

Test Report No.: 326050051a 001

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Client: Sunflower Environmental Protection Technology (Henan) Co., Ltd.
No.01, Intersection of Industrial Avenue and Western 3rd Ring Road,
Advanced Manufacturing Development Zone, Guangshan County, Xinyang
City, Henan Province
llsg@lvluoest.com

Contact Information:

Identification/Model No(s): Paper container

Sample Receiving Date: 2024-08-16

Sample Obtaining Method: Sending by customer

Condition at Delivery: Test item complete and undamaged

Testing Period: 2024-08-22 to 2025-01-16

Place of Testing: Chemical laboratory Shanghai& Kunshan

Test Specification:

With reference to ASTM D6400-23 / EN 13432: 2000 / AS 4736-2006 /
EN 14995:2006 / ISO 17088:2012 / ISO 18606:2013,
Testing according to customer's specification for the following parameters:

Heavy Metals and Other Toxic Substances

Qualitative Identification by Fourier Transform Infrared Spectroscopy

Thickness Check

Mass per Unit Area

Quantitative Aerobic Disintegration Test

Plant Test

Test Result:

Pass

Please refer to page 5-6

Please refer to page 7-8

Please refer to page 9

Pass

Pass

Other Information:

Country of Origin: China

Item No: LV-0178

Manufacturer: Sunflower Environmental Protection Technology (Henan) Co., Ltd.

Distributor: Dongguan Lvluo Environmental Protection Technology Co., Ltd.

For and on behalf of
TÜV Rheinland (Shanghai) Co., Ltd.



2025-02-13 Lucy Lu/Assistant Technical Manager

Date

Name/Position

Sample information is provided by customer. Test result is drawn according to the kind and extent of tests performed.
This test report relates to the above mentioned test sample. Without permission of the test center this test report is not
permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.
"Decision Rule" document announced in our website (<https://www.tuv.com/landingpage/en/qm-gcn/>) describes the state-
ment of conformity and its rule of enforcement for test results are applicable throughout this test report.

Test Report No.: 326050051a 001*Page 2 of 28***Picture and Detailed Description of the Test Sample****M001****Material List:**

Material No.	Material	Color	Location	Remark
M001	Paper	Light brown	Container	-
M001-1	Paper	Light brown	Middle of bottom	-
M001-2	Paper	Light brown	Wall of container	-
M001-3	Paper	Light brown	Rim of container	-
M001-4	Paper	Light brown	Inside	-
M001-5	Paper	Light brown	Backside	-

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1 Heavy Metals and Other Toxic Substances**Test Method:** For Fluorine (F) content, according to EN 15408: 2011.

For other contents, according to ISO 17294-2: 2016.

Test Result:

			Test No.	T001
			Material No.	M001
Test Parameter	Unit	Reporting Limit	Test Result	
Zn	mg/kg	5	26	
Cu	mg/kg	5	<RL	
Ni	mg/kg	5	<RL	
Cd	mg/kg	0.25	<RL	
Pb	mg/kg	5	<RL	
Hg	mg/kg	0.20	<RL	
Cr	mg/kg	5	<RL	
Mo	mg/kg	0.25	<RL	
Se	mg/kg	0.25	<RL	
As	mg/kg	0.25	<RL	
F	mg/kg	50	<RL	
Co	mg/kg	3	<RL	

Abbreviation: mg/kg = Milligram per kilogram

<RL = Less than reporting limit

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Remark:

1. The requirement is following ASTM D6400-23 / EN 13432: 2000 / AS 4736-2006 / EN 14995:2006 / ISO 17088:2012 / ISO 18606:2013.
2. The concentrations of regulated metals and other toxic substances in the plastic product or material refer to below Table 1 for examples.

Table 1 — Examples of maximum concentrations of regulated metals and other toxic substances

Values given in mg/kg of dry material

Element	US ^a	Canada ^b		EN13432 ^c / AS4736 ^d / AS5810 ^d	NF T51-800 ^e	China ^f	Japan ^g
		CCME	Ontario				
Zn	1400	350	250	150	150	150	180
Cu	750	200	50	50	50	50	60
Ni	210	31	31	25	25	25	30
Cd	19.5	1.5	1.5	0.5	0.5	0.5	0.5
Pb	150	75	75	50	50	50	10
Hg	8.5	0.4	0.4	0.5	0.5	0.5	0.2
Cr	—	105	105	50	50	50	50
Mo	—	2.5	2.5	1	1	1	—
Se	50	1	1	0.75	0.75	0.75	—
As	20.5	6.5	6.5	5	5	5	5
F	—	—	—	100	100	100	—
Co	—	17	17	—	38	38	—

^a The maximum metal concentrations given here for the US are 50 % of those prescribed by 40 CFR 503.13, Table 3 (as per ASTM D6400 and ASTM D6868 requirements).

