



注意事项

1. 服务双方均遵守中科院委托检测/服务合同标准通用条款的约定;

Both parties must comply with the provisions of the general agreement in the contract registration framework by agreement.
2. 本报告的所有方均归委托人所有, 未经过“北京中科光析科学技术研究所”和“测试中心”盖章一律无效;

The report is a valid document/ document of the responsible person of the service party. The report is not valid without the special seal (signature) of “Beijing SMOA Research Institute of Science and Technology”;
3. 因此测试报告所发出的任何结果, 服务方会严格按照委托方保密, 除告知相关政府部门, 符合相应标准要求, 否则未经委托方同意, 服务方不得将结果内容作为第三方的机密披露;

All results of the investigation will be strictly confidential to the client unless required by relevant government requirements. Apart from the strict procedure we discuss according to the results in any third party system for reasons of the principle.
4. 本报告不得部分复制、私自转让、使用、复制、篡改或以其它任何形式篡改的均属无效, 本研究所将对上述行为予以严厉追究法律责任;

Any copy, transfer, misappropriation, false use, alteration or any other form of tampering of the report in whole or in part is invalid. The service party shall strictly investigate the corresponding legal liability for the above-mentioned acts.
5. 测试标准涉及的数据或结论必须是基于特定的时间、特定的方法以及特定的场所标准对测试样品进行, 或评价、性能或质量进行的结果; 参照不同的方法和标准, 在不同的测试条件下对样品进行测试有可能得出不同的结论, 本报告中的研究测试报告, 会参考相关标准的结果, 但根据实际情况可能对某些数据使用标准进行适当修改或舍弃;

The data or conclusions derived from the test results are descriptions of the characteristics, components, performance or quality of the test samples based on the specific time, method and applicable standards, using different methods and standards in different environmental conditions in direct samples, are valid in different conditions. This report is a research test report which will refer to the principles of relevant standards, but must not be carried out according to the actual situation, and the results are for reference only.
6. 服务方接受样品进行测试的前提是, 委托方不得将该测试数据作为进行法律诉讼的依据;

The premise that the service party accepts the sample for testing is that the client cannot use the test report as a basis for legal action.
7. 测试结果仅代表送检样品, 不对该样品所代表的数量负责, 样品来源信息由委托方提供, 并保证来源信息的真实性, 服务方不负责其真实性; 本报告有效期 12 个月;

The test result only represents the sample used for inspection, and shall not be responsible for the batch inspection of the sample sent for inspection. The sample source information shall be provided by the client and the authenticity of the source information shall be guaranteed. The service party shall not be responsible for its authenticity. The present report is valid for 12 months.
8. 本报告仅对所送样品的测试结果负责, 测试结果不代表对样品的评价且仅用于委托方科研、教学或内部质量控制、企业产品研发等目的, 出具的检测报告如果仅确定为特定委托方内部使用, 不对外公布或作他用, 不得用于仲裁、诉讼、司法等法律用途, 对于测试数据的使用, 使用所产生的直接或间接的一切法律后果, 服务方不承担任何法律责任;

This report is only responsible for the test results of the tested samples, and the test data only reflect the evaluation of the samples and are only used for the purposes of scientific research, teaching or internal quality control, enterprise product development, etc. The test results issued are limited to the internal use of specific clients and have no legal effect for the society, can't be used for legal purposes such as safeguarding rights, disputes, judiciary, etc. The service party shall not assume any economic and legal liability for the use of test data, direct or indirect losses caused by the use of all legal consequences.
9. 由于服务方的原因导致需要对测试结果内容进行更改的, 服务方应当重新为委托方出具测试报告, 并承担更改测试结果产生的费用, 委托方为服务方发送测试报告, 由于委托方自身的原因导致需要对测试结果内容进行更改的, 委托方应当向服务方提出修改申请, 经服务方审核后同意以重新出具测试结果的; 相关费用由委托方承担, 委托方向服务方发送测试报告;

If the content of the test results needs to be changed due to the reasons of the service party, the service party shall re-issue the test results to the applicant again, and bear the cost of changing the test results, and instruct the service party to submit the revised test results. If the content of the test results needs to be changed due to the reasons of the applicant, the applicant shall submit an application for modification to the service party. If the test result is re-issued after the examination and approval of the service party, the related expenses shall be borne by the applicant, and the applicant shall submit the test result to the service party for re-issuance.



检测报告

报告编号: SHX23070459-05

日期: 2023-08-24

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委托单位: 格域新材料科技(山东)有限公司

地址: 山东省日照市东港区石臼街道辉煌国际海港城 006 幢 0 单元 802 号

样品信息

样品名称: ABT 吸管 ABTM-GP6085F

样品批号: /

样品数量: 4 个

样品获取方式: 客户送样

样品描述: 固体

以上样品及信息由客户提供及确认。ICAS 不负责样品的真伪性, 不承担证实客户提供信息的准确性、适当性和(或)完整性责任。

样品编号: X23070459-05

样品接收日期: 2023-07-11

样品检测日期: 2023-07-11~2023-08-23

检测内容:

检测地址: 上海市闵行区瓶北路 155 号

检测项目: 请参见下一页。

检测方法: 请参见下一页。

检测结果: 请参见下一页。

编制

陈浩

(陈浩)

审核

祝正阳

(祝正阳 赵汶斌)



英格尔检测技术服务(上海)有限公司

签发
检验检测专用章

3

(授权签字人: 王瑞)



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一、检测项目: 苯并(a)芘

| 检测项目 | 检测方法 | 单位 | 检出限 | 检测结果 |
|--------|---------------------|-------|-----|------|
| 苯并(a)芘 | AfPS GS 2019:01 PAK | mg/kg | 0.2 | 未检出 |

备注: 未检出表示小于检出限

二、检测项目: 生物分解率^{#S}

检测方法: GB/T 33797-2017/ISO 15985:2014 塑料 在高固体份堆肥条件下最终厌氧生物分解能力的测定 采用分析测定释放生物气体的方法

检测结果:

| 受试物名称/编号 | 试验周期(天) | 生物分解百分率 (%) | 相对生物分解百分率 (%) |
|-------------------------|---|-------------|---------------|
| 参比材料/微晶纤维素 | 180天 | 95.4 | / |
| ABT 吸管 /OX230717-022 | | 91.8 | 93.4 |
| 试验有效性 | (1)参比材料在 15 天后的生物分解百分率, 超过 70%: <input checked="" type="checkbox"/> 符合/ <input type="checkbox"/> 不符合。 (2)在试验 15 天时每只参比材料消化容器内的生物分解百分率与平均值之间的偏差不超过 20%: <input checked="" type="checkbox"/> 符合/ <input type="checkbox"/> 不符合。 | | |

注:

1.相对生物分解百分率, 是样品生物分解百分率相对于参比材料生物分解百分率的百分比, 计算公式为: 样品的生物分解百分率除以参比材料的生物分解百分率乘以 100%。

样品照片



此照片仅限于随 ICAS 此份报告使用

报告结束



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检测报告附页

1. 接种物、试验材料和参比材料信息

表1. 基本信息表

| 项目 | 接种物 (堆肥) | 参比材料 (微晶纤维素) | 样品 (OX230717-022) |
|------------------|-------------|-----------------|----------------------|
| pH | 8.37 | / | / |
| 水分含量 (%) | 63.6 | 2.7 | 0.1 |
| 总干固体含量 (%) | 36.4 | 97.3 | 99.9 |
| 挥发性固体含量 (%) | 41.2 | 100.0 | 99.3 |
| 总有机碳含量 (%) | 20.93 | 44.49 | 86.49 |
| 挥发性脂肪酸(g/kg 湿重物) | 0.26 | / | / |
| 氨氮 (g/kg 湿重物) | 0.90 | / | / |

