

## 检测报告

编号: SHAEC25023685304

日期: 2025 年 09 月 15 日

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客户名称: 捷捷微电(南通)科技有限公司  
客户地址: 江苏省南通市苏锡通科技产业园区井冈山路 1 号

样品名称: TMBS  
以上样品及信息由客户提供。

SGS 工作编号: SHP25-031070  
样品接收时间: 2025 年 09 月 09 日  
检测周期: 2025 年 09 月 09 日 ~ 2025 年 09 月 15 日  
检测要求: 根据客户要求检测。  
检测方法: 见后续页。  
检测结果: 见后续页。

| 检测要求                                                                                                                          | 结论 |
|-------------------------------------------------------------------------------------------------------------------------------|----|
| 欧盟 POPs 法规(EU) 2019/1021 附录 I 及其修正法规草案                                                                                        | 符合 |
| 欧盟 POPs 法规(EU) 2019/1021 附录 I-C <sub>10</sub> -C <sub>13</sub> 氯代烃(短链氯化石蜡)(SCCPs)                                             | 符合 |
| 欧盟 POPs 法规(EU) 2019/1021 附录 I 及其修正法规 (EU) 2024/2570-六溴环十二烷(HBCDD) 及其非对映异构体( $\alpha$ -HBCDD, $\beta$ -HBCDD, $\gamma$ -HBCDD) | 符合 |
| 欧盟 POPs 法规 (EU) 2019/1021 附录 I 及其修正法规 (EU) 2025/718 - 全氟辛酸(PFOA)及其盐, 全氟辛酸(PFOA)相关化合物, 全氟辛烷磺酸(PFOS)及其盐和全氟辛烷磺酸(PFOS)相关化合物       | 符合 |
| 欧盟 POPs 法规(EU) 2019/1021 附录 I 及其修正法规 (EU) 2021/277- 五氯苯酚(PCP)及其盐和酯                                                            | 符合 |
| 欧盟 POPs 法规 (EU) 2019/1021 及其修正法规(EU) 2023/1608-全氟己烷磺酸(PFHxS)及其盐和相关化合物                                                         | 符合 |
| 欧盟 POPs 法规(EU) 2019/1021 附录 I-卤代化合物                                                                                           | 符合 |
| 欧盟 POPs 法规(EU) 2019/1021 附录 I 及其修正法规 (EU) 2025/843- UV-328                                                                    | 符合 |

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罗萍

Carol Luo 罗萍  
批准签署人

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| 检测要求                                                    | 结论    |
|---------------------------------------------------------|-------|
| 欧盟 POPs 法规(EU) 2019/1021 附录 I 及其修正法规 (EU) 2020/1204—杀虫剂 | 见检测结果 |

## 检测结果:

## 检测部件外观描述:

| 样品序号 | 样品编号 | SGS 样品 ID               | 样品描述 |
|------|------|-------------------------|------|
| SN1  | A1   | SHA25-0236853-0001.C001 | 彩色固体 |

## 备注:

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

**欧盟 POPs 法规(EU) 2019/1021 附录 I 及其修正法规草案**

检测方法: SGS 内部方法, 采用 GC-MS 进行分析。

| 检测项目     | CAS No.                                    | 限值 | 单位    | MDL | A1 |
|----------|--------------------------------------------|----|-------|-----|----|
| 得克隆 (DP) | 13560-89-9<br>/135821-03-3<br>/135821-74-8 | 1  | mg/kg | 1   | ND |
| 结论       | 符合                                         |    |       |     |    |

## 备注:

(1) 得克隆的拟议生效日期为 2025 年 2 月 26 日。

**欧盟 POPs 法规(EU) 2019/1021 附录 I-C<sub>10</sub>-C<sub>13</sub> 氯代烃(短链氯化石蜡)(SCCPs)**

检测方法: 参考 ISO 22818:2021, 采用 GC-NCI-MS 进行分析。

| 检测项目                                                | CAS No.            | 限值   | 单位    | MDL | A1 |
|-----------------------------------------------------|--------------------|------|-------|-----|----|
| C <sub>10</sub> -C <sub>13</sub> 氯代烃(短链氯化石蜡)(SCCPs) | 85535-84-8 及<br>其它 | 1500 | mg/kg | 50  | ND |
| 结论                                                  | 符合                 |      |       |     |    |

**欧盟 POPs 法规(EU) 2019/1021 附录 I 及其修正法规 (EU) 2024/2570—六溴环十二烷(HBCDD) 及其非对映异构体(α-HBCDD, β-HBCDD, γ-HBCDD)**

检测方法: SGS 内部方法, 采用 GC-MS 进行分析。

| 检测项目                                              | CAS No.                     | 限值 | 单位    | MDL | A1 |
|---------------------------------------------------|-----------------------------|----|-------|-----|----|
| 六溴环十二烷(HBCDD) 及其非对映异构体(α-HBCDD, β-HBCDD, γ-HBCDD) | 134237-50-6<br>/134237-51-7 | 75 | mg/kg | 20  | ND |



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| 检测项目 | CAS No.                                   | 限值 | 单位 | MDL | A1 |
|------|-------------------------------------------|----|----|-----|----|
|      | /134237-52-8<br>/25637-99-4<br>/3194-55-6 |    |    |     |    |
| 结论   | 符合                                        |    |    |     |    |

