### 测试方法:

SGS内部方法- CQTC CHEM-TOP-019-01, CQTC CHEM-TOP-019-02,采用ICP-OES、UV-VIS、GC-MS、HPLC-DAD/MS和比色法分析。





## 测试报告 (SVHC)

No. CKGEC1900258602

日期: 2019年04月08日 第4页,共18页

### 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:(额外鉴定的 SVHC)

批次	物质名称	CAS No.	001 浓度 (%)	RL (%)
-	所有测试的SVHC	-	ND	-



## 测试报告 (SVHC)

No. CKGEC1900258602

日期: 2019年04月08日 第5页,共18页

### 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. \* 测试结果是由选定的元素的结果并基于最坏的情况计算得出; \*\* 测试结果是由选定的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:  
<http://www.sgs.com/en/Consumer-Goods-Retail/Toys-and-Juvenile-Products/Toys/REACH/Management-of-SVHC.aspx>
4. RL = 0.005% 是针对元素 (例如钴、砷、铅、铬(VI)、铝、锆、硼、锶、锌、镉、钛、钡和镉), 除了钨的RL= 0.0005%, 硼的RL= 0.0025%(仅对四氟硼酸铅)。
5. 硼化合物的结果由ICP-OES测试的水提取的硼元素结果换算得出。
6. 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。
7. ☆ 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。
8. § 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≥ 0.1%(w / w)的情况下, 该物质才被提议定为SVHC。
9. Add. = 额外鉴定的高关注物质  
检测报告仅用于客户科研、教学、内部质量控制、产品研发等目的, 仅供内部参考。



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# 测试报告 (SVHC)

No. CKGEC1900258602

日期: 2019年04月08日 第6页,共18页

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( $\alpha$ -HBCDD, $\beta$ -HBCDD, $\gamma$ -HBCDD) $\Delta$	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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测试报告  
(SVHC)

No. CKGEC1900258602

日期: 2019年04月08日 第7页,共18页

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	钼铬红(C.I.颜料红104)*	12656-85-8	0.005
II	25	铬酸铅*	7758-97-6	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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测试报告  
(SVHC)

No. CKGEC1900258602

日期: 2019年04月08日 第8页,共18页

附录

所有测试的SVHC:

批次	序号	物质名称	CAS No.	RL (%)
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. CKGEC1900258602

日期: 2019年04月08日 第9页,共18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. CKGEC1900258602

日期: 2019年04月08日 第10页,共18页

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. CKGEC1900258602

日期: 2019年04月08日 第11页,共18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. CKGEC1900258602

日期: 2019年04月08日 第12页,共18页

附录

所有测试的SVHC:

批次	序号	物质名称	CAS No.	RL (%)
VIII	120	钛酸铅锆*	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. CKGEC1900258602

日期: 2019年04月08日 第13页,共18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, 31119-53-6	0.005



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测试报告  
(SVHC)

No. CKGEC1900258602

日期: 2019年04月08日 第14页,共18页

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
XVI	170	4,4'-异亚丙基联苯酚(双酚A)	80-05-7	0.050
XVI	171	4-庚基(支链与直链)苯酚	-	0.050
XVI	172	全氟癸酸(PFDA)及其钠盐和铵盐	3108-42-7 335-76-2 3830-45-3	0.050
XVI	173	对叔戊基苯酚	80-46-6	0.050
XVII	174	全氟己烷-1-磺酸及其盐	-	0.050
XVIII	175	双(六氯环戊二烯)环辛烷(包含任何顺式与反式同分异构体或其组合)	-	0.050
XVIII	176	苯并蒽(BaA)	56-55-3, 1718-53-2	0.050
XVIII	177	硝酸镉*	10022-68-1, 10325-94-7	0.005
XVIII	178	碳酸镉*	513-78-0	0.005



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# 测试报告 (SVHC)

No. CKGEC1900258602

日期: 2019年04月08日 第15页,共18页

附录

所有测试的SVHC:

批次	序号	物质名称	CAS No.	RL (%)
XVIII	179	氢氧化镉*	21041-95-2	0.005
XVIII	180	屈(CHR)	218-01-9, 1719-03-5	0.050
XVIII	181	1,3,4-噻二唑-2,5-二硫酮、甲醛与支链和直链4-庚基苯酚的反应产物(RP-HP)[含有支链和直链4-庚基苯酚重量比≥0.1%]	-	0.050
XIX	182	1,2,4-苯三酸酐(偏苯三酸酐)	552-30-7	0.050
XIX	183	苯并(g,h,i)芘(二萘嵌苯)(BPE)	191-24-2	0.050
XIX	184	十甲基环五硅氧烷(D5)	541-02-6	0.050
XIX	185	邻苯二甲酸二环己酯	84-61-7	0.050
XIX	186	氧化硼钠*	12008-41-2	0.005
XIX	187	十二甲基环六硅氧烷(D6)	540-97-6	0.050
XIX	188	乙二胺	107-15-3	0.050
XIX	189	铅*	7439-92-1	0.005
XIX	190	八甲基环四硅氧烷(D4)	556-67-2	0.050
XIX	191	氢化三联苯	61788-32-7	0.050
XX	192	1,7,7-三甲基-3-(苯基亚甲基)双环[2.2.1]庚-2-酮(3-亚苄基樟脑)	15087-24-8	0.050
XX	193	4,4'-(1,3-二甲基丁基)二苯酚(1,3-DMBBP)	6807-17-6	0.050
XX	194	苯并(k)荧蒽(BkF)	207-08-9	0.050
XX	195	荧蒽(FLT)	206-44-0, 93951-69-0	0.050
XX	196	菲(PHE)	85-01-8	0.050
XX	197	茚(PYR)	129-00-0, 1718-52-1	0.050