2. 试验体系信息

(1) 试验在52°C ± 2°C的恒温、弱光条件下, 于2L的试验体系中进行。

(2) 接种物来源: 自制厌氧消化堆肥, 肥龄: 4个月。使用前在52°C ± 2°C条件下预培养7天。

(3) 参比材料微晶纤维素分子式: (C₆H₁₀O₅)_n, 分子量: (162.14)_n, 性状: 白色粉末, 纯度: 色谱级。

(4) 本测试方法模拟最佳高固体含量的强烈厌氧消化环境, 在试验中通过连续监测、定期测量反应容器内生物气体的体积和含量来计算生物气体的累计产量。试验材料的实际生物气体释放量与该材料通过测量得到的总有机碳量之比为生物分解百分率。生物分解百分率不包括已转化为新的细胞生物质的碳量。

表2. 试验体系信息表

| 名称 | 接种物 | | | 参比材料 (微晶纤维素) | | | 样品 (OX230717-022) | | |
|------------------|--------|---------|---------|--------------|--------|--------|-------------------|--------|--------|
| | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| 培养土实际加入量 (湿重), g | 999.98 | 1000.04 | 1000.01 | 1000.01 | 999.98 | 999.99 | 999.99 | 999.97 | 999.99 |
| 接种物总干固体含量, g | 363.66 | 363.68 | 363.67 | 363.67 | 363.66 | 363.66 | 363.66 | 363.66 | 363.66 |
| 接种物挥发性固体含量, g | 149.71 | 149.72 | 149.71 | 149.71 | 149.71 | 149.71 | 149.71 | 149.71 | 149.71 |
| 待测样品实际加入量, g | / | / | / | 15.47 | 15.48 | 15.46 | 15.11 | 15.15 | 15.12 |
| 待测样品总干固体含量, g | / | / | / | 15.06 | 15.07 | 15.05 | 15.10 | 15.14 | 15.11 |
| 待测样品挥发性固体含量, g | / | / | / | 15.05 | 15.06 | 15.04 | 14.99 | 15.03 | 15.00 |
| 试验材料初始碳含量, g | / | / | / | 6.70 | 6.70 | 6.69 | 13.06 | 13.09 | 13.07 |

备注: /



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3试验结果

表3.各反应容器累计气态碳产生量

| 天数 | 各反应容器累计气态碳产生量, g | | | | | | | | | | | |
|-----|------------------|-----|-----|-----|-------|-----|-----|-----|--------------|-----|-----|-----|
| | 空白对照 | | | | 阳性参比物 | | | | OX230717-022 | | | |
| | 1 | 2 | 3 | 平均值 | 1 | 2 | 3 | 平均值 | 1 | 2 | 3 | 平均值 |
| 20 | 0.1 | 0.1 | 0.1 | 0.1 | 1.0 | 1.0 | 1.1 | 1.0 | 0.1 | 0.1 | 0.1 | 0.1 |
| 60 | 0.3 | 0.3 | 0.3 | 0.3 | 3.3 | 3.1 | 3.0 | 3.1 | 0.4 | 0.3 | 0.3 | 0.3 |
| 100 | 0.4 | 0.5 | 0.5 | 0.5 | 4.3 | 4.3 | 4.1 | 4.2 | 0.6 | 0.5 | 0.5 | 0.5 |
| 140 | 0.6 | 0.7 | 0.6 | 0.6 | 5.5 | 5.5 | 5.3 | 5.4 | 0.7 | 0.7 | 0.7 | 0.7 |
| 180 | 0.8 | 0.8 | 0.8 | 0.8 | 6.0 | 5.9 | 5.7 | 5.9 | 0.9 | 0.9 | 0.9 | 0.9 |

表4.试验过程中生物分解百分率及其平均值

| 天数 | 生物分解百分率, % | | | | | | | |
|----|------------|------|------|------|--------------|------|------|------|
| | 阳性参比物 | | | | OX230717-022 | | | |
| | 1 | 2 | 3 | 平均值 | 1 | 2 | 3 | 平均值 |
| 5 | 14.3 | 13.9 | 14.1 | 14.1 | 5.1 | 5.2 | 5.0 | 5.1 |
| 10 | 27.3 | 26.8 | 25.5 | 26.5 | 10.4 | 10.5 | 10.3 | 10.4 |
| 15 | 40.6 | 39.6 | 40.2 | 40.1 | 14.5 | 14.3 | 14.1 | 14.3 |
| 20 | 54.1 | 51.5 | 51.3 | 52.3 | 19.2 | 18.9 | 18.6 | 18.9 |
| 25 | 67.7 | 64.4 | 65.6 | 65.9 | 23.5 | 23.4 | 23.2 | 23.4 |
| 30 | 80.5 | 78.2 | 79.8 | 79.5 | 27.6 | 27.2 | 27.3 | 27.4 |
| 35 | 88.4 | 84.8 | 85.4 | 86.2 | 30.3 | 30.8 | 31.1 | 30.7 |
| 40 | 93.6 | 90.3 | 88.6 | 90.8 | 33.6 | 33.5 | 33.8 | 33.6 |
| 45 | 94.2 | 91.5 | 89.5 | 91.7 | 35.8 | 35.2 | 35.4 | 35.5 |
| 50 | 95.1 | 92.3 | 90.2 | 92.5 | 39.2 | 38.9 | 38.6 | 38.9 |
| 55 | 95.3 | 92.5 | 90.3 | 92.7 | 42.1 | 41.8 | 42.4 | 42.1 |
| 60 | 95.4 | 92.6 | 90.4 | 92.8 | 45.3 | 45.2 | 45.5 | 45.3 |
| 65 | 95.5 | 92.8 | 90.5 | 92.9 | 48.5 | 48.6 | 48.8 | 48.6 |
| 70 | 95.6 | 92.9 | 90.6 | 93.0 | 51.5 | 51.7 | 51.9 | 51.7 |
| 75 | 95.7 | 93.0 | 90.7 | 93.1 | 53.6 | 53.6 | 53.7 | 53.6 |
| 80 | 95.8 | 93.1 | 90.8 | 93.2 | 55.2 | 54.8 | 55.6 | 55.2 |
| 85 | 95.9 | 93.2 | 90.9 | 93.3 | 57.5 | 57.2 | 57.6 | 57.4 |
| 90 | 96.0 | 93.3 | 91.0 | 93.4 | 60.8 | 60.5 | 60.9 | 60.7 |



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表4. 试验过程中生物分解百分率及其平均值

| 天数 | 生物分解百分率, % | | | | | | | |
|-----|------------|------|------|------|--------------|------|------|------|
| | 阳性参比物 | | | | OX230717-022 | | | |
| | 1 | 2 | 3 | 平均值 | 1 | 2 | 3 | 平均值 |
| 95 | 96.1 | 93.4 | 91.1 | 93.5 | 62.9 | 62.6 | 63.1 | 62.9 |
| 100 | 96.2 | 93.5 | 91.2 | 93.6 | 65.2 | 65.1 | 65.7 | 65.3 |
| 105 | 96.3 | 93.6 | 91.3 | 93.7 | 67.6 | 66.8 | 67.3 | 67.2 |
| 110 | 96.4 | 93.7 | 91.4 | 93.8 | 69.5 | 68.5 | 68.9 | 69.0 |
| 115 | 96.5 | 93.8 | 91.5 | 93.9 | 71.7 | 70.3 | 70.6 | 70.9 |
| 120 | 96.6 | 93.9 | 91.6 | 94.0 | 73.6 | 71.9 | 72.3 | 72.6 |
| 125 | 96.7 | 94.1 | 91.8 | 94.2 | 75.8 | 73.6 | 73.9 | 74.4 |
| 130 | 96.8 | 94.2 | 91.9 | 94.3 | 77.4 | 75.3 | 75.6 | 76.1 |
| 135 | 96.9 | 94.3 | 92 | 94.4 | 79.6 | 76.9 | 77.3 | 77.9 |
| 140 | 97.0 | 94.4 | 92.1 | 94.5 | 81.5 | 78.6 | 78.9 | 79.7 |
| 145 | 97.1 | 94.6 | 92.2 | 94.6 | 83.6 | 80.4 | 80.6 | 81.5 |
| 150 | 97.2 | 94.7 | 92.3 | 94.7 | 85.3 | 82.2 | 82.2 | 83.2 |
| 155 | 97.3 | 94.8 | 92.4 | 94.8 | 87.5 | 83.9 | 83.8 | 85.1 |
| 160 | 97.4 | 94.9 | 92.5 | 94.9 | 88.5 | 85.6 | 85.5 | 86.5 |
| 165 | 97.5 | 95.1 | 92.6 | 95.1 | 89.6 | 87.2 | 87.1 | 88.0 |
| 170 | 97.6 | 95.2 | 92.7 | 95.2 | 90.8 | 88.9 | 88.7 | 89.5 |
| 175 | 97.8 | 95.3 | 92.8 | 95.3 | 91.1 | 90.8 | 90.5 | 90.8 |
| 180 | 97.9 | 95.4 | 92.9 | 95.4 | 91.9 | 91.6 | 92.1 | 91.8 |