## 备注:

(1) 委员会应在 2026 年 1 月 1 日前审查和评估规定的豁免。

**欧盟 POPs 法规 (EU) 2019/1021 附录 I 及其修正法规 (EU) 2025/718 - 全氟辛酸(PFOA)及其盐, 全氟辛酸(PFOA)相关化合物, 全氟辛烷磺酸(PFOS)及其盐和全氟辛烷磺酸(PFOS)相关化合物**

检测方法: 优化的 EN 17681-1:2025, 采用 LC-MS 或 LC-MS/MS 和 GC-MS 或 GC-MS/MS 进行分析。

| 检测项目                                                 | CAS No.    | 限值    | 单位    | MDL   | A1 |
|------------------------------------------------------|------------|-------|-------|-------|----|
| <b>PFOS, 及其盐</b>                                     |            |       |       |       |    |
| 全氟辛烷磺酸 (PFOS), 及其盐 <sup>^</sup>                      | 1763-23-1  | 0.025 | mg/kg | 0.010 | ND |
| <b>PFOS 相关化合物</b>                                    |            |       |       |       |    |
| N-乙基全氟辛烷磺酰胺 (N-EtFOSA)                               | 4151-50-2  | -     | mg/kg | 0.010 | ND |
| N-甲基全氟辛烷磺酰胺 (N-MeFOSA)                               | 31506-32-8 | -     | mg/kg | 0.010 | ND |
| 2-(N-乙基全氟辛基磺酰胺)乙醇 (N-EtFOSE)                         | 1691-99-2  | -     | mg/kg | 0.010 | ND |
| 2-(N-甲基全氟辛基磺酰胺)乙醇 (N-MeFOSE)                         | 24448-09-7 | -     | mg/kg | 0.010 | ND |
| 全氟辛基磺酰胺 (PFOSA), 及其盐 <sup>^</sup>                    | 754-91-6   | -     | mg/kg | 0.010 | ND |
| N-(全氟-1-辛烷磺酰基)甘氨酸 (FOSAA), 及其盐 <sup>^</sup>          | 2806-24-8  | -     | mg/kg | 0.010 | ND |
| N-甲基-N-(全氟-1-辛烷磺酰基)甘氨酸 (N-MeFOSAA), 及其盐 <sup>^</sup> | 2355-31-9  | -     | mg/kg | 0.010 | ND |
| N-乙基-N-(全氟-1-辛烷磺酰基)甘氨酸 (N-EtFOSAA), 及其盐 <sup>^</sup> | 2991-50-6  | -     | mg/kg | 0.010 | ND |
| PFOS 相关化合物总和                                         | -          | 1     | mg/kg | -     | ND |
| <b>PFOA, 及其盐</b>                                     |            |       |       |       |    |
| 全氟辛酸 (PFOA), 及其盐 <sup>^</sup>                        | 335-67-1   | 0.025 | mg/kg | 0.010 | ND |
| <b>PFOA 相关化合物</b>                                    |            |       |       |       |    |
| 1H,1H,2H,2H-全氟癸烷磺酸 (8:2 FTS), 及其盐 <sup>^</sup>       | 39108-34-4 | 1     | mg/kg | 0.010 | ND |
| 全氟辛酸甲酯 (Me-PFOA)                                     | 376-27-2   | 1     | mg/kg | 0.200 | ND |
| 全氟辛酸乙酯 (Et-PFOA)                                     | 3108-24-5  | 1     | mg/kg | 0.200 | ND |
| 1H,1H,2H,2H-甲基丙烯酸全氟癸酯 (8:2 FTMA)                     | 1996-88-9  | 1     | mg/kg | 0.100 | ND |
| 1H,1H,2H,2H-全氟癸基丙烯酸酯 (8:2 FTA)                       | 27905-45-9 | 1     | mg/kg | 0.100 | ND |
| 全氟辛基碘烷 (PFOI)                                        | 507-63-1   | 1     | mg/kg | 0.200 | ND |
| 2H, 2H-全氟癸酸 (8:2 FTCA), 及其盐 <sup>^</sup>             | 27854-31-5 | 1     | mg/kg | 0.010 | ND |
| 1H,1H,2H,2H-全氟-1-癸醇 (8:2 FTOH)                       | 678-39-7   | 1     | mg/kg | 0.100 | ND |



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| 检测项目                                                                                                                   | CAS No.                   | 限值 | 单位    | MDL   | A1 |
|------------------------------------------------------------------------------------------------------------------------|---------------------------|----|-------|-------|----|
| 1-碘-1H,1H,2H,2H-全氟癸烷 (8:2 FTI)                                                                                         | 2043-53-0                 | 1  | mg/kg | 0.100 | ND |
| 1H,1H,2H,2H-全氟癸基三乙氧基硅烷 (8:2 FTSi(OC <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> )                                       | 101947-16-4               | 1  | mg/kg | 0.100 | ND |
| 双[2-(全氟辛基)]乙基磷酸酯(8:2diPAP), 及其盐^                                                                                       | 678-41-1                  | 1  | mg/kg | 0.010 | ND |
| 2H, 2H, 3H, 3H-全氟十一烷酸 (8:3 FTCA), 及其盐^                                                                                 | 34598-33-9                | 1  | mg/kg | 0.010 | ND |
| 全氟辛基乙烯 (PFDE)                                                                                                          | 21652-58-4                | 1  | mg/kg | 0.100 | ND |
| 3-全氟庚基丙酸 (7:3 FTCA)                                                                                                    | 812-70-4                  | 1  | mg/kg | 0.010 | ND |
| 1H,1H,2H,2H-全氟癸基三氯硅烷 (8:2 FTSiCl <sub>3</sub> )/<br>1H,1H,2H,2H-全氟癸基三甲氧基硅烷 (8:2 FTSi(OCH <sub>3</sub> ) <sub>3</sub> ) | 78560-44-8<br>/83048-65-1 | 1  | mg/kg | 0.100 | ND |
| 2H-全氟-2-癸烯酸 (8:2 FTUCA)                                                                                                | 70887-84-2                | 1  | mg/kg | 0.010 | ND |
| 6:8 全氟次膦酸 (6:8 PFPI)                                                                                                   | 610800-34-5               | 1  | mg/kg | 0.010 | ND |
| 8:8 全氟次膦酸 (8:8 PFPI, 及其盐^)                                                                                             | 40143-79-1                | 1  | mg/kg | 0.010 | ND |
| 1H,1H,2H,2H-全氟十二烷基乙酸酯(8:2 FTOAc)                                                                                       | 37858-04-1                | 1  | mg/kg | 0.100 | ND |
| 单[2-(全氟辛基)乙基]磷酸盐 (8:2 monoPAP), 及其盐^                                                                                   | 57678-03-2                | 1  | mg/kg | 0.100 | ND |
| PFOA 相关化合物总和                                                                                                           | -                         | 1  | mg/kg | -     | ND |
| 结论                                                                                                                     | 符合                        |    |       |       |    |

