

TEST REPORT

No. : GZMR230701987001-2

Date : Jan 26, 2024

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CUSTOMER NAME: DONGGUAN XUCAI ARTS & CRAFTS CO.,LTD
ADDRESS: NO.21TH,NINGXIN SOUTH ROAD, DANING VILLAGE, HUMEN TOWN,DONGGUAN

Sample Name : All Water Degradable Series Glitter
Manufacturer : DONGGUAN XUCAI ARTS & CRAFTS CO.,LTD

Above information and sample(s) was/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. : GZIN2307002212PL01
Date of Receipt : Jul 14, 2023
Testing Start Date : Jul 14, 2023
Testing End Date : Oct 13, 2023
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

Cathy Peng
Authorized signatory



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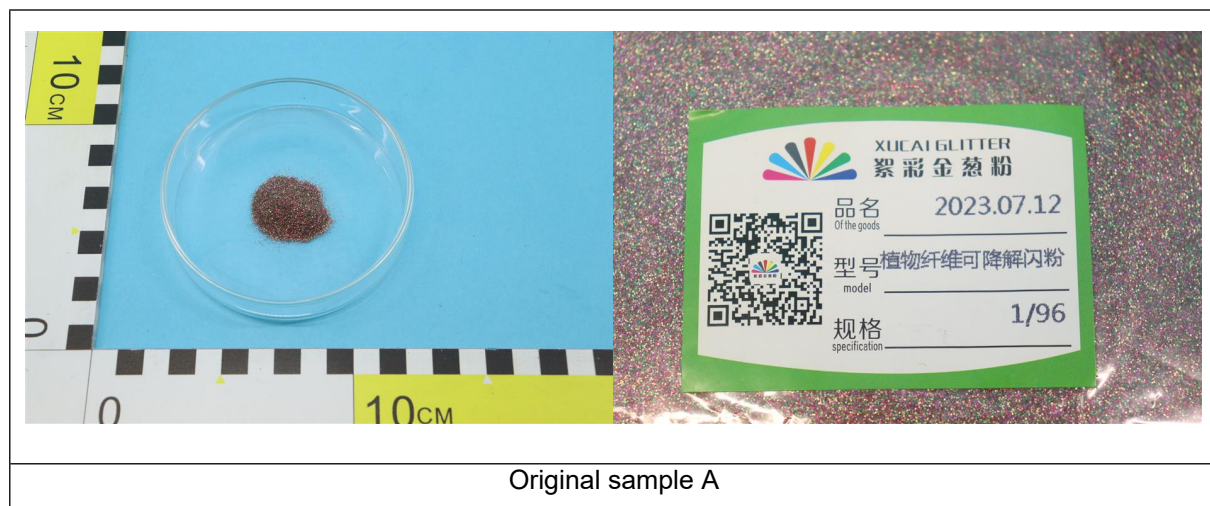
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Summary of Results:

No.	Test Item	Test Method	Result	Conclusion
1	Ready Biodegradability (CO ₂ Evolution Test)	Appendix 15 in Commission Regulation (EU) 2023/2055 of 25 September 2023 amending Annex XVII Entry 78 of REACH Regulation (EC) No 1907/2006 & OECD 301:1992 Method 301B	See result	Pass

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

Original Sample Photo:



Original sample A



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Test Item: Ready Biodegradability (CO₂ evolution test)

Sample Description: Powder

Test Method: Appendix 15 in Commission Regulation (EU) 2023/2055 of 25 September 2023 amending Annex XVII Entry 78 of REACH Regulation (EC) No 1907/2006 & OECD 301:1992 Method 301B

Test Condition:

Test temperature: (22±2)°C

Vessel volume: 2L

Numbers of vessels:

2 vessels for blank

2 vessels for test material

1 vessel for procedure control

1 vessel for toxicity control

Source of inoculum: Self made

Reference material: Sodium benzoate

Test period: 60 days

Test period: 2023-08-11~2023-10-11

Test Result:

Test Item	Percentage of biodegradation (See note 1)	Client's requirement	Conclusion
Ready Biodegradability (CO ₂ evolution test)	74.3%	Percentage of biodegradation ≥60%	Pass