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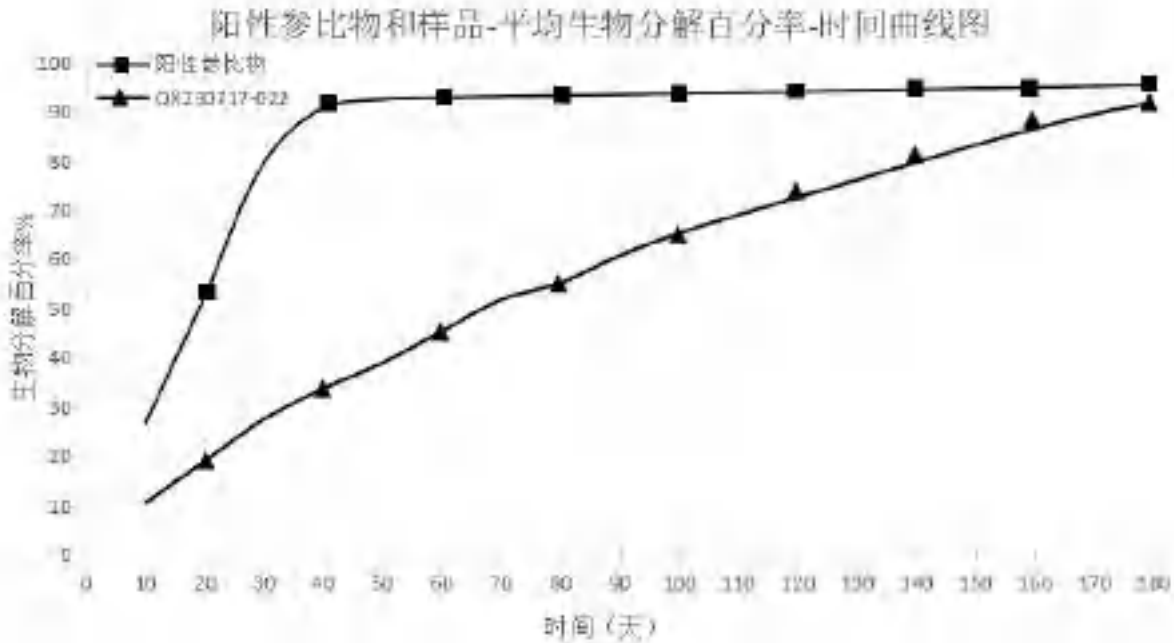


图1.参比材料和样品组(OX230717-022) 平均生物分解百分率-时间曲线图

4.试验结果有效性分析

(1)参比材料组180天的生物分解率为97.9%, 95.4%和92.9%, 平均值为95.4%, 符合15天内参比材料生物分解百分率大于70%的要求;

(2)试验180天时参比材料组反应容器内生物分解百分率与平均值之间的偏差分别为3.3%、0.0%和3.3%, 均不超过20%。综上所述, 试验结果有效。



广东省微生物分析检测中心
GUANGDONG DETECTION CENTER OF MICROBIOLOGY

分析检测报告

REPORT FOR ANALYSIS

报告编号
Report No. 2023-SQW04R04

样品名称
Name of Sample 厌氧生物降解 PP 材料

委托单位
Applicant 洛城新材料科技(茂名)有限公司,
中国石油化工股份有限公司茂名分公司研究院

检测类型
Test Type 委托检测

单位地址: 广州市先烈中路100号大院66号楼
Address: Building 66, No.100 Central Xianle Road, Guangzhou, China

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Website:

广东省微生物分析检测中心

GUANGDONG PROVINCE CENTER FOR MICROBIOLOGY

分析检测报告

Number: GDM-20230601



报告编号 (Report No.): 202306010004004 检测项目 (Verification Item): 食品微生物

| 样品名称 Name of Sample | 送检生物样品 样品名称 Microbiological Sample Name | 检测类型 Test Type | 委托检测 Requester |
|---------------------------------------|--|---------------------------------------|--------------------------------|
| 委托单位 Applicant | 广东康利科技(国际)有限公司 中国石化化工股份有限公司 湛江石化生产装置 | 菌 种 is-Ident | 湛江市霞山区霞山大道 16 号大院 1 号 110 室 |
| 样品来源 Sample Source | 进口 | 样品数量 Sample Quantity | 200g |
| 样品物理形态号 Special List No. of Sample | 液相包 4180-005 | 样品状态和特征 Sample State and Character | 液相包, 密封 |
| 采样日期 Sample Collection Date | 2023-11-03 | 报告日期 Completion Date | 2024-04-07 |
| 检测项目 Test Item | 食品微生物检测 | | |
| 检测依据标准 The Standard used | 参照《食品微生物检验各主要项目微生物检验方法标准》(GB 4789系列标准) GB 4789.2-2017 | | |
| 检测结果 Test Result | 经检测, 在平板计数条件下, 该样品在 25℃ 培养 24 小时的一个平行样品检测结果为 5.00E+05, 2.00E+05, 平均值为 3.50E+05。  | | |
| 检测机构 Institution | 广东省微生物分析检测中心/广东省微生物检测有限公司/湛江分公司-湛江 | | |

编制: 李二航

复核: 叶莹

审核: 李德成

批准: 梅承芳

1 试验方法

2.1 试验设计

设计 1 个空白对照瓶、1 个参比材料瓶和 1 个试验材料瓶。每组设计 3 个平行，具体见下表。

表 1 试验设计

| 组别 | | 试验材料量 | 参比材料量 | 空白对照量 |
|----------|--------|-------|-------|-------|
| 试验材料 (g) | 培养基 | 16.2 | — | — |
| | 接种物固体量 | 16.1 | — | — |
| 参比材料 (g) | 培养基 | — | 16.7 | — |
| | 接种物固体量 | — | 16.0 | — |
| 接种物 (g) | 总量 | 1660 | 1660 | 1660 |

2.2 分析及过程控制

(1) 试验开始时，按要求将接种物和试验材料/参比材料在无菌条件下接种于 2 mm × 2 mm 的琼脂板上 2 L 试验液池，接种到大培养瓶中开始试验。

(2) 试验过程中，记录产气量、培养基生物气体产生量。

2.3 试验条件

将所有试验瓶置于 37°C ± 2°C 水浴锅中连续培养。试验过程中保持黑暗。

3 数据统计

试验结束时，统计试验材料和参比材料的气体量、生物分解率以及产气量。

4 试验结果

在本试验条件下，该样品在 40 天试验结束时三个平行的生物分解率分别为 3.8%、3.8%、3.8%，平均值为 3.8%。参比材料在试验第 14 天和 90 天时的生物分解率分别为 71.2% 和 86.15%。

试验结果见图 1-2。

(接下页)

1 试验方法

2.1 试验设计

设计 1 个空白对照瓶、1 个参比材料瓶和 1 个试验材料瓶。每组设计 3 个平行，具体见下表。

表 1 试验设计

| 组别 | | 试验材料量 | 参比材料量 | 空白对照量 |
|----------|--------|-------|-------|-------|
| 试验材料 (g) | 培养基 | 16.2 | — | — |
| | 挥发酸固体量 | 16.1 | — | — |
| 参比材料 (g) | 培养基 | — | 16.7 | — |
| | 挥发酸固体量 | — | 16.0 | — |
| 液料物 (g) | 总量 | 1660 | 1660 | 1660 |