^b The maximum metal concentrations for Canada are 50 % of those prescribed in Table 1 for Compost Category A in Guidelines for Compost Quality published by the Canadian Council of Ministers of the Environment (CCME), and Category AA of the Ontario Compost Quality Standards, published by Ontario Ministry of the Environment (as per ASTM D6400 requirements).

^c The maximum metal concentrations for the EC are 50 % of those prescribed in ecological criteria for the award of the Community eco-label to soil improvers (EC OJ L 219, 7.8.1998, p. 39).

^d The maximum metal concentrations given here for Australia refers to EN 13432, Table A.1.

^e The maximum metal concentrations given here for France refers to EN 13432, Table A.1. except for Co, and the maximum concentration for Co is prescribed in BNQ 9011-911-I/2007.

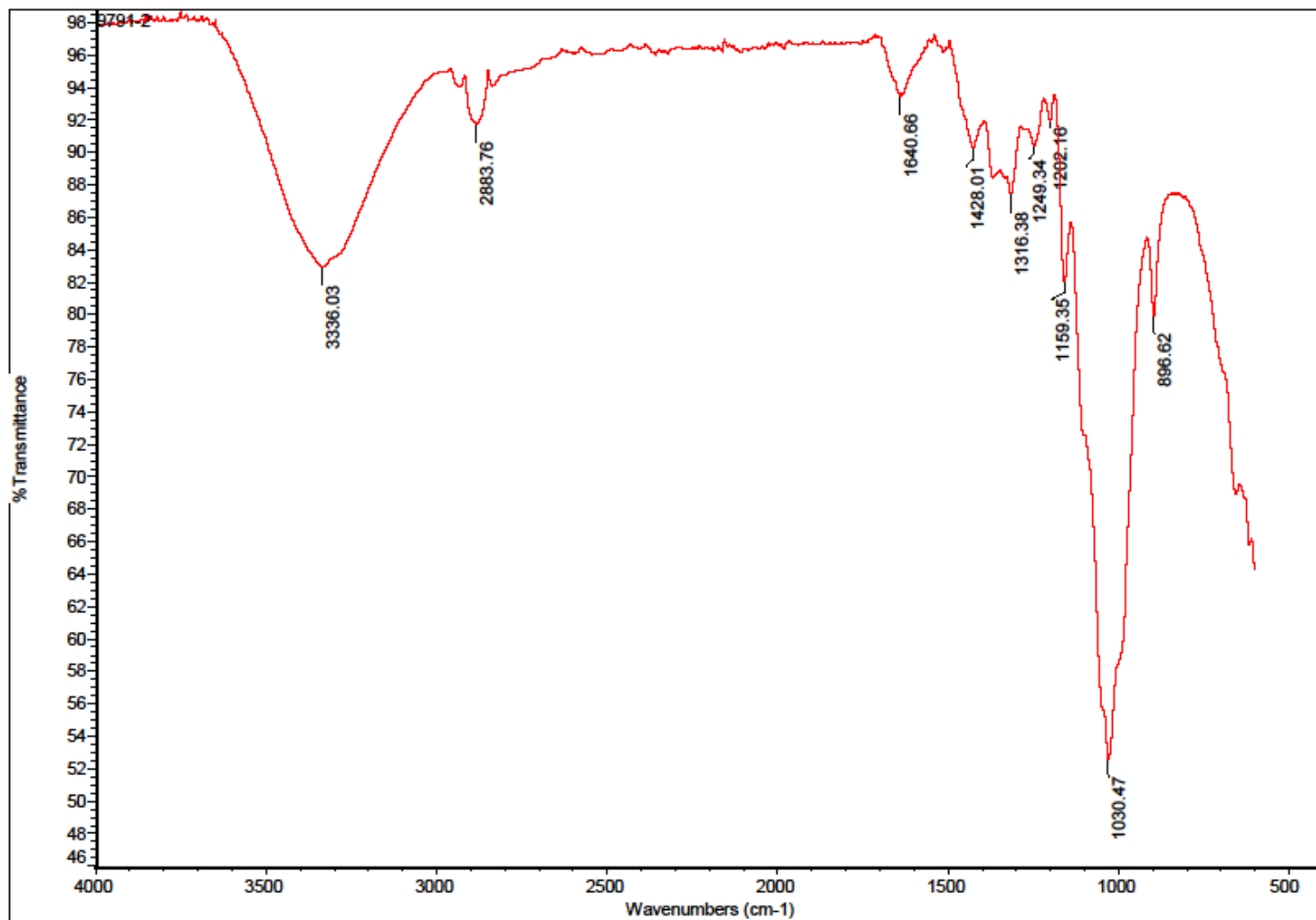
^f The maximum metal and other toxic substances concentrations given here for People's Republic of China refers to GB/T 41010-2021 Degradability and identification requirements of biodegradable plastics and products, Table 1.