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测试报告  
(SVHC)

No. CKGEC1900258602

日期: 2019年04月08日 第16页,共18页

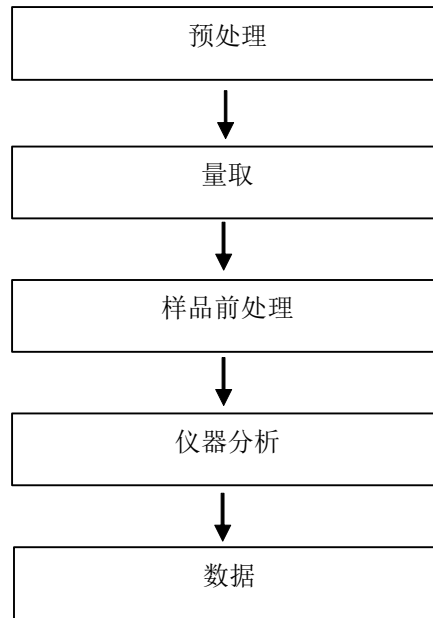
附录

所有测试的SVHC:

批次	序号	物质名称	CAS No.	RL (%)
Add.	198	4-叔丁基苯酚(PTBP)	98-54-4	0.050



## SVHC 测试流程图



## 测试报告 (SVHC)

No. CKGEC1900258602

日期: 2019年04月08日 第18页,共18页

样品照片:



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\*\*\* 报告完 \*\*\*

## 测试报告

No. CKGEC1900258302

日期: 2019年04月02日 第1页,共8页

雅安沃克林环保科技有限公司  
四川省雅安市经济技术开发区大弓路8号

以下测试之样品是由申请者所提供及确认: 陶瓷平板膜

SGS工作编号: 19829984 - CQ  
样品接收日期: 2019年03月27日  
测试周期: 2019年03月27日 - 2019年04月02日  
测试要求: 根据客户要求测试  
测试方法: 请参见下一页  
测试结果: 请参见下一页

通标标准技术服务有限公司重庆分公司  
授权签名

吕廷婷

Tess Lv吕廷婷  
批准签署人





## 测试报告

No. CKGEC1900258302

日期: 2019年04月02日 第2页,共8页

测试结果:

### 测试样品描述:

样品编号	SGS样品ID	描述
SN1	CKG19-002583.001	白色物料

备注:

- (1) 1 mg/kg = 0.0001%
- (2) MDL = 方法检测限
- (3) ND = 未检出 (< MDL)
- (4) "-" = 未规定

### 元素分析和阻燃剂和邻苯二甲酸酯

测试方法: 参考IEC 62321-4:2013+A1:2017, IEC 62321-5:2013, IEC 62321-7-2:2017, IEC 62321-6:2015 和 IEC 62321-8:2017, 采用 ICP-OES, UV-Vis 和 GC-MS 进行分析.

测试项目	单位	MDL	001
镉 (Cd)	mg/kg	2	ND
铅 (Pb)	mg/kg	2	ND
汞 (Hg)	mg/kg	2	ND
六价铬(Cr(VI))	mg/kg	8	ND
多溴联苯之和(PBBs)	mg/kg	-	ND
一溴联苯	mg/kg	5	ND
二溴联苯	mg/kg	5	ND
三溴联苯	mg/kg	5	ND
四溴联苯	mg/kg	5	ND
五溴联苯	mg/kg	5	ND
六溴联苯	mg/kg	5	ND
七溴联苯	mg/kg	5	ND
八溴联苯	mg/kg	5	ND
九溴联苯	mg/kg	5	ND
十溴联苯	mg/kg	5	ND
多溴二苯醚之和(PBDEs)	mg/kg	-	ND
一溴二苯醚	mg/kg	5	ND
二溴二苯醚	mg/kg	5	ND
三溴二苯醚	mg/kg	5	ND
四溴二苯醚	mg/kg	5	ND
五溴二苯醚	mg/kg	5	ND