2.2 分析及过程控制

(1) 试验开始时，依次向试验瓶和参比材料/参比材料的小容量中加入液料 1 mm-2 mm，然后加入 2 L 试验液池，最后将入水浴箱中进行试验。

(2) 试验过程中，记录室温、培养基生物气体产生量。

2.3 试验条件

将所有试验瓶置于 32°C±2°C 水浴箱中进行培养。试验过程中保持黑暗。

3 数据统计

试验结束时，统计试验瓶和参比材料的气体、生物分解率以及有机酸量。

4 试验结果

在本试验条件下，该样品在 48 h 试验结束时三个平行的生物分解率分别为 3.8%、3.8%、3.8%，平均值为 3.8%。参比材料瓶在试验第 14 d 和 90 d 时的生物分解率分别为 71.2% 和 86.15%。

详细结果见附件。

(接下页)

报告编号 (Report No.): 2023ESQ0004804

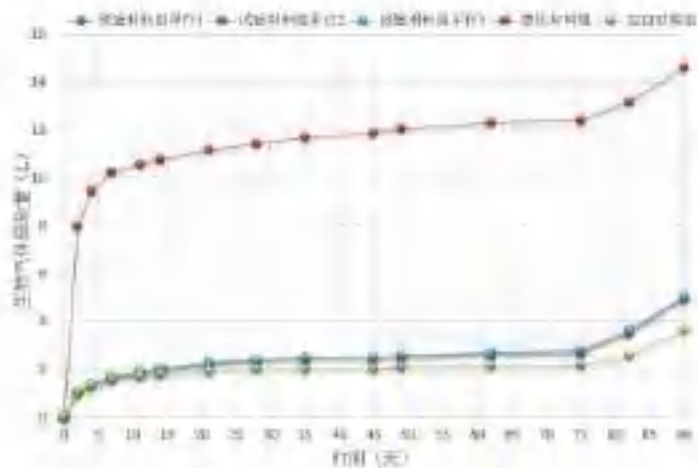


图1: 生物气体产量变化曲线图

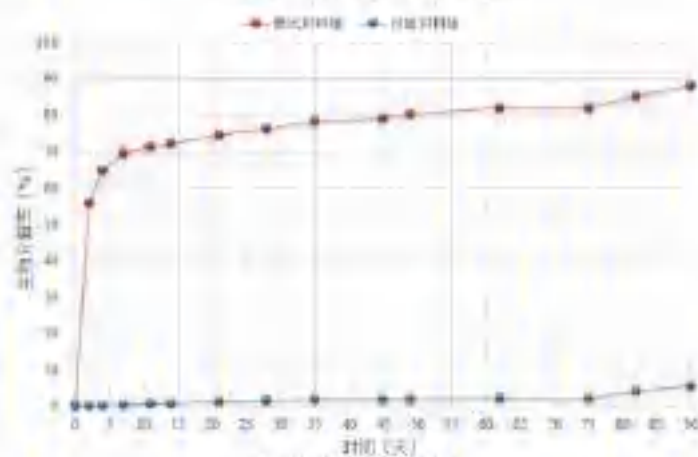


图2: 生物分解率变化曲线图

(接下页)

报告编号 (Report No.): 2022JKSQ00014804

5 试验有效性

- (1) 参比材料在试验第 14 d 时的生物分解率为 72.2%，大于 70%。
- (2) 试验品和参比材料三个平行生物分解率与平均值之间的最大偏差为 6.7%，不超过 10%。

以上指标均说明本次试验结果是有效的。

6 试验材料照片



图 3 试验材料处理前 (左) 和处理后 (右)

(以下空白)

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宁波海关技术中心

检测报告

报告编号 232300011846

样品名称 PPZ30s-1

委托单位 中国石油化工股份有限公司茂名分公司

检测报告

委托单位: 中国石化化工股份有限公司茂名分公司
地 址: 广东省茂名市双山北路9号大院
样品名称: PP2106-1
样品性质: 灰黄色固体
样品数量: 1袋约 500g
样品包装: 透明塑料薄膜

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委托日期: 2023.12.01
检测日期: 2023.12.01 - 2024.05.11
检测地址: 广州市白云区神山街道康乐大厦C座

摘要概述:

项目: 塑料 在热固体热稳定条件下最终挥发物总碳含量检测, 采用热解测定挥发物气体的方法
依据: GB13370-2017 塑料 在热固体热稳定条件下最终挥发物总碳含量的测定, 采用热解测定挥发
物气体的方法

结论: 在本试验条件下, M14 灰色样品的挥发物总碳含量为 11.70%。

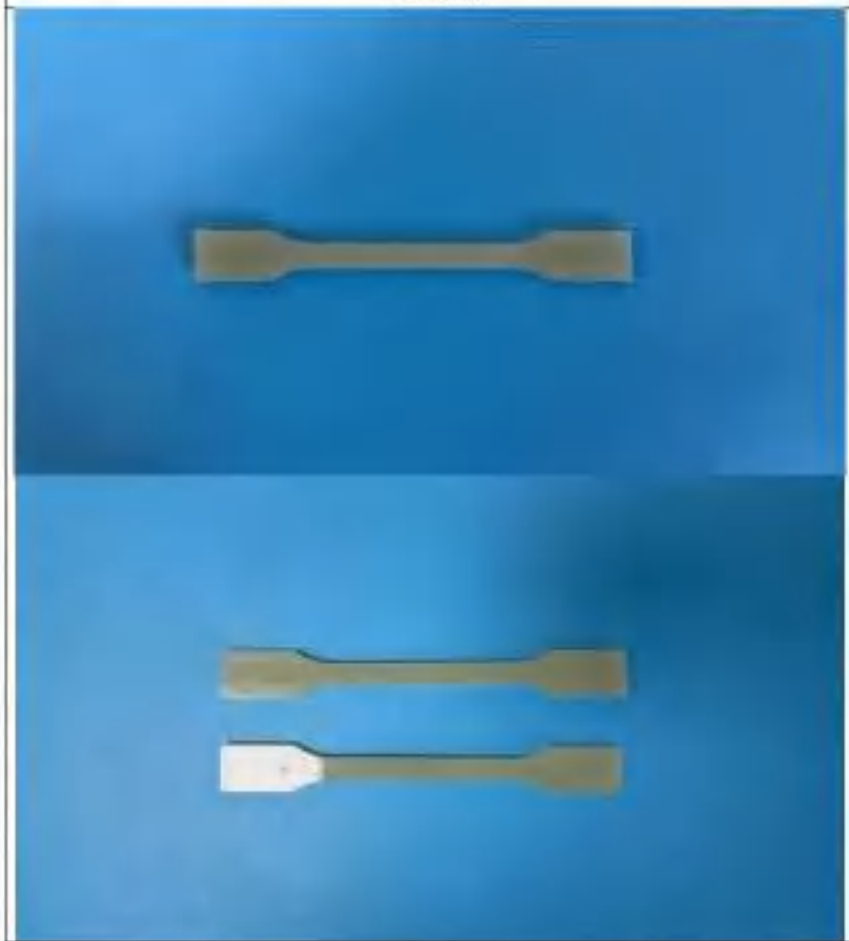
宁波海关技术中心



授权签字人:
报告发布日期: 2024.05.14

样品编号: ZJ200001146

样品照片



除非另有说明,本报告中的测试结果仅对收到的样品负责。

宁波海大技术中心

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联系电话:0574-8762790

投稿邮箱: zhs@nbhg.com

第 3 页 共 7 页

肥料 在高固体份堆肥条件下最终厌氧生物分解能力的测定 采用分析测定释放生物气体的方法

1. 材料和方法

1.1 试剂和菌

名称: 硫酸钾培养基;

分子式: K_2SO_4 ;

有机碳含量: 0.44%;

挥发总固含量: 100%;

编号: 21200705;

生产厂家: 国药集团化学试剂有限公司。

1.2 培养基

培养基来源: 青岛仪器(海尔)有限公司;