^g The maximum metal concentrations for Japan are 10 % of those prescribed in the Fertilizer Control Law (Ministry of Agriculture, Forestry and Fisheries) and Guidelines for Quality of Composts (Central Union of Agricultural Co-operatives).

3. BPI's new standard for fluorinated chemicals went into effect on January 1, 2020. Products may no longer be claimed as BPI Certified, whether on the product itself, or on a product's packaging or marketing materials, unless it meets all conditions of the rule, including no intentionally added fluorinated chemicals (as demonstrated in Safety Data Sheets) and a test report showing less than 100 ppm total fluorine.

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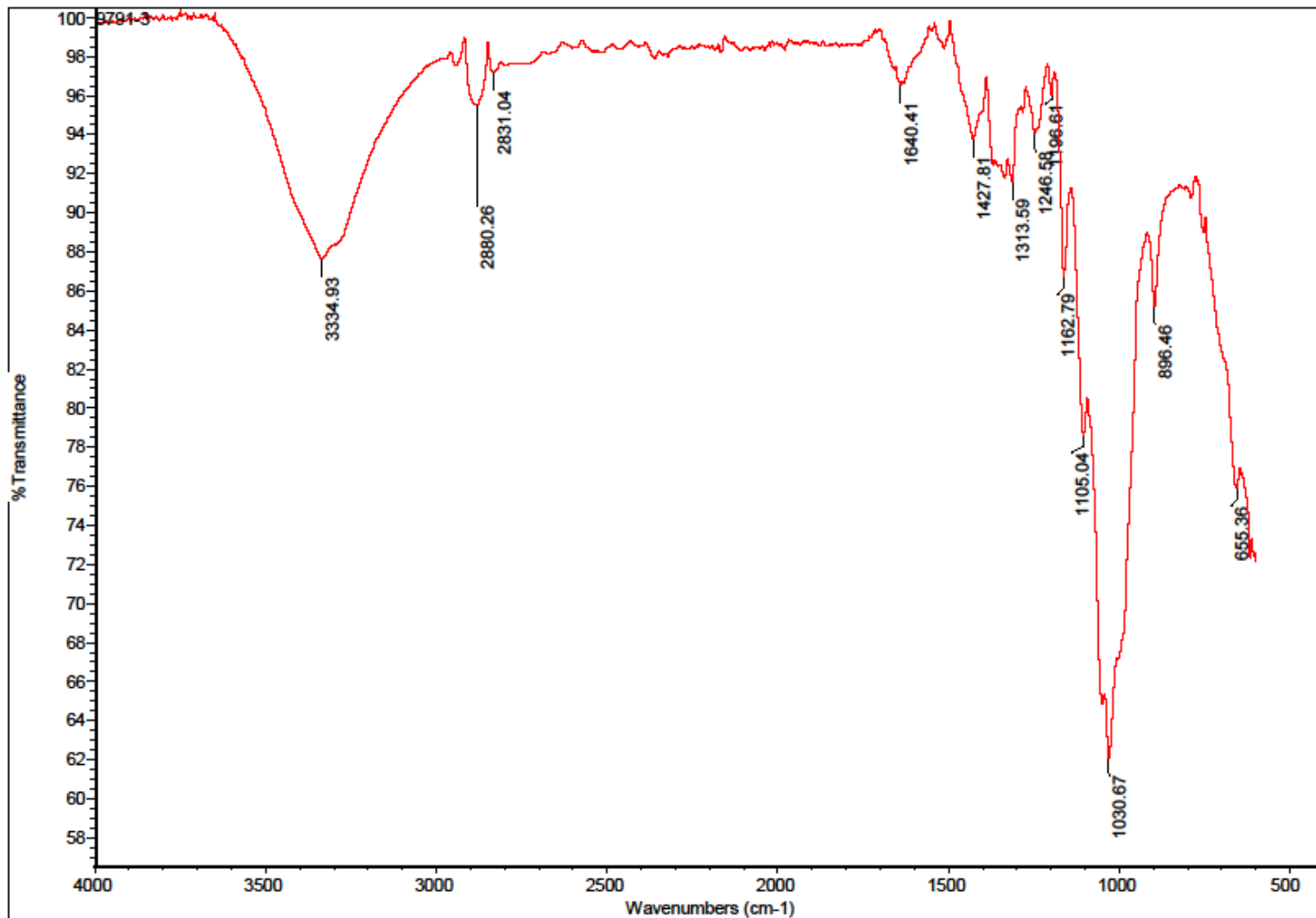
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2 Qualitative Identification by Fourier Transform Infrared Spectroscopy**Test Method:** Determination by Fourier Transform Infrared Spectroscopy ATR mode according to GB/T 6040-2019.**Test Result:****Picture of IR Spectrometry for M001-4**