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Validity criteria:	Result	Determine
The IC content of the test substance suspension at the beginning of the test must be less than 5% of the TC	#1: <1.2% #2: <1.2%	Test is valid
The total CO ₂ evolution in the inoculum blank at the end of the test should not exceed 40 mg/l	20.59mg/L	
The biodegradation rate of the procedure control was not less than 60% within 14 days	82.9%	
The biodegradation rate of the toxicity control was more than 25% within 14 days	58.5%	
The difference between the percentage of biodegradation of the test material in the different vessels is less than 20% at the plateau, at the end of the test or at the end of the 10-d window	3.1%	

Original data:

Table 1 Composition of the test solution

Test vessel	Blank	Test material	Procedure control	Toxicity control
	#1、#2、A	#1、#2		
Inoculum (mL)	25	25	25	25
Test material (g)	—	#1: 0.0724 #2: 0.0700	—	0.0722
Reference material solution (mL)	—	—	50	50
TOC content from the test material (mg)	—	#1: 31.94 #2: 30.88	—	31.85
TOC content from the reference material (mg)	—	—	31.61	31.61

Note: Flask A for the determination of IC content (total inorganic carbon) and TC (total carbon) at the start of the test.



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Table 2 Amount of CO₂ produced (mg)

Time(d)	Blank			Test material		Procedure control	Toxicity control
	#1	#2	Mean	#1	#2		
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	6.39	6.34	6.37	6.93	7.37	60.19	61.66
6	5.53	6.27	5.90	9.70	9.81	36.23	35.11
10	5.68	6.00	5.84	17.69	18.42	14.84	32.51
14	5.64	5.92	5.78	18.43	16.44	8.69	30.67
19	5.59	5.58	5.59	16.10	16.89	7.72	33.86
24	5.90	5.53	5.71	13.10	14.91	8.52	16.72
28	5.77	6.22	6.00	14.32	13.91	7.59	12.93
35	5.42	6.21	5.81	11.19	11.51	6.40	9.05
42	5.17	4.33	4.75	13.51	12.23	8.48	12.32
47	6.33	7.14	6.74	13.12	11.99	9.00	12.19
52	4.98	4.57	4.78	7.97	8.01	6.08	7.28
60	6.39	6.14	6.27	12.61	13.86	8.98	11.33



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Table 3 Percentage of biodegradation (%)

Time (d)	Test material				Procedure control	Toxicity control
	#1	#2	Mean	Difference		
0	0	0	0	0	0	0
3	0.5	0.9	0.7	—	46.4	23.8
6	3.7	4.3	4.0	—	72.6	36.3
10	13.9	15.5	14.7	—	80.4	47.8
14	24.7	24.9	24.8	—	82.9	58.5
19	33.6	34.9	34.2	—	84.7	70.6
24	39.9	43.0	41.5	—	87.2	75.4
28	47.1	50.0	48.5	—	88.5	78.3
35	51.6	55.0	53.3	—	89.0	79.7
42	59.1	61.6	60.4	—	92.3	83.0
47	64.6	66.3	65.4	—	94.2	85.3
52	67.3	69.1	68.2	—	95.3	86.4
60	72.7	75.8	74.3	3.1	97.7	88.6