# 测试报告

No. CKGEC1900258302

日期: 2019年04月02日 第3页,共8页

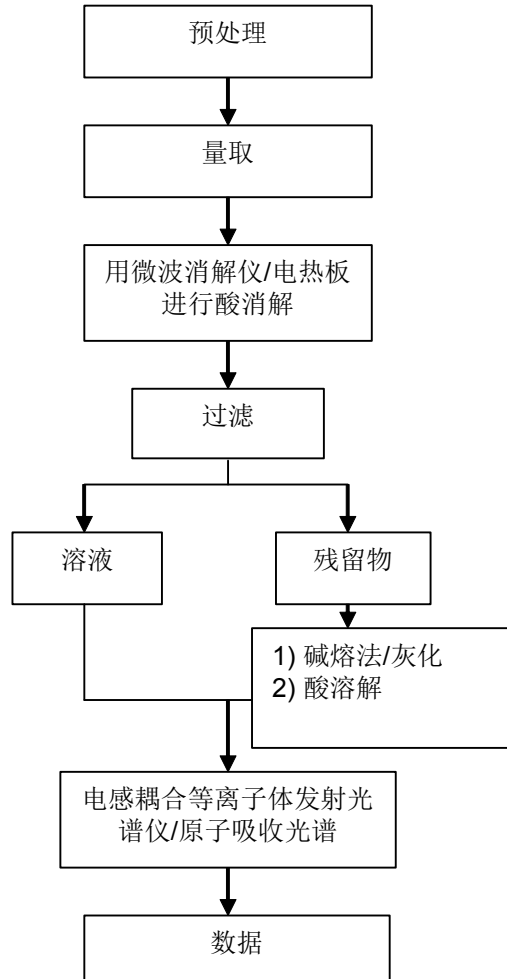
测试项目	单位	MDL	001
六溴二苯醚	mg/kg	5	ND
七溴二苯醚	mg/kg	5	ND
八溴二苯醚	mg/kg	5	ND
九溴二苯醚	mg/kg	5	ND
十溴二苯醚	mg/kg	5	ND
邻苯二甲酸二丁酯 (DBP)	mg/kg	50	ND
邻苯二甲酸丁苯酯(BBP)	mg/kg	50	ND
邻苯二甲酸二(2-乙基己基)酯(DEHP)	mg/kg	50	ND
邻苯二甲酸二异丁酯(DIBP)	mg/kg	50	ND