培养基类别: 细菌培养基;

编号: 21240108;

pH: 8.30;

总干物质含量: 35.16%;

挥发总固含量: 42.26%;

厌氧发酵时间: 7天;

厌氧发酵温度: $52\text{C} \pm 2\text{C}$;

1.3 受试样品

处理方式: 将待测样品在筛网筛下至 ≤ 250 微米的颗粒颗粒。

挥发总固含量: 39.09%;

有机碳含量: 0.54%;

总干物质含量: 39.67%;

1.4 试验步骤

将待测样品置于 $52\text{C} \pm 2\text{C}$ 厌氧且无氧条件下进行培养。

1.5 器具和器

气态水分析仪: 210103060024; 生物反应器: 202103060118; 电子天平: 201631A00004; 电子天平: 210103060112;

通氮泵: 2101030601000A; 真空泵: 210103060102; 高速旋转研磨仪: 202103060101; 无气检测系统: 210103060103;

酸度计: 210103060100B;

1.6 试验方法

详细装置及操作台见图(附录A)。主要检测仪器(FC)和主要试剂名称(TS)详细列表见附录如下:

附录见有关标准,本标准中的检测数据以有效数字修约为准。

第 4 页 共 7 页

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互联网: www.spc.org.cn

空白对照组: 0.0g 蔗糖粉

空白对照组: 5.0g 蔗糖粉+7.0g 空白琼脂

空白对照组: 5.0g 蔗糖粉+7.0g 空白琼脂

以上各试验组中的容器于接种前及接种后均在 3min 内 65℃ 进行灭菌处理, 且接种后均在 25℃ 培养 7d。接种后培养箱内相对湿度为 100%。接种后每隔 24h 记录培养量 (g) 及 pH 值, 接种后每隔 24h 记录 200 × 200 倍镜下 10 视野中细菌的 CFU/ml 培养量, 试验前于接种前对菌液进行无菌检测。

4. 试验结果

试验期间温度保持恒定在 25±0.5℃, 相对湿度保持恒定在 100%。每天记录 pH 值及培养量 (g) 的培养量在 7d 内。试验结束时培养量平均为 11.70%。试验期间细菌培养量在 10⁷ CFU/ml 以下, 试验结束时细菌培养量在 10⁷ CFU/ml 以下, 试验期间细菌培养量在 10⁷ CFU/ml 以下, 试验结束时细菌培养量在 10⁷ CFU/ml 以下, 试验期间细菌培养量在 10⁷ CFU/ml 以下, 试验结束时细菌培养量在 10⁷ CFU/ml 以下。

5. 试验结论

在本试验条件下, 90d 蔗糖粉在琼脂上的分解率为 11.70%。

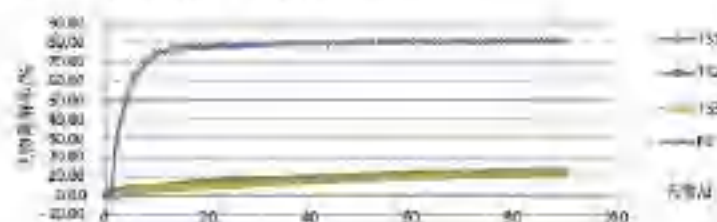


图 1 蔗糖分解率曲线

表 1 消化容器质量记录表

| 组别 | 容器 | 试验前质量 (g) | 试验后质量 (g) |
|-------|-----|-----------|-----------|
| 空白对照组 | W1 | 1063.56 | 1067.00 |
| | W2 | 1057.34 | 1061.31 |
| | W3 | 1119.01 | 1128.34 |
| 空白对照组 | T1 | 1060.66 | 1048.28 |
| | T2 | 1047.12 | 1035.00 |
| | T3 | 1075.93 | 1064.25 |
| 空白对照组 | PC1 | 1047.12 | 1036.00 |
| | PC2 | 1026.11 | 1027.25 |
| | PC3 | 1047.30 | 1037.44 |

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地址M（宁高）：宁高县人民路 180 号



TEST REPORT

Report No.: SHX23070459-03E

Date: 2023-08-03

Page 1 of 2

Applicant : Geyu New Materials Technology (Shandong) Co., Ltd

Address : No. 802, Unit D, Building 006, Huihuang International Harbor City, Shijiu Street, Donggang District,
Rizhao, Shandong Province

Sample Information

Sample Name : ABT lunch box

Sample Type/Specification : /

Sample Qty. : 1

Sample acquisition method : Sent by client

Sample description : Solid

Above information and sample(s) was/were submitted and certified by/on behalf of the applicant. ICAS was not responsible for the authenticity of the sample, and quoted the information with no responsibility as to the accuracy, adequacy and/or completeness.

Sample No. : X23070459-03

Date of Sample Received : 2023-07-11

Sample Test Period : 2023-07-11-2023-08-03

Test content:

Test Address : 155 Pingbei Rd, Minhang District, Shanghai

Test Items : Please refer to next page(s).

Test Methods : Please refer to next page(s).

Test Results : Please refer to next page(s).



ICAS TESTING TECHNOLOGY SERVICE (SHANGHAI) Co., LTD

Prepared

by:

陈浩

(Hao Chen)

Reviewed

by:

祝正阳 赵斌斌

(Zhengyang Zhu/Wenbin Zhao)

Approved

by:

王瑞

(Authorized
signatory: Rachel Wang)



TEST REPORT

Report No.: SHX23070459-03E

Date: 2023-08-03

Page2 of 2

Test Results:

1. Benzo (a) pyrene

| Test Items | Methods | Unit | Detection limit (s) | Results |
|------------------|---------------------|-------|---------------------|---------|
| Benzo (a) pyrene | APPS GS 2019:01 PAK | mg/kg | 0.2 | N.D. |

Note: N.D.=Not detected (<Detection limit(s))

2. Test For F.D.A. Regulation On Polypropylene¹

| Test items | Test Method | Unit | Requirement | Test Results | Single judgment |
|--|--|-------------------|---------------|--------------|-----------------|
| (A) Density ² | As per the U.S. 21 CFR Food And Drug Administration part 177.1520 clauses (c)(1.1a and 1.1b) and (d) . | g/cm ³ | 0.880 - 0.913 | 0.896 | PASS |
| (B) Maximum extractable fraction in n-hexane, (w/w) ³ | | % | 6.4 | 0.81 | PASS |
| (C) Maximum extractable fraction in xylene, (w/w) ³ | | % | 9.8 | 4.40 | PASS |

Remark:

g/cm³ = gram(s) per cubic centimeter

U. S. = United States

% = weight by weight percentage

Sample Photo(s)



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End of the report

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Note: * in the report indicates that it is not included in the scope of CMA5. "上" indicates that it is not included in the CMA5 scope of ICAS.

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* * added the label from designated certification

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检测中心(上海)检测技术有限公司

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CMA5 113123

ICAS 检测认证中心 ICAS Testing Center
 地址: 上海浦东新区川沙路 2200 号
 220011 上海浦东新区川沙路 2200 号
 155 Penghu Ave. (250 Penghu Rd), Aikang Road, Shanghai 201210, China (Add: 155 Penghu Ave.)

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 155 Penghu Ave. (250 Penghu Rd), Aikang Road, Shanghai 201210, China (Add: 155 Penghu Ave.)