## 备注:

- (1) 依据欧盟POPs法规 (EU) 2019/1021 附录I 及其修正法规 (EU) 2025/718, 在物质, 混合物或物品中, 全氟辛烷磺酸 (PFOS)及其盐的浓度等于或低于0.025 mg/kg(0,000025 %), PFOS相关化合物总和的浓度等于或低于1 mg/kg(0,0001%), 适用日期: 2025年12月3日起。
- (2) ^=物质是指下表中列出的盐/衍生物。

| 物质名称                                                                                                 | CAS No.     |
|------------------------------------------------------------------------------------------------------|-------------|
| <b>PFOS, 及其盐&amp;衍生物</b>                                                                             |             |
| 全氟辛烷磺酸(PFOS)                                                                                         | 1763-23-1   |
| 全氟辛基磺酸钾(PFOS-K)                                                                                      | 2795-39-3   |
| 全氟辛基磺酸锂(PFOS-Li)                                                                                     | 29457-72-5  |
| 全氟辛基磺酸钠(PFOS-Na)                                                                                     | 4021-47-0   |
| 全氟辛基磺酸铵(PFOS-NH <sub>4</sub> )                                                                       | 29081-56-9  |
| 全氟辛基磺酸二乙醇铵(PFOS-NH <sub>2</sub> (C <sub>2</sub> H <sub>4</sub> OH) <sub>2</sub> )                    | 70225-14-8  |
| 全氟辛基磺酸四乙基铵(PFOS-N(C <sub>2</sub> H <sub>5</sub> ) <sub>4</sub> )                                     | 56773-42-3  |
| 全氟辛基磺酸二癸二甲基铵(PFOS-N(C <sub>10</sub> H <sub>21</sub> ) <sub>2</sub> (CH <sub>3</sub> ) <sub>2</sub> ) | 251099-16-8 |
| 全氟辛基磺酸四丁基铵(PFOS-N(C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub> )                                     | 111873-33-7 |
| 全氟辛基磺酰氟(PFOS-F)                                                                                      | 307-35-7    |
| 双[十七氟辛烷磺酸]镁(PFOS-Mg)                                                                                 | 91036-71-4  |



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|                                                                           |              |
|---------------------------------------------------------------------------|--------------|
| 全氟辛基磺酰胺三乙胺 (PFOSA-C <sub>6</sub> H <sub>15</sub> N)                       | 76752-82-4   |
| <b>PFOA, 及其盐&amp;衍生物</b>                                                  |              |
| 全氟辛酸(PFOA)                                                                | 335-67-1     |
| 全氟辛酸钠(PFOA-Na)                                                            | 335-95-5     |
| 全氟辛酸钾(PFOA-K)                                                             | 2395-00-8    |
| 全氟辛酸银(PFOA-Ag)                                                            | 335-93-3     |
| 全氟辛酰氟(PFOA-F)                                                             | 335-66-0     |
| 全氟辛酸铵(APFO)                                                               | 3825-26-1    |
| 全氟辛酸锂(PFOA-Li)                                                            | 17125-58-5   |
| 全氟辛酸钴(PFOA-Co)                                                            | 35965-01-6   |
| 全氟辛酸铯(PFOA-Cs)                                                            | 17125-60-9   |
| 全氟辛酸铬(3+) (PFOA-Cr(3+))                                                   | 68141-02-6   |
| 全氟辛酸-哌嗪(2:1) (PFOA-NH(C <sub>4</sub> H <sub>10</sub> N))                  | 423-52-9     |
| 全氟辛酸盐                                                                     | 45285-51-6   |
| 全氟辛酸酐                                                                     | 33496-48-9   |
| 全氟辛酸四乙基胺                                                                  | 98241-25-9   |
| 全氟辛酸四甲基胺                                                                  | 32609-65-7   |
| 全氟辛酸四丙基胺                                                                  | 277749-00-5  |
| 全氟辛酸钾水合物 (PFOA-K(H <sub>2</sub> O) <sub>2</sub> )                         | 98065-31-7   |
| 全氟辛酸乙胺 (PFOA-C <sub>2</sub> H <sub>7</sub> N)                             | 1376936-03-6 |
| 全氟辛酸吡啶 (PFOA-C <sub>5</sub> H <sub>5</sub> N)                             | 95658-47-2   |
| 全氟辛酸苯基哌嗪 (PFOA-C <sub>10</sub> H <sub>14</sub> N <sub>2</sub> )           | 1514-68-7    |
| 全氟辛酸辛基三甲基胺 (PFOA-C <sub>11</sub> H <sub>26</sub> N)                       | 927835-01-6  |
| 全氟辛酰氯 (PFOA-Cl)                                                           | 335-64-8     |
| <b>8:2 FTS, 及其盐</b>                                                       |              |
| 1H,1H,2H,2H-全氟癸烷磺酸(8:2 FTS)                                               | 39108-34-4   |
| 1H,1H,2H,2H-全氟癸磺酸钾(8:2 FTS-K)                                             | 438237-73-1  |
| 1H,1H,2H,2H-全氟癸磺酸铵(8:2 FTS-NH <sub>4</sub> )                              | 149724-40-3  |
| 1H,1H,2H,2H-全氟癸磺酸钠(8:2 FTS-Na)                                            | 27619-96-1   |
| 1H,1H,2H,2H-全氟癸磺酸盐 (8:2 FTS(anion))                                       | 481071-78-7  |
| 1H,1H,2H,2H-全氟癸磺酰氯 (8:2 FTS-Cl)                                           | 27619-90-5   |
| <b>8:2 FTCA, 及其盐</b>                                                      |              |
| 2H,2H-全氟癸酸(8:2 FTCA)                                                      | 27854-31-5   |
| 四丁基磷2H,2H-全氟癸酸酯(8:2 FTCA-P(C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub> ) | 882489-14-7  |
| <b>8:2diPAP, 及其盐</b>                                                      |              |
| 双[2-(全氟辛基)]乙基磷酸酯(8:2diPAP)                                                | 678-41-1     |
| 双[2-(全氟辛基)]乙基磷酸酯钠(8:2diPAP-Na)                                            | 114519-85-6  |
| 双(2-羟乙基)铵双(全氟辛基)乙基磷酸氢                                                     | 57677-97-1   |