检测报告仅用于客户科研、教学、内部质量控制、产品研发等目的，仅供内部参考。

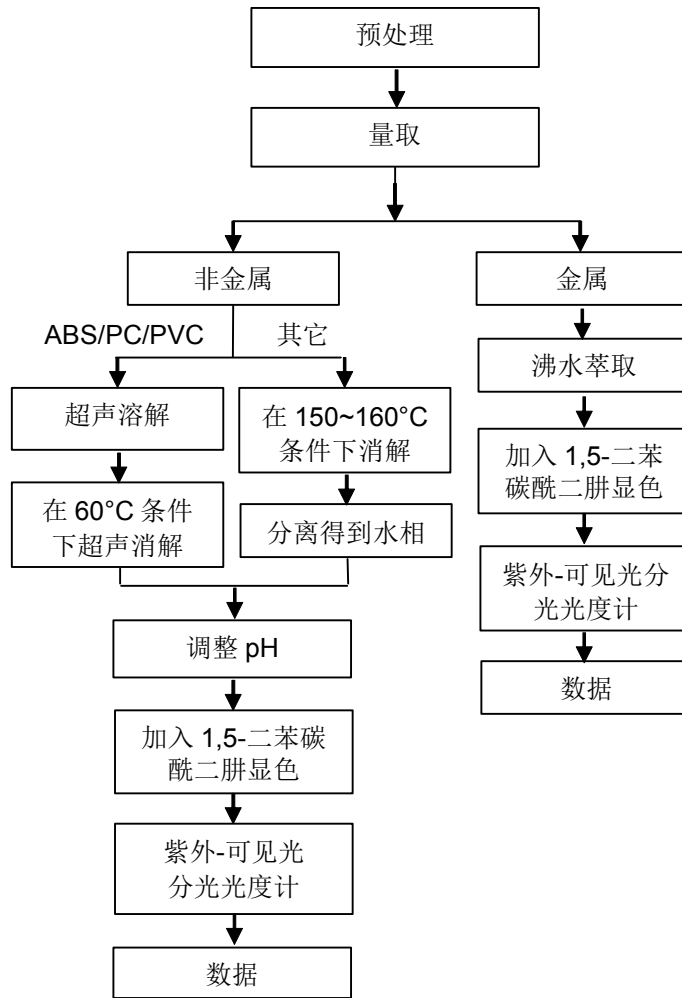


## 元素(IEC62321) 测试流程图

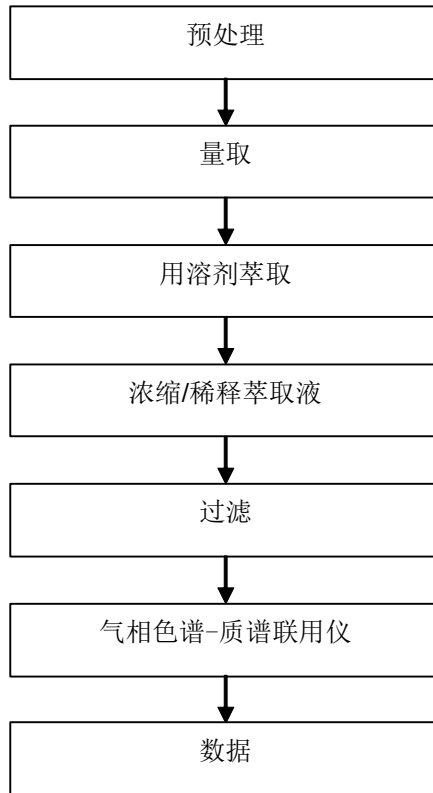
1)样品按照下述流程被完全消解



## 六价铬测试流程图



## PBBs/PBDEs 测试流程图

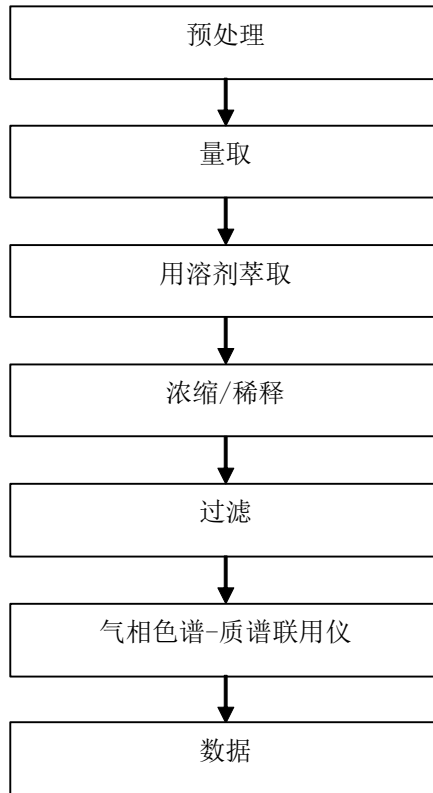


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## Phthalates 测试流程图

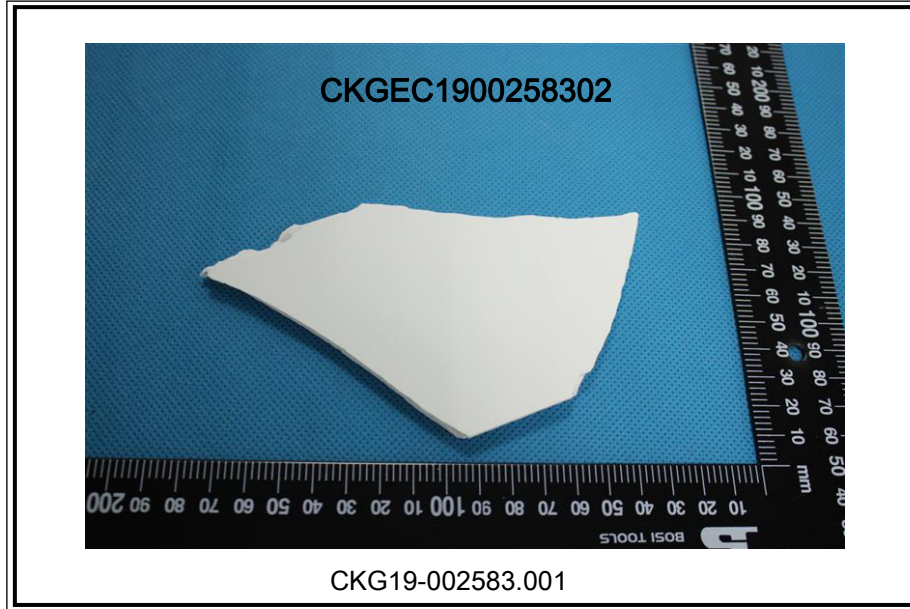


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样品照片:



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\*\*\* 报告完 \*\*\*



## 检测报告

公司名称: 雅安沃克林环保科技有限公司  
 检测产品: 200101-1 膜片  
 样品编号: 202001140359  
 报告编号: 202001140359-1/1  
 样品收到日期: 2020-01-14  
 样品检测日期: 2020-01-14--01-15  
 报告日期: 2020-01-15