Test Report

No.: CAHEC2221376501

Date: 18 Oct 2022

Page 1 of 4

Client Name: DEYU XINGJIUJIAO KEJI (JIANGSU) YOUXIAN GONGSI

Client Address: NO.196 HONGXI ROAD, WUJIN DISTRICT, CHANGZHOU CITY, JIANGSU PROVINCE

Sample Name: PP degradation (added)

Material No.: T305N48T

The above sample(s) and information were provided by the client

SGS Job No.: CP22-054674 - 02

Date of Sample Received: 08 Oct 2022

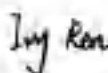
Testing Period: 08 Oct 2022 - 18 Oct 2022

Test Requested: Selected test(s) as requested by the client

Test Method(s): Please refer to next page(s)

Test Result(s): Please refer to next page(s)

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



Ivy Ren
Approved Signature



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Tel: +86 519 8333 3333 Fax: +86 519 8333 3333
E-mail: info@sgs-cstc.com.cn Website: www.sgs-cstc.com.cn

Test Report

No.: CANEG2221216501

Date: 18 Oct 2022

Page 1 of 1

Test Result(s)

Test Method Description

| Specimen No. | SGS Sample ID | Description | Material (claimed by the client) |
|--------------|-----------------|-----------------------------------|-------------------------------------|
| 01) | CA222-213753101 | White polypropylene plastic sheet | PP |

Remarks

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

Residual Chemicals

Test Method: GB 51801.30-2015

| Test Result | CAS No. | Unit | RI | RI |
|------------------------------------|---------------------------|-------|------|----|
| Dioctyl Phthalate (DOP) | 85-74-2 | mg/kg | 0.00 | ND |
| Bis(2-ethylhexyl) phthalate (DEHP) | 117-81-2 | mg/kg | 0.00 | ND |
| Dibutyltinyl Phthalate (DBP) | 85-08-7 | mg/kg | 0.01 | ND |
| Di-n-octyl phthalate (DOP) | 117-84-0 | mg/kg | 0.00 | ND |
| Dibutyltin Phthalate (DBP) | 24993-13-0 | mg/kg | 0.01 | ND |
| Dioctyl Phthalate (DOP) | 25761-80-0 (8515-46-1) | mg/kg | 0.01 | ND |

Note: RI = Report Limit

Solvent Residues

Test method: VWA reference to CEN EN 15594-2008 - analysis was performed by HSC-110

| Test Result | Unit | CAS No. | Unit | RI | RI |
|----------------------|-------|---------|-------------------|------|------|
| MTBE Solvent residue | <0.01 | - | mg/m ³ | 0.01 | ND |
| Solvent residues | <0.01 | - | mg/m ³ | 0.01 | 0.03 |
| Ethanol | - | 64-17-5 | mg/m ³ | 0.01 | ND |
| Isopropanol alcohol | - | 67-63-0 | mg/m ³ | 0.01 | ND |
| Acetone | - | 67-66-1 | mg/m ³ | 0.01 | 0.03 |
| 2-Butanone | - | 78-35-3 | mg/m ³ | 0.01 | ND |



Client's reference and/or sampling file number is used to identify the sample. The Client is responsible for providing the correct information. The Client is also responsible for providing the correct information to the laboratory. The Client is also responsible for providing the correct information to the laboratory. The Client is also responsible for providing the correct information to the laboratory.

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 Tel: (905) 889-9888 Fax: (905) 889-9889
 Email: info@sgs.com Website: www.sgs.com

TEST REPORT

No. : G2MR220903120901

Date : Oct 14, 2022

Page : 1 of 10



CUSTOMER NAME: GREEN PACKAGING (ECHNOLOGY) JIANGSU CO.LTD.
ADDRESS: NO.199 HONGXU ROAD WULIN DISTRICT CHANGZHOU CITY,JIANGSU PROVINCE

Sample Name: PP-DEGRADATION PARTICLES
Material No: 13826481

All test information and sample(s) has/were submitted and confirmed by the client. SGS, however, assumes no responsibility to verify the accuracy, adequacy and completeness of the sample information provided by client.

SGS Ref. No: CP22-054092

Date of receipt: Sep 30, 2022

Testing Start Date: Sep 30, 2022

Testing End Date: Oct 14, 2022

Test result(s): For further details, please refer to the following page(s)
 (Unless otherwise stated the results shown in this test report refer only to the sample(s) tested)

Signed for
 SGS-CSTC Standards Technical
 Services Co., Ltd. Guangzhou Branch

Kelly Lee
 Authorized signatory



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TEST REPORT

No. : QZWR220903120561

Date : Oct 14, 2022

Page : 2 of 16

Summary of Results:

| No | Test Item | Test Method | Result | Conclusion |
|----|-----------------------------------|--|------------|------------|
| 1 | Glass Transition Temperature (Tg) | GB/T 19466.2-2004 | See result | ✓ |
| 2 | Vicat Softening Temperature | GB/T 1933-2000 Method B06 | 69.0°C | ✓ |
| 3 | Deflection Temperature under Load | GB/T 1634.1-2019 & GB/T 1634.2-2019 Method A | 591 | ✓ |
| 4 | Thermogravimetry Analysis | ISO 11358-1:2022 | See result | ✓ |

Note: Pass: Meet the requirements;
 Fail: Does not meet the requirements;
 /: Not Apply to the judgment

Original Sample Photo:



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 Tel: +86 (0)21 5032 1000
 Fax: +86 (0)21 5032 1001
 Email: china@sgstesting.com

TEST REPORT

No. : QZMR220903120001

Date : Oct 14, 2022

Page : 3 of 10

Test Item: Glass Transition Temperature (T_g)

Sample Description: Plastic particles

Test Method: GB/T 10489.2-2004. Analysis was performed by DSC

Test Condition:

Type of sample container: Al

Purge gas flow rate (Nitrogen: 99.999%): 50ml/min

Equilibrate at: -85°C

Ramp: 20°C/min to 200°C; Isothermal for 5min

Quench cool to: -85°C; Isothermal for 15min

Repeat ramp: 20°C/min to 200°C

Test Result

| Test Item | First heating scan (DSC curve see Fig 1) | Second heating scan (DSC curve see Fig 2) |
|---|---|--|
| Extrapolated onset temperature T _{g,o} | The glass transition temperature was not found in the temperature range of -85~200°C. | |
| Midpoint temperature T _{g,m} | | |
| Extrapolated end temperature T _{g,e} | | |



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TEST REPORT

No. : GZMR220903120901

Date : Oct 14, 2022

Page: 4 of 10

2. Test Item: Vicat Softening Temperature

Sample Description: Plastic particle

Test Method: GB/T 1825-2000 Method B50

Test Condition:

Specimen thickness: 4.07 mm

Heat transfer media: Silicone oil

Rate of temperature: 50 C/h

Load: 50N

Lab Environmental Condition: (23±2)°C; (50±5)%RH

Test Result:

| Test Item | Test Result |
|-----------------------------|-------------|
| Vicat Softening Temperature | 93.0°C |

Note: Test specimens were cut from the injection molded sample.

Test Photo:



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TEST REPORT

No. : QZMR220903120101

Date: Oct 14, 2022

Page: 7 of 10



Equipment Information:

| Equipment | Model | Equipment No. | Calibration date | Next Calibration Date |
|----------------------|-------------|---------------|------------------|-----------------------|
| HDT and VICAT Tester | FW 6911.000 | QZMR-PL-E000 | 2022-05-24 | 2023-05-23 |

3. Test Item: Deformation Temperature under Load

Sample Description: Plastic particle

Test Method: GB/T 1834.1-2019 & GB/T 1834.2-2019 Method A

Test Condition:

Specimen: 50mm \times 0.03mm \times 4.05mm

Heat transfer media: Silicone oil

1/1 &

Rate of temperature: 120°C/min

Span: 54mm

Lab Environmental Condition: (23 \pm 2)°C; (50 \pm 5)NRH



Small text block containing legal disclaimers and contact information for SGS, including the company name, address, and phone numbers.