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|------------------------------------------------|--------------|
| 双[2-(全氟辛基)]乙基磷酸酯铵盐(8:2 diPAP-NH <sub>4</sub> ) | 93776-20-6   |
| 8:2 氟调聚物磷酸二酯离子                                 | 1411713-91-1 |
| <b>8:3 FTCA, 及其盐</b>                           |              |
| 2H,2H,3H,3H-全氟十一烷酸(8:3 FTCA)                   | 34598-33-9   |
| 2H,2H,3H,3H-全氟十一烷酸钾(8:3 FTCA-K)                | 83310-58-1   |
| 2H,2H,3H,3H-全氟十一酸锂(8:3 FTCA-Li)                | 67304-23-8   |
| <b>8:8 PFPI, 及其盐</b>                           |              |
| 8:8 全氟次膦酸 (8:8 PFPI)                           | 40143-79-1   |
| 8:8 全氟次膦酸钠盐 (8:8 PFPI-Na)                      | 500776-69-2  |
| 8:8 全氟次膦酸铒(3+)盐 (8:8 PFPI-Er)                  | 500776-70-5  |
| 8:8 全氟次膦酸镱(3+)盐 (8:8 PFPI-Yb)                  | 500776-71-6  |
| <b>8:2 monoPAP, 及其盐</b>                        |              |
| 单[2-(全氟辛基)乙基]磷酸盐 (8:2 monoPAP)                 | 57678-03-2   |
| 8:2 氟调聚物磷酸二铵盐                                  | 93857-44-4   |
| 8:2 氟调聚物磷酸钠盐                                   | 438237-75-3  |
| 双[2-(全氟辛基)乙基]磷酸铵盐                              | 1764-95-0    |
| 单[2-(全氟辛基)乙基]磷酸铵盐                              | 92401-44-0   |
| 单[2-(全氟辛基)乙基]磷酸单钠盐                             | 144965-22-0  |
| 单[2-(全氟辛基)乙基]磷酸单钾盐                             | 150033-28-6  |
| 单[2-(全氟辛基)乙基]磷酸氢铵盐                             | 2353-52-8    |

(3) 结论仅针对报告上的物质清单。

**欧盟 POPs 法规(EU) 2019/1021 附录 I 及其修正法规 (EU) 2021/277- 五氯苯酚(PCP)及其盐和酯**

检测方法: 参考 EN 17134-2:2023, 采用 GC-MS 进行分析。

| 检测项目           | CAS No.        | 限值 | 单位    | MDL | A1 |
|----------------|----------------|----|-------|-----|----|
| 五氯苯酚(PCP)及其盐和酯 | 87-86-5<br>和其它 | 5  | mg/kg | 0.5 | ND |
| 结论             |                |    |       |     | 符合 |

**欧盟 POPs 法规 (EU) 2019/1021 及其修正法规(EU) 2023/1608-全氟己烷磺酸(PFHxS)及其盐和相关化合物**

检测方法: 优化的 EN 17681-1:2025, 采用 LC-MS 或 LC-MS/MS 和 GC-MS 或 GC-MS/MS 进行分析。

| 检测项目                        | CAS No.    | 限值    | 单位    | MDL   | A1 |
|-----------------------------|------------|-------|-------|-------|----|
| <b>PFHxS, 及其盐</b>           |            |       |       |       |    |
| 全氟己基磺酸 (PFHxS), 及其盐^        | 355-46-4   | 0.025 | mg/kg | 0.010 | ND |
| <b>PFHxS 相关化合物</b>          |            |       |       |       |    |
| N-甲基全氟-1-己磺酰胺 (N-Me-PFHxSA) | 68259-15-4 | 1     | mg/kg | 0.010 | ND |