### 断裂模数和破坏强度的测定

#### 测试样品:

7片 150\*250mm 砖

#### 参照标准:

GB/T3810.4—2016

#### 检测结果:

样品序号	破坏荷载 $F_{bl}$ (N)	破坏强度 $F_{bs}$ (N)	断裂模数 $\sigma F_{bl}$ ( $N/mm^2$ )
1	379	555.9	24.9
2	434	636.5	28.7
3	462	677.6	30.4
4	404	592.5	26.3
5	631	925.5	41.7
6	423	620.4	27.9
7	655	960.7	43.3
平均值	484.0	709.9	31.9

测试相关参数: 支撑棒直径 20mm; 橡胶厚度 5mm  
 砖伸出支撑棒外的长度 10mm 支撑棒中心距 220mm

以下空白





中国科学院上海硅酸盐研究所  
无机材料分析测试中心

# 分析测试报告

送样单位：雅安沃克林环保科技有限公司

分析要求：陶瓷平板膜表面 Zeta 电位

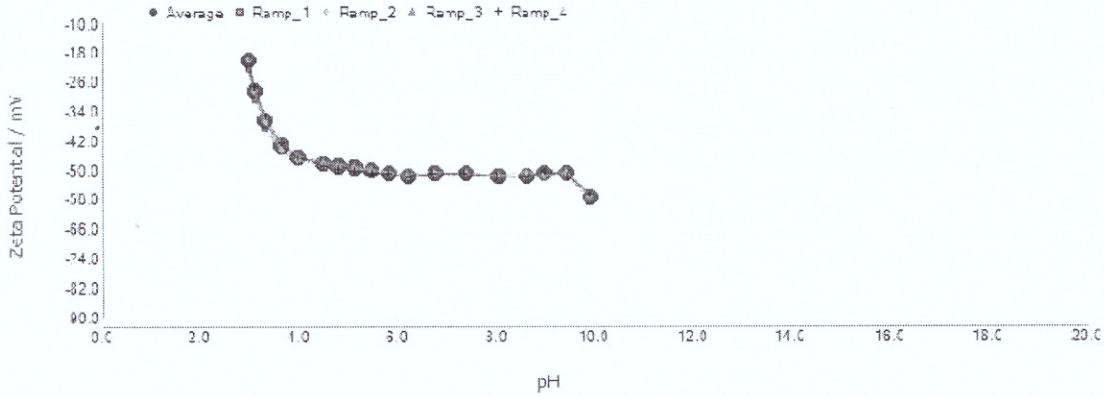
报告日期：2019-12-11

检测设备：SurPASS 固体表面 Zeta 电位测试仪 分析结果：（见表）

pH	$\zeta$ [mV]
9.898	-57.9
9.44	-51.4
8.979	-51.3
8.625	-52
8.031	-52
7.372	-51.5
6.743	-51.3
6.225	-52.3
5.835	-51.3
5.464	-50.6
5.137	-50
4.81	-49.6
4.491	-48.7
3.991	-47.1
3.641	-43.8
3.324	-36.8
3.128	-28.8
2.988	-20.5