TEST REPORT

No. : GZMFC220503120901

Date : Oct 14, 2022

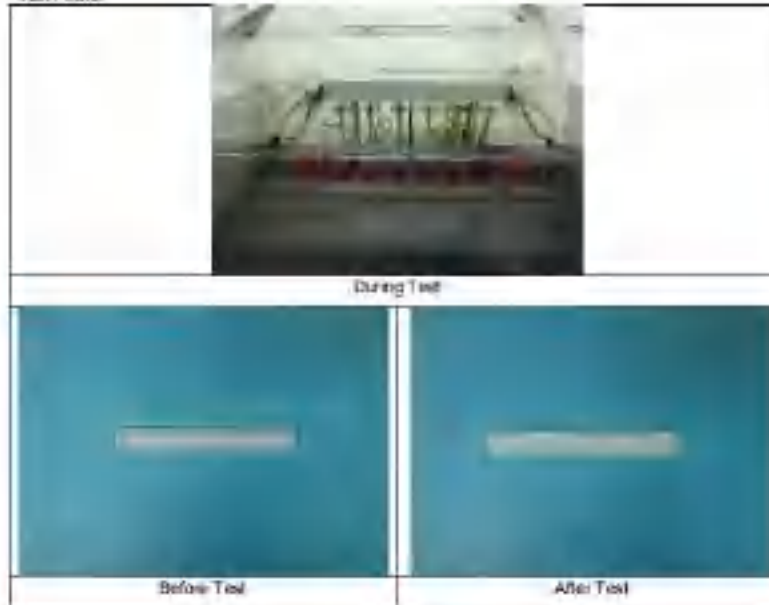
Page: 8 of 10

Test Result

| Test Item | Test Result |
|-----------------------------------|-------------|
| Deflection Temperature under Load | -50°C |

Note: Test specimens with injection mold

Test Photo



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TEST REPORT

No. : GZMR22090312001

Date : Oct 14, 2022

Page: 9 of 10

Equipment Information

| Equipment | Model | Equipment No. | Calibration date | Next Calibration date |
|----------------------|---------|---------------|------------------|-----------------------|
| HDT and VICAT Tester | WFD 002 | GZMR-PL-0001 | 2022-01-11 | 2023-01-10 |

1. Test Item: Thermogravimetric Analysis

Sample Description: Plastic granules

Test Method: ISO 11358-1:2022, analysis was performed by TGA.

Test Condition:

Material of specimen holder: Platinum pan

Balance purging gas flow rate (Nitrogen): 10ml/min

Sample purging gas flow rate (Nitrogen): 20ml/min

Equilibrate at 40°C

Ramp: 10°C/min to 200°C

Test Result

| Test Item | Test Result (TGA curve see Fig. 1) |
|--|------------------------------------|
| The starting point of temperature (Ts) | 443.75°C |
| The mid-point of temperature (Tm) | 454.25°C |
| The end point of temperature (Te) | 458.75°C |
| The loss in mass (M ₁) | 18.8% |
| The residue in mass (R) | 1.2% |



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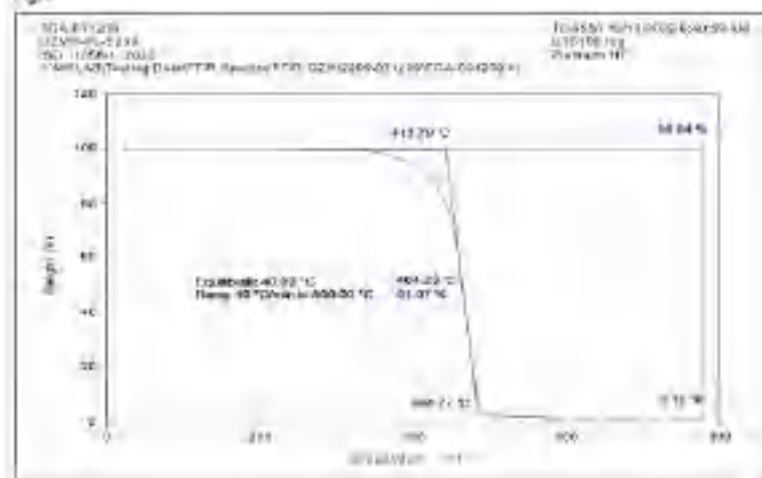
TEST REPORT

No. : GZMR22090312001

Date : Oct 14, 2022

Page: 10 of 30

Fig. 1



Equipment Information:

| Equipment | Model | Equipment No. | Calibration date | Next Calibration date |
|-----------|---------|---------------|------------------|-----------------------|
| TGA | TA Q550 | GZMR-PL-E259 | 2021-08-12 | 2023-08-11 |

Appendix Information: In the territory of the People's Republic of China, this test report without CMAA logo expresses the test report shall only be used for client's scientific research, teaching, internal quality control, product research and development, etc. and just for client's internal reference.

***** End of report*****



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检测报告

编号 : GZMR220903120901_CN
 日期 : 2022-10-14
 页码 : 1 of 18



客户名称 : 德威新材料科技(江苏)有限公司
 客户地址 : 江苏省常州市武进区虹霞路 199 号一号楼

样品名称 : PP 降解粒子
 料号 : T305648T

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SGS 参考号 : CP22454892
 委托日期 : 2022-09-30
 测试开始时间 : 2022-09-30
 测试完成时间 : 2022-10-14
 测试结果 : 请见下页 (除另有特别说明外, 本报告结果仅对测试样品负责)

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 授权签名

李叶红

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检测报告

编号 : 02MR220203120901_CN

日期 : 2022-10-14

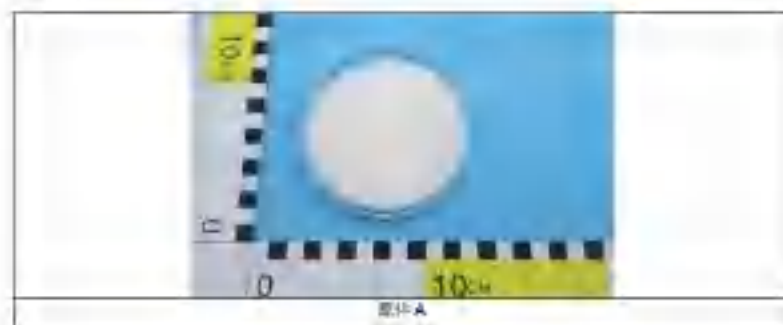
页码 : 2 of 10

检测项目

| 序号 | 测试项目 | 测试方法 | 结果 | 结论 |
|----|---------------------------|---|--------|----|
| 1 | 玻璃化转变温度 (T _g) | GB/T 18403.2-2004 | 17.9℃ | ✓ |
| 2 | 冲击强度 | GB/T 1843-2000 方法 B50 | 93 J/m | ✓ |
| 3 | 热变形温度 | GB/T 1534.1-2019 及 GB/T 1534.2-2019 方法 A | 99.0 | ✓ |
| 4 | 透光率 | ISO 11358-1:2002 | 17.9% | ✓ |

备注: 合格: 符合要求
 不合格: 未达到要求
 /: 未检测到

检测照片



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检测报告

编号 : GZMR220403120901_CN

日期 : 2022-10-14

页码 : 3 of 10

1. 测试项目: 宽温比例收缩率(T₁₀)

样品描述: 塑料和料

测试方法: GB/T 19466.2-2004, 分析仪器为 DSC.

测试条件:

样品厚度规格: 40.

吹扫气体/吹扫流量: 99.999%/ 50ml/min.

平衡在-85℃.

以 20℃/min 升温到 200℃, 保持温度 5min.

升温速率 20-80℃, 保持温度 10min.

以 20℃/min 再次升温到 200℃.