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| 检测项目                                                | CAS No.    | 限值 | 单位    | MDL   | A1 |
|-----------------------------------------------------|------------|----|-------|-------|----|
| 全氟己烷磺酰胺 (PFHxSA)                                    | 41997-13-1 | 1  | mg/kg | 0.010 | ND |
| N-[3-(二甲基氨基)丙基]十三氟己烷磺酰胺 (N-AP-FHxSA)                | 50598-28-2 | 1  | mg/kg | 0.010 | ND |
| 2-[甲基[(十三氟己基)磺酰基]氨基]乙基丙烯酸酯 (N-MeFHSEA)              | 67584-57-0 | 1  | mg/kg | 0.200 | ND |
| 2-[甲基[(十三氟己基)磺酰基]氨基]乙基甲基丙烯酸酯                        | 67584-61-6 | 1  | mg/kg | 0.200 | ND |
| 2-[乙基[(十三氟己基)磺酰基]氨基]乙基甲基丙烯酸酯                        | 67906-70-1 | 1  | mg/kg | 0.200 | ND |
| 十三氟-N-(2-羟基乙基)-N-甲基己烷磺酰胺 (MeFHxSE)                  | 68555-75-9 | 1  | mg/kg | 0.010 | ND |
| N-乙基-N-[(十三氟己基)磺酰基]甘氨酸 (EtFHxSAA), 及其盐 <sup>^</sup> | 68957-32-4 | 1  | mg/kg | 0.010 | ND |
| PFHxS 相关化合物总和                                       | -          | 1  | mg/kg | -     | ND |
| 结论                                                  | 符合         |    |       |       |    |

## 备注:

- (1) 2023年8月8日, 欧盟委员会于欧盟官方公报发布(EU)2023/1608法规, 修订了2023年5月30日发布的法规(EU)2019/1021附件I中关于全氟己烷磺酸(PFHxS)、其盐和PFHxS相关化合物清单。

| 物质                    | 范围         | 中间用途或其他规范的特殊豁免             |
|-----------------------|------------|----------------------------|
| PFHxS 及其盐             | 物质或混合物, 物品 | ≤ 0.025 mg/kg              |
| PFHxS相关物质             | 物质或混合物, 物品 | ≤ 1 mg/kg (单项或PFHxS相关物质总和) |
| PFHxS 及其盐和 PFHxS相关化合物 | 浓缩消防泡沫混合物  | ≤ 0.1 mg/kg (3年内进行审查以降低限值) |

- (2) 本报告中检测的全氟己烷磺酸(PFHxS)及其盐类和PFHxS相关化合物参考欧洲化学品管理局的“持久性有机污染物官方清单”, 请通过以下网络链接查找更多信息:

<https://echa.europa.eu/list-of-substances-proposed-as-pops>

- (3) <sup>^</sup>=物质是指下表列出的盐/衍生物

| 物质名称                                                                          | CAS No.      |
|-------------------------------------------------------------------------------|--------------|
| PFHxS, 及其盐&衍生物                                                                |              |
| 全氟己基磺酸(PFHxS)                                                                 | 355-46-4     |
| 全氟己基磺酸钠(PFHxS-Na)                                                             | 82382-12-5   |
| 全氟己基磺酸钾(PFHxS-K)                                                              | 3871-99-6    |
| 全氟己基磺酸锂(1:1)(PFHxS-Li)                                                        | 55120-77-9   |
| 全氟己基磺酸铵(PFHxS-NH <sub>4</sub> )                                               | 68259-08-5   |
| 全氟己基磺酸三苯基(苯基甲基)-磷鎓盐(PFHxS-BTPP)                                               | 1000597-52-3 |
| N,N,N-三丁基丁烷-1-胺全氟己基磺酸盐(PFHxS-N(C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub> ) | 108427-54-9  |