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无机材料分析测试中心

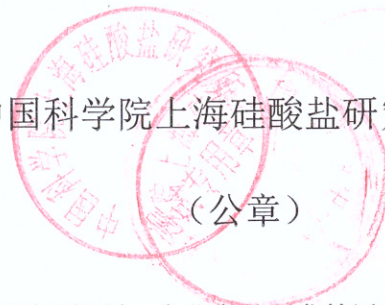
# 分析测试报告



分析: 罗启明

校核: 朱红

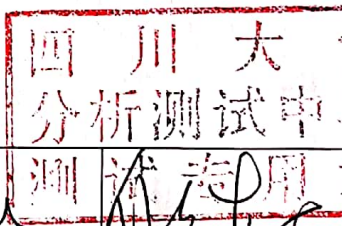
中国科学院上海硅酸盐研究所



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# 四川大学分析测试中心检测数据

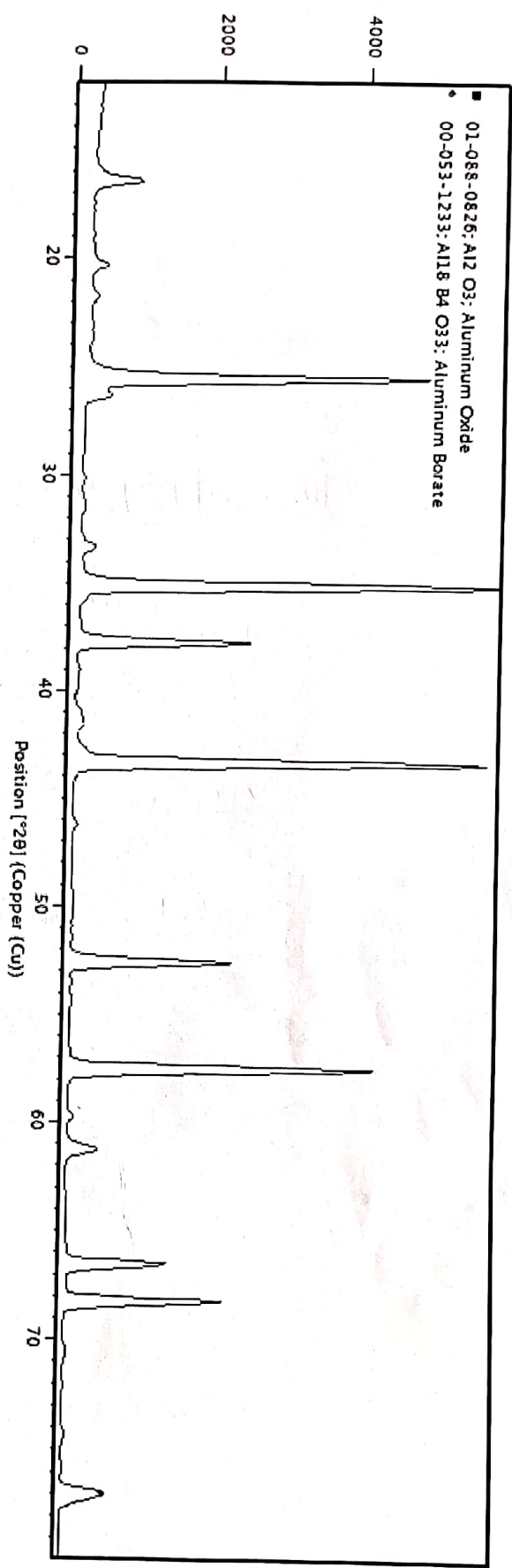
共 3 页，第 1 页，图 1 页，表 1 页

报告编号	19W953P		
委托单位	雅安沃克林环保科技有限公司		
样品名称	陶瓷平板膜	样品数量	1
样品编号	19W953P-01 (客户编号: 191210)		
检测项目	物相分析		
检测依据	JY/T 009-1996 转靶多晶体 X 射线衍射方法通则		
检测仪器	Empyrean X 射线衍射仪		
检测数据:	<p style="text-align: center;">客户称为“陶瓷平板膜”样品采用掠入射测试，样品表面的主要物相为 <math>\alpha</math>-Al<sub>2</sub>O<sub>3</sub>，以及 Al<sub>18</sub>B<sub>4</sub>O<sub>33</sub> 等（详情见附图及附表）。</p> <p style="text-align: center; border: 1px solid black; padding: 2px;">以下空白</p>		
检测人	文季秋	签发人	
校核人	许凤兰	发送日期	2019.12.18

- 备注:
1. 本检测数据仅供委托方科研、教学或内部质量控制使用，不具有法定证明作用。
  2. 本数据无“测试专用章”和骑缝章无效。
  3. 样品名称、批号（标识）由送检方提供，本中心不负责其真伪，检测结果只对送检样品负责。
  4. 自检测数据发出之日起，本中心受理检测质量申诉的有效期限最长为 15 天，且不超过样品保存有效期。若原送样已被送样单位取回、或原送样无法适当保存、或原送样太少不足以复检时，本中心不受理样品复检。复检结果无误，需另收费。

Graphics

Counts



Peak List

Phase	Position [°2θ]	Intensity
01-088-0826: Al <sub>2</sub> O <sub>3</sub> ; Aluminum Oxide	~19	~1000
01-088-0826: Al <sub>2</sub> O <sub>3</sub> ; Aluminum Oxide	~38	~1000
01-088-0826: Al <sub>2</sub> O <sub>3</sub> ; Aluminum Oxide	~56	~1000
01-088-0826: Al <sub>2</sub> O <sub>3</sub> ; Aluminum Oxide	~69	~1000
00-053-1233: Al <sub>18</sub> B <sub>4</sub> O <sub>33</sub> ; Aluminum Borate	~15	~500
00-053-1233: Al <sub>18</sub> B <sub>4</sub> O <sub>33</sub> ; Aluminum Borate	~22	~500
00-053-1233: Al <sub>18</sub> B <sub>4</sub> O <sub>33</sub> ; Aluminum Borate	~35	~500
00-053-1233: Al <sub>18</sub> B <sub>4</sub> O <sub>33</sub> ; Aluminum Borate	~42	~500
00-053-1233: Al <sub>18</sub> B <sub>4</sub> O <sub>33</sub> ; Aluminum Borate	~50	~500
00-053-1233: Al <sub>18</sub> B <sub>4</sub> O <sub>33</sub> ; Aluminum Borate	~58	~500
00-053-1233: Al <sub>18</sub> B <sub>4</sub> O <sub>33</sub> ; Aluminum Borate	~65	~500
00-053-1233: Al <sub>18</sub> B <sub>4</sub> O <sub>33</sub> ; Aluminum Borate	~72	~500