测试结果:

| 测试项目 | 第一次升温扫描 (DSC 曲线见图 1) | 第二次升温扫描 (DSC 曲线见图 2) |
|------------------------|---------------------------|-------------------------|
| 外推起始温度 T ₁₀ | 在-65~200℃ 温度范围内未检测到比例收缩现象 | |
| 中点温度 T ₅₀ | | |
| 外推终止温度 T ₉₀ | | |



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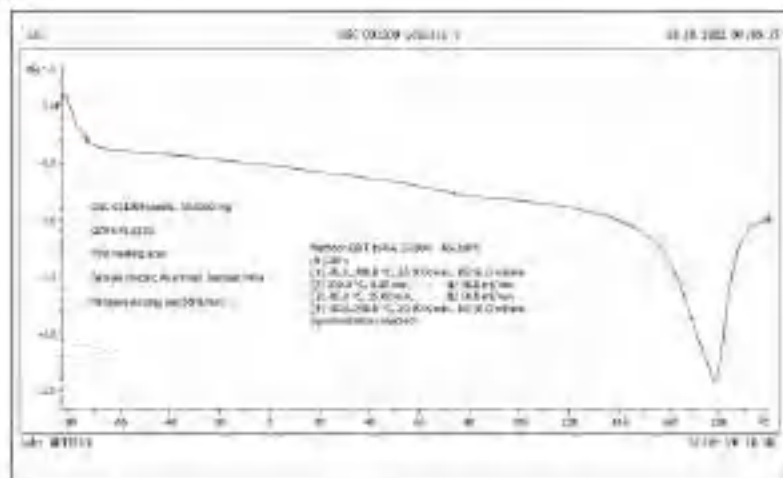
检测报告

编号 : GZMR220903126901_CN

日期 : 2022-10-14

页码 : 4 of 10

图 1



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检测报告

编号 : 02NR022000120901_CN

日期 : 2022-10-14

页码 : 8 of 10

2.测试项目: 热卡转化温度

样品描述: 塑料粉料

测试方法: GB/T 1633-2000 方法 B50

测试条件:

试样厚度: 4.07mm

化热介质: 空气

升温速率: 50°C/m

负荷: 50N

实验室环境条件: (23±2)°C; (50±5)%RH

测试结果:

| 测试项目 | 测试结果 |
|--------|---------|
| 热卡转化温度 | 205.9°C |

备注: 测试试样从注塑成型后的样品中截取。

测试照片:



测试中



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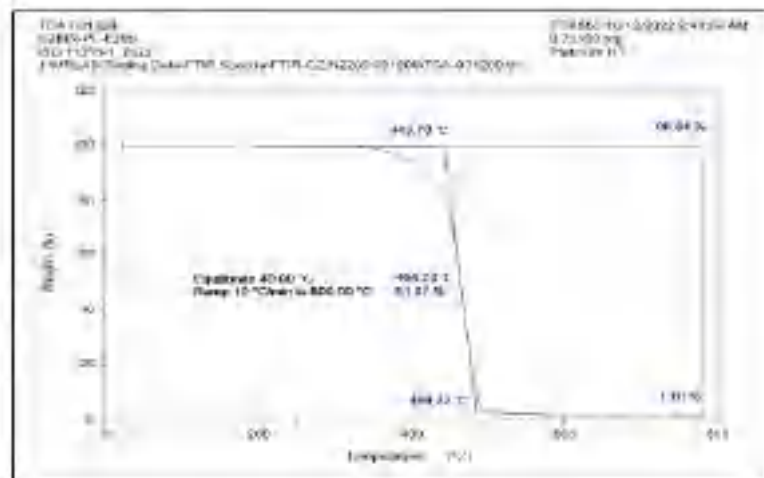
检测报告

编号 : GZMR220903120901_CN

日期 : 2022-10-14

页码 : 10 of 10

图1



设备信息:

| 设备 | 型号 | 设备编号 | 校核日期 | 下次校核日期 |
|-------|---------|------------------|------------|------------|
| 热重分析仪 | TA Q500 | GZMR-PL- E299 | 2021-08-12 | 2023-08-11 |

测试信息:

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检测报告

报告编号: CANEC221097702

日期: 2022年10月12日 第2页 共7页

检测站:

检测样品信息

样品编号: 000样品ID: 描述:
 001 CAN22-210977-001 白色塑料颗粒

备注:

- (1) 1 mg/kg = 0.0001%
- (2) MDL = 方法检测限
- (3) ND = 未检出 (< MDL)
- (4) * = 未确定

欧盟委员会指令2002/32/EC及其附件修正指令-重金属、镉、汞、铜和六价铬的含量

检测方法: 参考EN12457-2和EN12457-3, 使用ICP-OES & IAA-MSC进行。

| 检测项目 | 结果 | 单位 | MDL | 备注 |
|--------------------|----|-------|-----|----|
| 铜 (Cu) | - | mg/kg | 5 | ND |
| 镉 (Cd) | - | mg/kg | 5 | ND |
| 六价铬 (CrVI) | - | mg/kg | 5 | ND |
| 汞 (Hg) | - | mg/kg | 5 | ND |
| 总铜 (Pb+Cu+CrVI+Hg) | ND | mg/kg | - | ND |
| 备注 | | | | 符合 |

元素分析

检测方法: 参考EN12457-2和EN12457-3, 使用ICP-OES进行。

| 检测项目 | 结果 | MDL | 备注 |
|--------|-------|-----|----|
| 铜 (Cu) | mg/kg | 5 | ND |
| 镉 (Cd) | mg/kg | 5 | ND |
| 铅 (Pb) | mg/kg | 2 | ND |
| 汞 (Hg) | mg/kg | 2 | ND |
| 铬 (Cr) | mg/kg | 2 | ND |
| 钼 (Mo) | mg/kg | 5 | ND |
| 钨 (W) | mg/kg | 10 | ND |
| 铋 (Bi) | mg/kg | 5 | ND |
| 铟 (In) | mg/kg | 10 | ND |



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附件

Pb/Cd/Hg/Cr⁶⁺ 检测流程图

(注: 检测样品为送检材料安全数据单(ASD)的印刷品)



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附件

元素检测流程图



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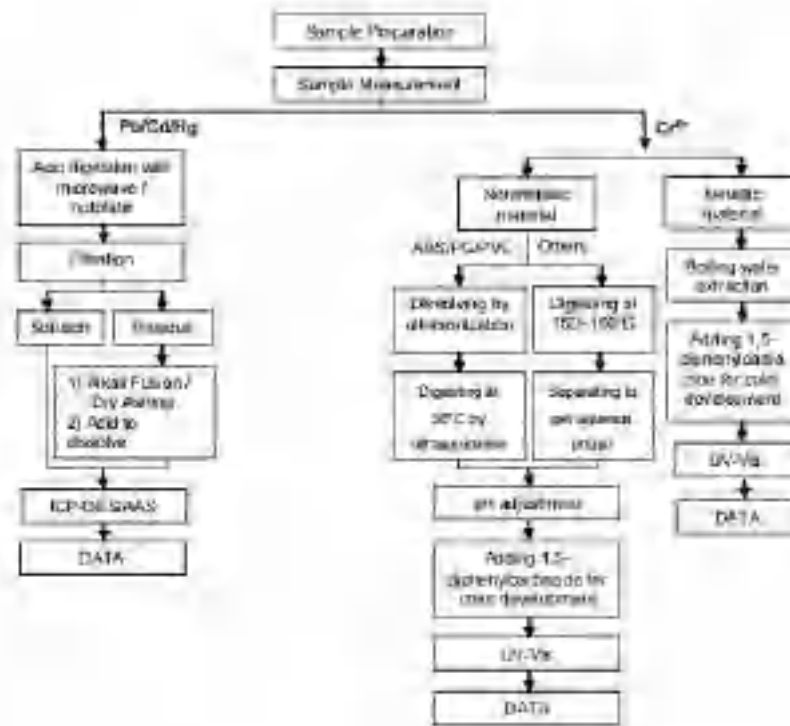
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ATTACHMENTS

Pb/Cd/Hg/Cr⁶⁺ Testing Flow Chart

1) These samples were analysed totally by wet-oxidation method according to below flow chart (IC⁺ last method included).

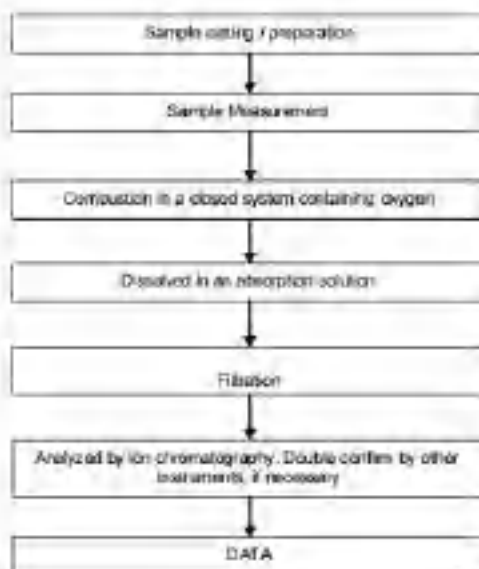


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ATTACHMENTS

Halogen Testing Flow Chart



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