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Picture of IR Spectrometry for M001-5



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3 Thickness Check

Test Method: In-house method, the thickness of 10 samples have been measured in the same position by micrometer.

Test Result:

		Test No.:	T001	T002
		Material No.:	M001-1	M001-2
Trial	Unit	Test Result		Test Result
1	mm	0.741		0.701
2	mm	0.886		0.739
3	mm	0.789		0.733
4	mm	0.724		0.667
5	mm	0.824		0.695
6	mm	0.825		0.748
7	mm	0.819		0.751
8	mm	0.823		0.713
9	mm	0.807		0.728
10	mm	0.899		0.745
Average	mm	0.814		0.722
SD	mm	0.0546		0.0274

Abbreviation: mm = Millimeter

$$SD = \text{Standard deviation, } S = \sqrt{\frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n-1}}$$

Remark:

Equipment	Equipment Uncertainty	Foot Size	Foot force
Micrometer	0.001mm (k = 2)	Diameter 6.3mm	5.6N

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4 Thickness Check**Test Method:** The thickness of 10 samples have been measured in the same position by caliper.**Test Result:**

Test No.:		T001
Material No.:		M001-3
Trial	Unit	Test Result
1	mm	0.65
2	mm	0.57
3	mm	0.62
4	mm	0.58
5	mm	0.63
6	mm	0.59
7	mm	0.55
8	mm	0.60
9	mm	0.63
10	mm	0.62
Average	mm	0.60
SD	mm	0.0313

Abbreviation: mm = Millimeter

$$SD = \text{Standard deviation, } S = \sqrt{\frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n-1}}$$

Remark:

Equipment	Equipment Uncertainty	Foot Size	Foot force
Caliper	0.01mm (k = 2)	-	-

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5 Mass per Unit Area[#]**Test Method:** ISO 536: 2019, Measured by balance and caliper.**Test Result:**

		Test No.:	T001
		Material No.:	M001
Trial	Unit	Test Result	
1	g/m ²	488	
2	g/m ²	496	
3	g/m ²	482	
4	g/m ²	504	
5	g/m ²	513	
6	g/m ²	473	
7	g/m ²	447	
8	g/m ²	479	
9	g/m ²	516	
10	g/m ²	512	
Average	g/m ²	491	
SD	g/m ²	21.7	

Abbreviation: g/m² = Gram per square meter.

$$\text{SD} = \text{Standard deviation, } S = \sqrt{\frac{\sum_{i=1}^n (x_i - \bar{x})^2}{n-1}}$$

Remark:

Equipment Uncertainty:

Balance: U = 0.0003g (k = 2)

Caliper: U = 0.01mm (k = 2)

[#]The test is not covered by CNAS accreditation and is subcontracted to an external lab which is accredited in accordance with ISO/IEC 17025:2017.

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6 Disintegration

6.1 General Test Information

Test Method: ISO 16929: 2021

Ovens: The ovens used for this test contain of a heating system and a flow-rate adjustable air providing system. The temperature of the compost can be determined at any time. The volume of the composting oven is 70 liters.

O₂-determination: An instrument (CY-C12) is used for determining the concentration of oxygen in the exhaust gas directly.

6.2 Blank Compost

6.2.1 Composition of Blank Compost

The biowaste contains of a mixture of 7.0kg soil (peilei), 1.2kg onions, 1.2kg carrots, 1.2kg pepper, 1.5kg sawdust, 1.9kg rice and 1.0kg soybeans.

Mass for rice and soybeans is wet mass after soaking the rice and the soybeans in water for 12 hours.