分析: 2019  
 校验人: 邵成乾

大  
 测试中  
 专用

**Peak List**

Pos. [°2θ]	Height [cts]	d-spacing [Å]	Rel. Int. [%]
16.4994	647.01	5.37287	11.17
20.3720	220.21	4.35940	3.80
21.6619	113.01	4.10266	1.95
23.6507	64.90	3.76196	1.12
25.5975	4621.90	3.48010	79.77
26.3172	365.89	3.38655	6.32
30.1329	35.76	2.96584	0.62
31.4447	54.92	2.84504	0.95
33.3208	210.62	2.68901	3.64
35.1542	5793.83	2.55287	100.00
37.7827	2386.66	2.38109	41.19
41.5850	104.61	2.17175	1.81
43.3838	5637.20	2.08578	97.30
46.2152	62.03	1.96437	1.07
49.8687	19.61	1.82869	0.34
52.5527	2139.49	1.74144	36.93
57.5309	4168.12	1.60203	71.94
59.7959	89.99	1.54665	1.55
61.3019	420.32	1.51222	7.25
66.5205	1370.60	1.40568	23.66
68.2416	2172.84	1.37437	37.50
70.5953	48.97	1.33421	0.85
74.3043	56.86	1.27653	0.98
76.8214	504.30	1.24086	8.70





182312050358

# 检测报告

JC 检 字(2019)第 121206 号

项目名称: 四川雅安经济开发区化成  
新村污水处理改造项目

委托单位: 雅安百图高新材料股份有限公司

检测类别: 送样检测

报告日期: 2019 年 12 月 20 日

四川九诚检测技术有限公司

(盖章)



# 检测报告说明

- 1、 报告无本公司检验检测专用章无效,报告无骑缝章无效。
- 2、 报告内容涂改、增删无效；报告无相关责任人签字无效。
- 3、 未经本公司书面同意，不得部分复制检测报告。
- 4、 委托检测结果只代表检测当时污染物排放状况，排放标准由客户提供；由委托方自行采集的样品，仅对当次送检样品的检测结果负责，不对样品来源负责，对检测结果可不做评价。
- 5、 未经本公司书面同意，本报告不得用于广告、商品宣传等商业行为。
- 6、 对本报告若有异议，请在收到报告后七日内向本公司提出，逾期不予受理。
- 7、 除客户特别申明且支付样品保管费，所有超过标准规定时效期的样品均不再留样。

四川九诚检测技术有限公司

地 址：四川省·成都市·犀浦·泰山南路 186 号

邮 编：611731

电 话：028-87862858

传 真：028-87862858

## 一、检测内容

受雅安百图高新材料股份有限公司的委托, 我公司于 2019 年 12 月 12 日起对送检样品进行分析检测。

## 二、检测项目

废水检测项目: 化学需氧量、悬浮物、浊度。

## 三、检测点位及样品信息

废水检测点位及样品信息见表 3-1。

表 3-1 废水检测点位及样品信息

点位序号	样品编号	检测点位	送样时间	样品性状
/	2019121206-W1	送检	2019.12.12	微黄色、浑浊、臭、无浮油
/	2019121206-W2	送检	2019.12.12	无色、无味、无浮油、微浊
/	2019121206-W3	送检	2019.12.12	深褐色、无味、浑浊、无浮油

## 四、检测方法与方法来源

检测方法、方法来源、使用仪器及检出限见表 4-1。

表 4-1 检测方法、方法来源、使用仪器及检出限

检测类别	检测项目	检测方法	检测仪器及型号	仪器编号	检出限
水和废水	化学需氧量	水质 化学需氧量的测定 重铬酸盐法 HJ 828-2017	/	/	4mg/L
	浊度	水质 浊度的测定 目视比浊法 GB 13200-91			/
	悬浮物	水质 悬浮物的测定 重量法 GB 11901-89	电子天平 BSA224S-CW	JC/YQ031	4mg/L

## 五、检测结果



表 5-1 废水检测结果

样品标识	进水	出水	膜池
样品编号	2019121206-W1	2019121206-W2	2019121206-W3
检测项目			
化学需氧量 (mg/L)	289	16	1.04 × 10 <sup>4</sup>
悬浮物 (mg/L)	1930	ND	6900
浊度 (度)	20	2.0	30

备注：1、我公司仅对送检样品检测结果负责，不对样品来源负责；

2、“ND”表示检测结果小于方法检出限，悬浮物检出限为 4mg/L。

\*\*\*报告结束\*\*\*



编制：

张立

审核：

5/2/20

签发：

刘远

日期：

2019年12月20日

日期：

2019年12月20日

日期：

2019年12月20日



182312050358

# 检测报告

JC 检 字(2019)第 121205 号

项目名称: 四川能投鼎盛锂业有限公司  
600m<sup>3</sup>/d 一体化净水预处理项目

委托单位: 四川绿润泽环境工程有限公司

检测类别: 送样检测

报告日期: 2019 年 12 月 20 日

四川九诚检测技术有限公司

(盖章)