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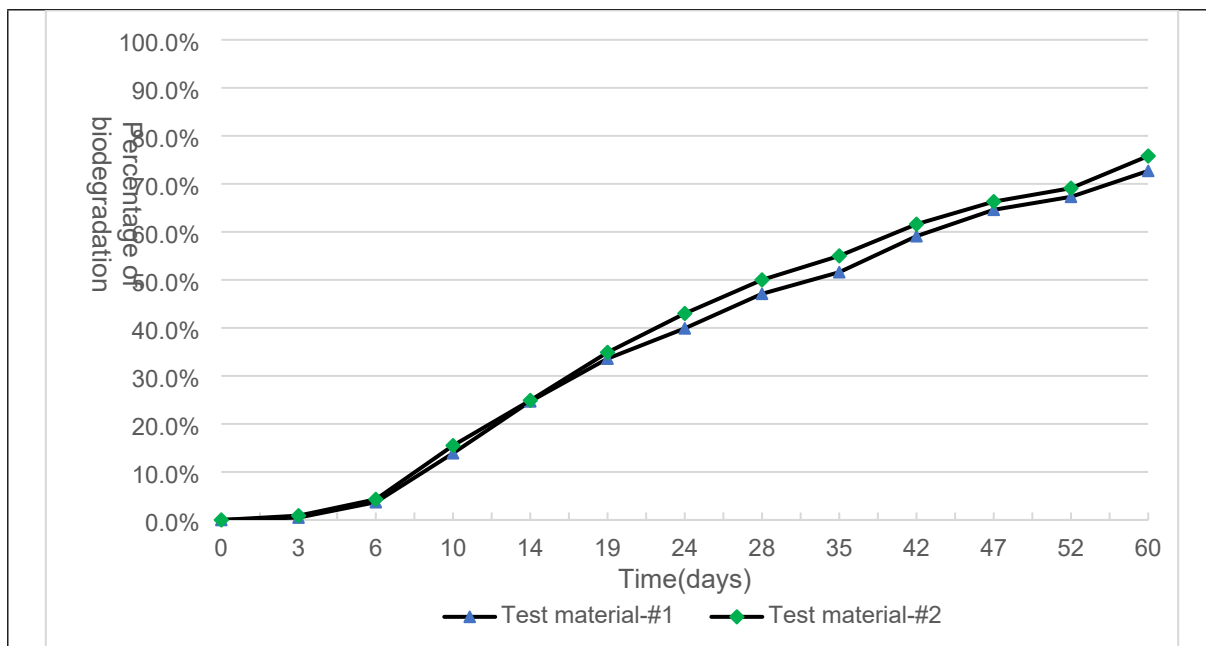
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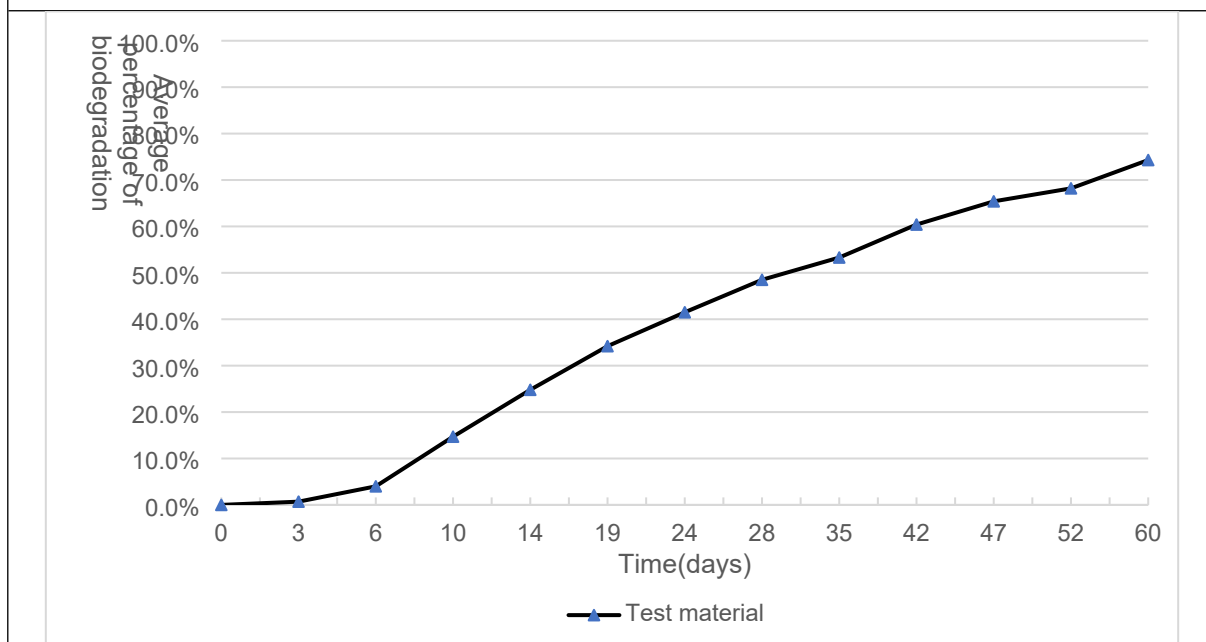
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Test material percentage of biodegradation-time curve