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|                                                                                                                                                                  |              |
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| N,N,N-三乙基胺全氟己基磺酸盐(PFHxS-N(C <sub>2</sub> H <sub>5</sub> ) <sub>4</sub> )                                                                                         | 108427-55-0  |
| 全氟己基磺酸与四氢吡咯络合物(PFHxS-NC <sub>4</sub> H <sub>9</sub> )                                                                                                            | 1187817-57-7 |
| 全氟-1-己基磺酸-N-[4-[[4-(二乙氨基)苯基][4-(乙氨基)-1-萘基]亚甲基]-2,5-环己二烯-1-亚基]-N-乙基-乙铵盐(PFHxS-(NC <sub>10</sub> H <sub>14</sub> ) <sub>3</sub> C <sub>5</sub> H <sub>4</sub> )    | 1310480-24-0 |
| 全氟-1-己基磺酸-N-[4-[[4-(二甲氨基)苯基][4-(乙氨基)-1-萘基]亚甲基]-2,5-环己二烯-1-亚基]-N-甲基-甲基铵盐(PFHxS-(NC <sub>8</sub> H <sub>10</sub> ) <sub>2</sub> C <sub>13</sub> H <sub>12</sub> )  | 1310480-27-3 |
| 全氟-1-己基磺酸-N-[4-[[4-(二甲氨基)苯基][4-(苯基氨基)-1-萘基]亚甲基]-2,5-环己二烯-1-亚基]-N-甲基-甲基铵盐(PFHxS-(NC <sub>8</sub> H <sub>10</sub> ) <sub>2</sub> C <sub>17</sub> H <sub>12</sub> ) | 1310480-28-4 |
| 全氟己基磺酸与β-环糊精络合物(PFHxS-C <sub>42</sub> H <sub>70</sub> O <sub>35</sub> )                                                                                          | 1329995-45-0 |
| 全氟己基磺酸与γ-环糊精络合物(PFHxS-C <sub>48</sub> H <sub>80</sub> O <sub>40</sub> )                                                                                          | 1329995-69-8 |
| 全氟己基磺酸三苯基硫鎓盐(TPS-PFHxS)                                                                                                                                          | 144116-10-9  |
| 全氟己基磺酸喹啉, 1-(羧甲基)-4-[2-[4-[4-(2,2-二苯基噻吩基)苯基]-1,2,3a,4,8b-六氢环戊并[b]呋喃-7-基]乙基]盐(PFHxS-C <sub>44</sub> H <sub>37</sub> N <sub>2</sub> O <sub>2</sub> )               | 1462414-59-0 |
| 全氟己基磺酸二苯基碘鎓盐(PFHxS-I(C <sub>6</sub> H <sub>5</sub> ) <sub>2</sub> )                                                                                              | 153443-35-7  |
| N,N,N-三甲基-全氟己基磺酸甲基铵盐(PFHxS-TMA)                                                                                                                                  | 189274-31-5  |
| 全氟己基磺酸与2-甲基-2-丙胺络合物(1:1)(PFHxS-NH <sub>2</sub> (CH <sub>3</sub> ) <sub>3</sub> )                                                                                 | 202189-84-2  |
| 全氟己基磺酸双[4-(1,1-二甲基乙基)苯基]碘鎓盐(PFHxS-I(C <sub>6</sub> H <sub>4</sub> ) <sub>2</sub> (C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub> )                                 | 213740-81-9  |
| 全氟己基磺酸镓(9Cl)(PFHxS-Ga)                                                                                                                                           | 341035-71-0  |
| 全氟己基磺酸双(4-甲基苯基)苯基硫鎓盐(1:1)(PFHxS-S(C <sub>7</sub> H <sub>7</sub> ) <sub>2</sub> C <sub>6</sub> H <sub>5</sub> )                                                   | 341548-85-4  |
| 全氟己基磺酸钪(PFHxS-Sc)                                                                                                                                                | 350836-93-0  |
| 全氟己基磺酸钕(PFHxS-Nd)                                                                                                                                                | 41184-65-0   |
| 全氟己基磺酸钇(PFHxS-Y)                                                                                                                                                 | 41242-12-0   |
| 全氟己基磺酸(硫代二-4,1-亚苯基)双[二苯基]硫鎓盐(PFHxS-S <sub>3</sub> (C <sub>6</sub> H <sub>5</sub> ) <sub>4</sub> (C <sub>6</sub> H <sub>4</sub> ) <sub>2</sub> )                  | 421555-73-9  |
| 全氟己基磺酸双[4-(1,1-二甲基丙基)苯基]碘鎓盐(PFHxS-I(C <sub>6</sub> H <sub>4</sub> ) <sub>2</sub> (C <sub>5</sub> H <sub>11</sub> ) <sub>2</sub> )                                | 421555-74-0  |
| 全氟己基磺酰氟(PFHxS-F)                                                                                                                                                 | 423-50-7     |
| 全氟己基磺酸三[4-(1,1-二甲基乙基)苯基]硫鎓盐(PFHxS-S(C <sub>6</sub> H <sub>4</sub> ) <sub>3</sub> (C <sub>4</sub> H <sub>9</sub> ) <sub>3</sub> )                                 | 425670-70-8  |
| 全氟己基磺酸锌(PFHxS-Zn)                                                                                                                                                | 70136-72-0   |
| 全氟己基磺酸与2,2'-亚氨基二乙醇络合物(PFHxS-NH(C <sub>2</sub> H <sub>5</sub> O) <sub>2</sub> )                                                                                   | 70225-16-0   |
| 全氟己基磺酸与三乙胺络合物(1:1)(PFHxS-N(C <sub>2</sub> H <sub>5</sub> ) <sub>3</sub> )                                                                                        | 72033-41-1   |
| 全氟己基磺酸双[(1,1-二甲基乙基)苯基]碘鎓盐(PFHxS-I(C <sub>6</sub> H <sub>4</sub> ) <sub>2</sub> (C <sub>4</sub> H <sub>9</sub> ) <sub>2</sub> )                                   | 866621-50-3  |
| 全氟己基磺酸(4-甲基苯基)二苯基硫鎓盐(PFHxS-S(C <sub>6</sub> H <sub>5</sub> ) <sub>2</sub> C <sub>7</sub> H <sub>7</sub> )                                                        | 910606-39-2  |
| 全氟己基磺酸[4-[(2-甲基-1-氧代-2-丙烯酰)氧基]苯基]二苯基硫鎓盐(PFHxS-S(C <sub>6</sub> H <sub>5</sub> ) <sub>2</sub> C <sub>10</sub> H <sub>9</sub> O <sub>2</sub> )                     | 911027-68-4  |
| 全氟己基磺酸铯(1:1)(PFHxS-Cs)                                                                                                                                           | 92011-17-1   |
| 二苯并[k,n][1,4,7,13]四氧杂硫环戊二烯, 19-[4-(1,1-二甲基乙基)苯基]-                                                                                                                | 928049-42-7  |