6.2.2 Conditions of Blank Compost in Beginning of Test

<u>Conditions</u>	
Water content (%)	55.0
Volatile solids of total dry mass (%)	58.6
C-N-ratio	23.8
pH-Value	7.02

6.3 Set Up of the Testing

The whole mixture is composted in the oven. No nets are used during this test.

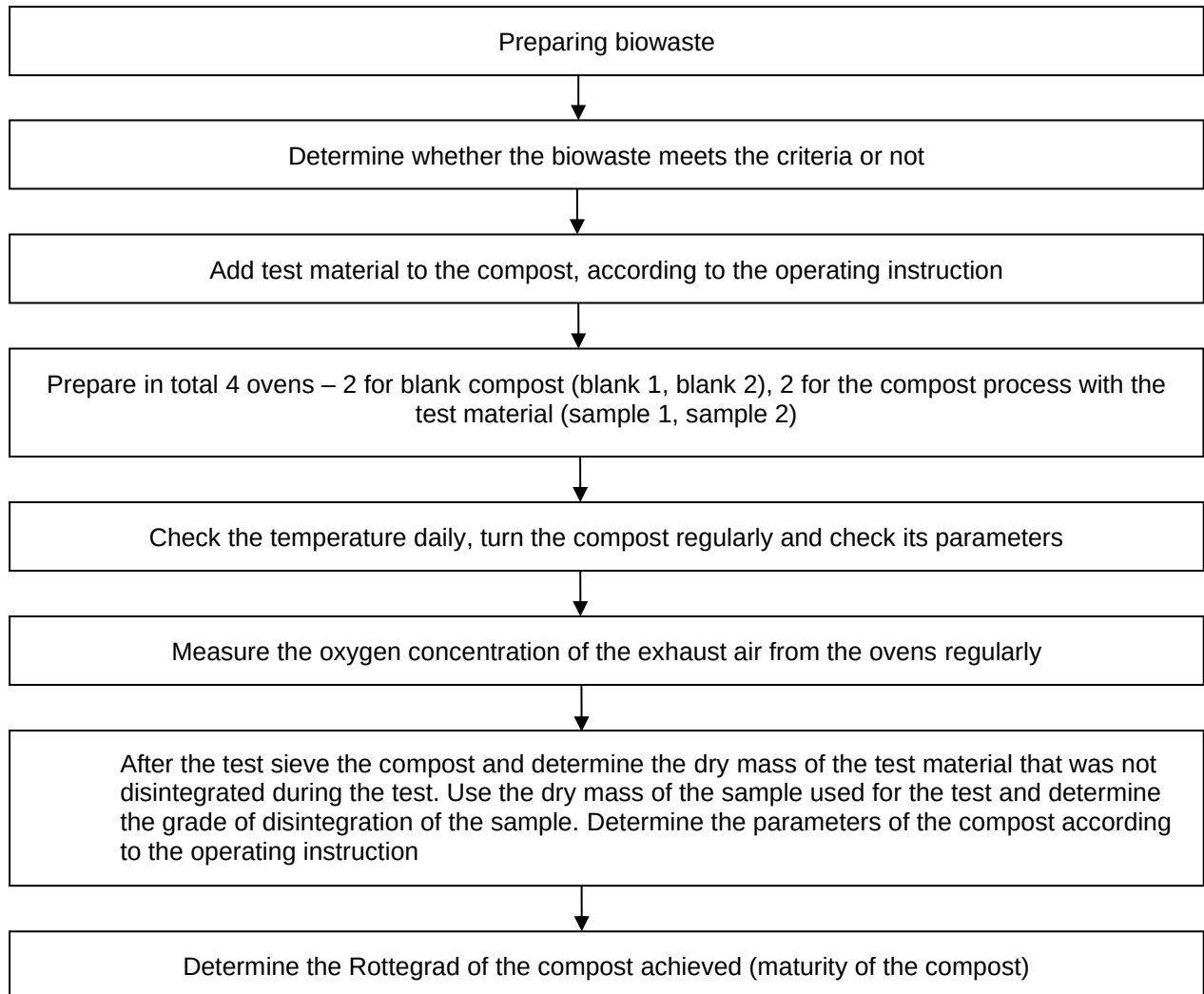
Wet mass of the blank compost: 15.0kg

Sample compost: Container (M001) pieces in around 5cm*5cm size + shreds are added to the blank compost to make the sample compost.