# 检测报告说明

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- 2、 报告内容涂改、增删无效; 报告无相关责任人签字无效。
- 3、 未经本公司书面同意, 不得部分复制检测报告。
- 4、 委托检测结果只代表检测当时污染物排放状况, 排放标准由客户提供; 由委托方自行采集的样品, 仅对当次送检样品的检测结果负责, 不对样品来源负责, 对检测结果可不作评价。
- 5、 未经本公司书面同意, 本报告不得用于广告、商品宣传等商业行为。
- 6、 对本报告若有异议, 请在收到报告后七日内向本公司提出, 逾期不予受理。
- 7、 除客户特别申明且支付样品保管费, 所有超过标准规定时效期的样品均不再留样。

四川九诚检测技术有限公司

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邮 编: 611731

电 话: 028-87862858

传 真: 028-87862858



## 一、检测内容

受四川绿润泽环境工程有限公司的委托, 我公司于 2019 年 12 月 12 日起对送检样品进行分析检测。

## 二、检测项目

废水检测项目: 化学需氧量、悬浮物、浊度、总余氯、动植物油、铁。

## 三、检测点位及样品信息

废水检测点位及样品信息见表 3-1。

表 3-1 废水检测点位及样品信息

点位序号	样品编号	检测点位	送样时间	样品性状
/	2019121205-W1-W2	送检	2019.12.12	无色、无味、无浮油、透明

## 四、检测方法与方法来源

检测方法、方法来源、使用仪器及检出限见表 4-1。

表 4-1 检测方法、方法来源、使用仪器及检出限

检测类别	检测项目	检测方法	检测仪器及型号	仪器编号	检出限
水和 废水	化学需氧量	水质 化学需氧量的测定 重铬酸盐法 HJ 828-2017	/	/	4mg/L
	悬浮物	水质 悬浮物的测定 重量法 GB 11901-89	电子天平 BSA224S-CW	JC/YQ031	4mg/L
	浊度	水质 浊度的测定 目视比浊法 GB 13200-91	/	/	/
	动植物油类	水质 石油类和动植物油类的测定 红外分光光度法 HJ 637-2018	红外分光测油仪 OIL 460	JC/YQ201	0.06mg/L
	铁	水质 铁、锰的测定 火焰原子吸收 分光光度法 GB 11911-89	原子吸收分光光度计 AA-7003	JC/YQ028	0.03mg/L
	总氯	水质 游离氯和总氯的测定 N,N-二乙基-1,4-苯二胺分光光度法 HJ 586-2010	紫外可见分光光度计 UV-1800PC	JC/YQ125	0.004mg/L

## 五、检测结果

表 5-1 废水检测结果

样品标识	进水	出水
检测项目 / 样品编号	2019121205-W1	2019121205-W2
化学需氧量 (mg/L)	18	6
悬浮物 (mg/L)	5	ND
浊度 (度)	1.0	1.0
动植物油 (mg/L)	/	0.33
铁 (mg/L)	/	ND
总余氯 (mg/L)	/	0.10

备注: 1、我公司仅对送检样品检测结果负责, 不对样品来源负责;

2、“ND”表示检测结果小于方法检出限, 悬浮物检出限为 4mg/L, 动植物油检出限为 0.06mg/L;

3、“/”表示该指标不做检测。

\*\*\*报告结束\*\*\*



编制: 张立                      审核: 刘江                      签发: 刘江  
 日期: 2019年12月20日              日期: 2019年12月20日              日期: 2019年12月20日

在生产过程中对相关步骤进行计量统计：

日期	废料称取量		胚体成型颗粒称取		膜层颗粒称取		膜片称重		废料回收率		制备膜片		合格成品数量		成品合格率
	kg		kg		kg		kg		%		片	片	片		
201803	550		497.1		43.2		504.3		91.69%		200	189		94.50%	
201805	875		798.8		69.1		809.6		92.53%		320	299		93.44%	
201809	830		750.0		64.7		759.2		91.47%		300	273		91.00%	
201811	1100		993.3		86.2		1008.3		91.66%		400	361		90.25%	
201903	1100		993.0		86.4		1009		91.73%		400	381		95.25%	
201904	1100		994.3		86.5		1008.5		91.68%		400	382		95.50%	
201906	1100		995		86.3		1008.3		91.66%		400	377		94.25%	
201907	1100		993.8		87.0		1008.5		91.68%		400	369		92.25%	
总计	7755						7115.7		91.76%		2820	2631		93.30%	

统计结果显示，采用球铝生产废料制备平板陶瓷膜其平均废料回收率达到**91.7%**，成品合格率可达到**93.3%**。

但月度数据存在一定偏差，从生产角度考虑，成品合格率以**90%**为控制要求为宜。