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| 6,7,9,10,12,13-六氟-,全氟己基磺酸盐(PFHxS-SC <sub>28</sub> H <sub>31</sub> O <sub>4</sub> ) |              |
| 全氟己基磺酰氯(PFHxS-Cl)                                                                  | 55591-23-6   |
| PFHxS-磺酸酯聚合物                                                                       | 911027-69-5  |
| 全氟己基磺酸盐                                                                            | 108427-53-8  |
| 全氟己基磺酸四丁基磷 (PFHxS-P(C <sub>4</sub> H <sub>9</sub> ) <sub>4</sub> )                 | 2310194-12-6 |
| <b>EtFHxSAA, 及其盐</b>                                                               |              |
| N-乙基-N-[(十三氟己基)磺酰基]甘氨酸(EtFHxSAA)                                                   | 68957-32-4   |
| N-乙基-N-[(十三氟己基)磺酰基]甘氨酸钾(EtFHxSAA-K)                                                | 67584-53-6   |
| N-乙基-N-[(十三氟己基)磺酰基]甘氨酸钠(EtFHxSAA-Na)                                               | 68555-70-4   |

(4) 结论仅针对报告上的物质清单。

## 欧盟 POPs 法规(EU) 2019/1021 附录 I-卤代化合物

检测方法: SGS 内部方法, 采用 GC-ECD 或 GC-MS 进行分析。

| 检测项目           | CAS No.           | 限值  | 单位    | MDL | A1 |
|----------------|-------------------|-----|-------|-----|----|
| 六氯丁二烯          | 87-68-3           | 禁用  | mg/kg | 5   | ND |
| 五氯苯            | 608-93-5          | 禁用  | mg/kg | 5   | ND |
| 多氯联苯 (PCBs)    | 1336-36-3<br>和其它  | 禁用  | mg/kg | 0.2 | ND |
| 多氯萘(PCNs)      | 70776-03-3<br>和其它 | 禁用  | mg/kg | 5   | ND |
| 六溴联苯           | 36355-01-8        | 禁用  | mg/kg | 5   | ND |
| 四溴二苯醚          | 40088-47-9<br>和其它 | -   | mg/kg | 5   | ND |
| 五溴二苯醚          | 32534-81-9<br>和其它 | -   | mg/kg | 5   | ND |
| 六溴二苯醚          | 36483-60-0<br>和其它 | -   | mg/kg | 5   | ND |
| 七溴二苯醚          | 68928-80-3<br>和其它 | -   | mg/kg | 5   | ND |
| 十溴二苯醚(decaBDE) | 1163-19-5         | -   | mg/kg | 5   | ND |
| 多溴二苯醚总和*       | -                 | 500 | mg/kg | -   | ND |
| 结论             |                   |     |       |     | 符合 |

## 备注:

- (1) 多溴二苯醚总和\*是指四溴二苯醚、五溴二苯醚、六溴二苯醚、七溴二苯醚和十溴二苯醚的总和。
- (2) 豁免: 四溴二苯醚、五溴二苯醚、六溴二苯醚、七溴二苯醚和十溴二苯醚在物质中的法规限值是 10 mg/kg, 混合物和物品中四溴、五溴、六溴、七溴和十溴二苯醚的总和不得超过 500 mg/kg, 该限制应在 2021 年 7 月 16 日之前由委员会审查和评估。
- (3) 豁免: RoHS 指令(2011/65/EU)定义的电器电子产品中四溴二苯醚、五溴二苯醚、六溴二苯醚、七溴二苯醚和十溴二苯醚豁免于 POPs 法规。



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## 检测报告

编号: SHAEC25023685304

日期: 2025 年 09 月 15 日

第 11 页, 共 14 页

(4) 在不影响指令 96/59/EC 的情况下, 允许使用在本法规生效时已经使用的物品。成员国应尽快但不迟于 2025 年 12 月 31 日确定并停止使用多氯联苯含量超过 0.005% 且体积大于 0.05 立方分米的设备 (如变压器、电容器或其他含有液体库存的容器)。

**欧盟 POPs 法规(EU) 2019/1021 附录 I 及其修正法规 (EU) 2025/843- UV-328**

检测方法: SGS 内部方法, 采用 GC-MS 进行分析。

| 检测项目   | CAS No.    | 限值  | 单位    | MDL | A1 |
|--------|------------|-----|-------|-----|----|
| UV-328 | 25973-55-1 | 100 | mg/kg | 1   | ND |
| 结论     | 符合         |     |       |     |    |

**备注:**

(1) 依据欧盟 POPs 法规(EU) 2019/1021 附录 I 及其修正法规 (EU) 2025/843, 为加强《持久性有机污染物重新预测条例》的应用和执行, 当化学物质存在于物质、混合物和物品中时, 为 UV-328 设定了无意痕量污染物 (UTC) 值, 这一 UTC 限制值将在四年内得到加强。

| 物质     | 范围        | 中间用途或其他规范的特殊豁免   | 生效日期     |
|--------|-----------|------------------|----------|
| UV-328 | 物质、混合物和物品 | $\leq 100$ mg/kg | 2025.8.4 |
|        |           | $\leq 10$ mg/kg  | 2027.8.4 |
|        |           | $\leq 1.0$ mg/kg | 2029.8.4 |

**欧盟 POPs 法规(EU) 2019/1021 附录 I 及其修正法规 (EU) 2020/1204-杀虫剂**

检测方法: SGS 内部方法, 采用 GC-MS 或 GC-MS/MS 进行分析。

| 检测项目 | CAS No.  | 限值 | 单位    | MDL | A1 |
|------|----------|----|-------|-----|----|
| 六氯苯  | 118-74-1 | 10 | mg/kg | 5   | ND |