Test material average percentage of biodegradation-time curve



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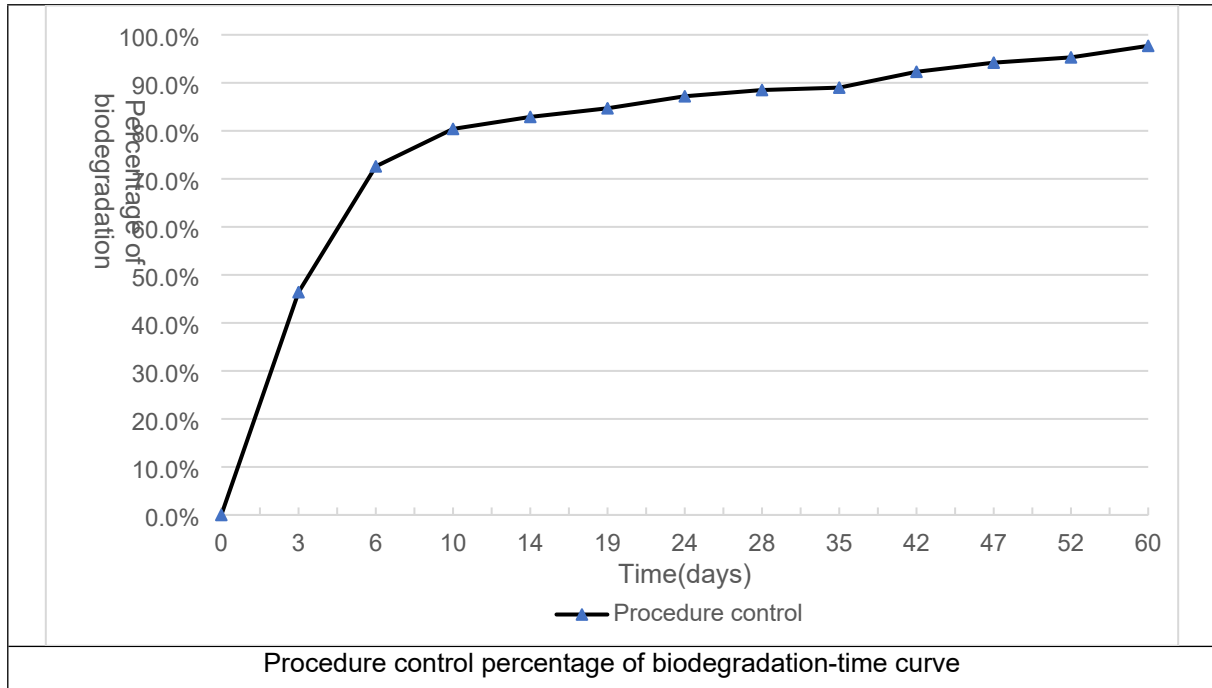
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Note:

1. The percentage of biodegradation is calculated from:

$$\% \text{ biodegradation} = \frac{\text{CO}_2 \text{ production(mg) from test flask} - \text{CO}_2 \text{ production (mg) from blank flask}}{\text{TOC(mg) added in test} \times \frac{44}{12}} \times 100$$

2. The purity of the test substance is calculated as 100%, and the TOC content is 44.11%. The purity of the reference substance is 98.5%, and the TOC content is 58.34%.
3. The inoculum concentration in the test system is 25.9 mg/L, the total bacterial count is 1.8×10^7 CFU/L, and the pH value is within the range of 7.4 ± 0.2 .



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Equipment Information:

Equipment	Model	Equipment No.	Calibration date	Next Calibration date
Chemicals Biodegradability Test System	TG-2000-AT1	GZMR-AG-E318	2023-07-18	2024-07-17
Electron Balance	XPR504S/AC	GZMR-AG-E295	2022-10-19	2023-10-18
Electron Balance	XPR504S/AC	GZMR-AG-E295	2023-09-13	2024-09-12
Electron Balance	HB-A-1000	GZMR-AG-E237-01	2022-09-15	2023-09-14
Electron Balance	HB-A-1000	GZMR-AG-E237-01	2023-08-11	2024-08-10
Electron Balance	XPR204	GZMR-PL-E127-03	2022-09-15	2023-09-14
Electron Balance	XPR204	GZMR-PL-E127-03	2023-08-11	2024-08-10
Oven	UFE600A0E3	GZMR-AG-E120	2023-04-21	2024-04-20
pH Meter	S220-K	GZMR-AG-E040-06	2022-11-14	2023-11-13
Pipettor	L-20MLXLS	GZMR-PL-E276-04	2023-04-19	2024-04-18
Pipettor	1~10ml	GZMR-AG-E175-03	2022-11-30	2023-11-29
Automatic Potentiometric Titrator	ZDJ-5B-G	GZMR-PL-E276	2023-06-21	2024-06-20
Organic element analyzer	Flash SMART	GZMR-PL-E331	2023-05-16	2024-05-15

Appendix information:

1. This test report supersedes test report No. GZMR230701987001 and No. GZMR230701987001-1, the original test report is void.
2. This report updates test method.
3. This report adds conclusion.
4. This report updates sample name.
5. This report updates conclusion.

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



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