除非另有说明, 参照 ILAC-G8:09/2019, 使用简单接受 ( $w=0$ ) 的二元判定规则进行符合性判定。

除非另有说明, 此报告结果仅对检测的样品负责。本报告未经本公司书面许可, 不可部分复制。

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。

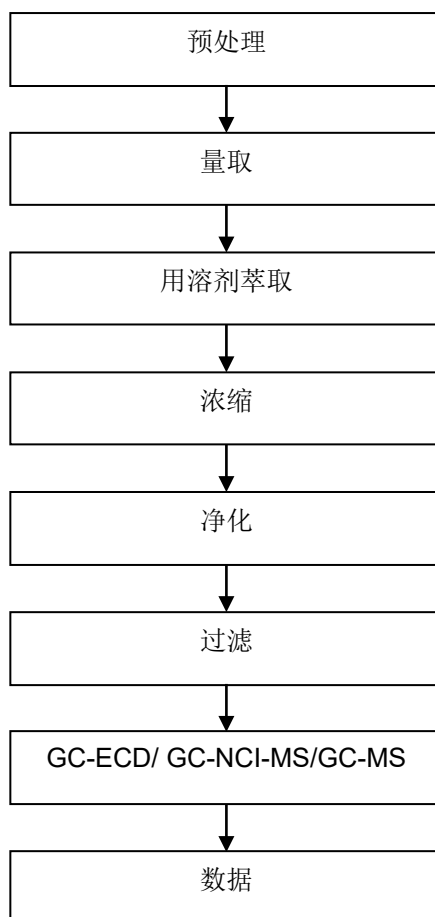


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## 氯化石蜡检测流程图



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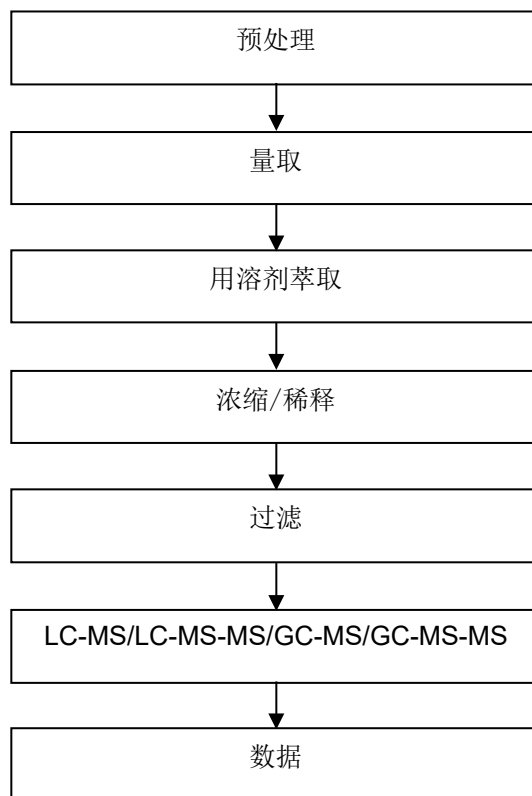
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## PFASs/ PFOS/PFOA 检测流程图



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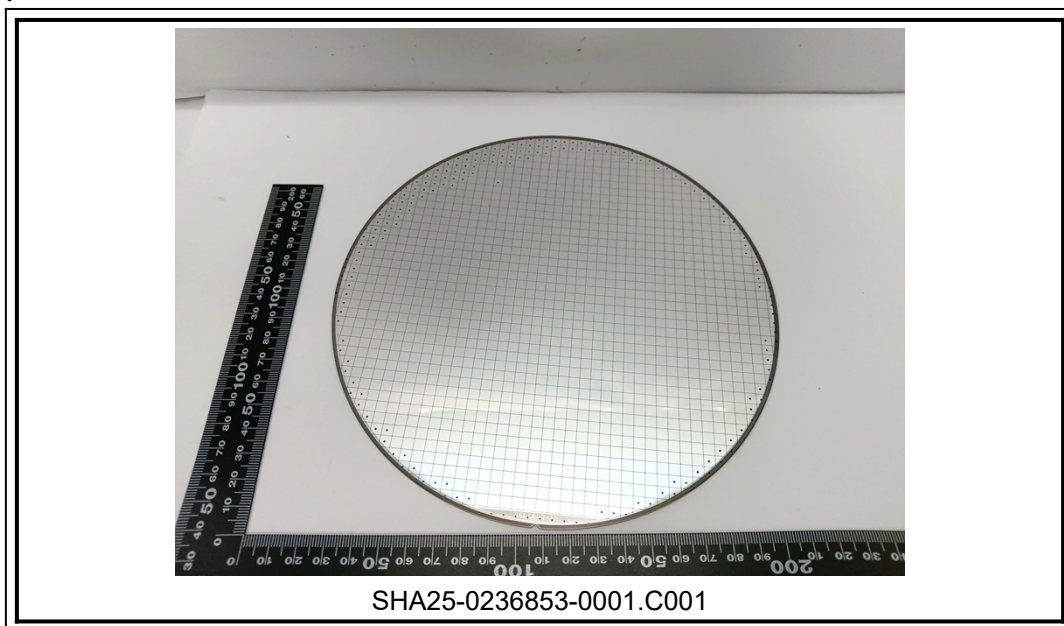
## 检测报告

编号: SHAEC25023685304

日期: 2025 年 09 月 15 日

第 14 页, 共 14 页

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