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6.4 Flow Chart of Experiment



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6.5 Results**6.5.1 Properties of Test Material**

Parameter	M001
Total organic carbon (%)	44.2
Total nitrogen content (g/kg)	<0.1
Total dry solids (%)	92.4
Volatile solids of total dry mass (%)	99.3
Requirement for volatile solids (%)	≥ 50
Moisture content (%)	7.6

6.5.2 Amount of Test Material and Biowaste in Ovens before Disintegration

	Biowaste	Test Material	
	Wet mass (kg)	Wet mass in final form (g) M001	Wet mass in fine form (g) M001
Blank 1	15.0	None	None
Blank 2	15.0	None	None
Sample 1	15.0	164.4	1371.3
Sample 2	15.0	163.6	1369.5

6.5.3 Amount of Test Material after the Process of Disintegration**Sample 1**

Parameter	Unit	Result
Total dry mass of the sample used for the test	g	151.9
Total dry mass of sample (>2mm-fraction) after the test:	g	0
Degree of disintegration	%	100

Sample 2

Parameter	Unit	Result
Total dry mass of the sample used for the test	g	151.2
Total dry mass of sample (>2mm-fraction) after the test:	g	0
Degree of disintegration	%	100

The amount of sample found after sieving the final compost through a 2mm sieve, washing and drying the material, is less than 10% of the sample amount placed in the biowaste at the beginning of the test. The physical breakdown during the composting process was successful.

6.5.4 Test Results of the Compost after Disintegration

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6.5.4.1 Wet Mass of the Compost Achieved after Disintegration

Parameter	Unit	Result
Wet mass of the compost (blank 1)	kg	17.7
Wet mass of the compost (blank 2)	kg	16.8
Wet mass of the compost (sample 1)	kg	16.9
Wet mass of the compost (sample 2)	kg	17.4

6.5.4.2 Parameters of the Compost Achieved after Disintegration by Analyzing the <10mm Fraction

Parameter	Unit	Blank 1	Blank 2	Sample 1	Sample 2
Total dry solids	%	96.1	96.1	97.6	97.6
Volatile solids	%	34.6	34.5	34.6	35.1
pH	-	8.16	7.88	7.71	7.33
Phosphorus	mg/kg	5450	5590	6640	6700
Nitrite as N	mg/kg	<0.60	<0.60	<0.60	<0.60
Electrical conductivity	mS/m	241	198	244	176
Total nitrogen as N	g/kg	8.53	8.75	9.75	9.43
Nitrate as N	mg/kg	83.0	81.2	15.6	16.1
Ammonium nitrogen as N	mg/kg	53.4	42.0	28.5	35.6
Potassium	mg/kg	24200	25200	24500	24700
Magnesium	mg/kg	10800	11100	10500	10600
Volumetric density	Kg/L	0.86	0.80	0.79	0.83
Total organic carbon	%	26.4	27.4	23.0	24.4

There is no obvious deviation on the tested parameters between the composts obtained after the test on disintegration.

6.5.4.3 Rottegrad of the Compost Achieved after Disintegration

The Rottegrad is a parameter for determining the maturity of the compost obtained after the test on disintegration. After 84 days the final compost is placed in Dewar vessels for 72 hours. The highest temperature during these 72 hours is used for comparing with the limits for the different Rottegrads (see table below).

As mature compost does not undergo a significant self-heating process anymore, the temperature shall be below 30°C.

Parameter	Amount of Compost (kg)	Temperature after 72 h (°C)	Rottegrad
Blank 1	1.0	28.9	V
Blank 2	1.0	29.1	V
Sample 1	1.0	28.9	V
Sample 2	1.0	29.7	V

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Reference:

Maximum Temperature	> 60°C	50.1°C to 60°C	40.1°C to 50°C	30.1°C to 40°C	≤ 30°C
Rottegrad	I	II	III	IV	V

Validity parameter: The compost shall have a Rottegrad of IV to V after 12 weeks. This validity parameter has been fulfilled.

6.5.5 Appearance of Blank and Sample Compost

6.5.5.1 Appearance of Blank Compost



Before test



After 1 week



After 2 weeks



After 4 weeks



After 5 weeks



After 6 weeks



After 7 weeks



After 8 weeks



After 9 weeks



After 10 weeks



After 11 weeks



After test (After 12 weeks)

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6.5.5.2 Appearance of Sample Compost



Before test



After 1 week



After 2 weeks



After 4 weeks



After 5 weeks



After 6 weeks



After 7 weeks



After 8 weeks



After 9 weeks



After 10 weeks



After 11 weeks



After test (After 12 weeks)

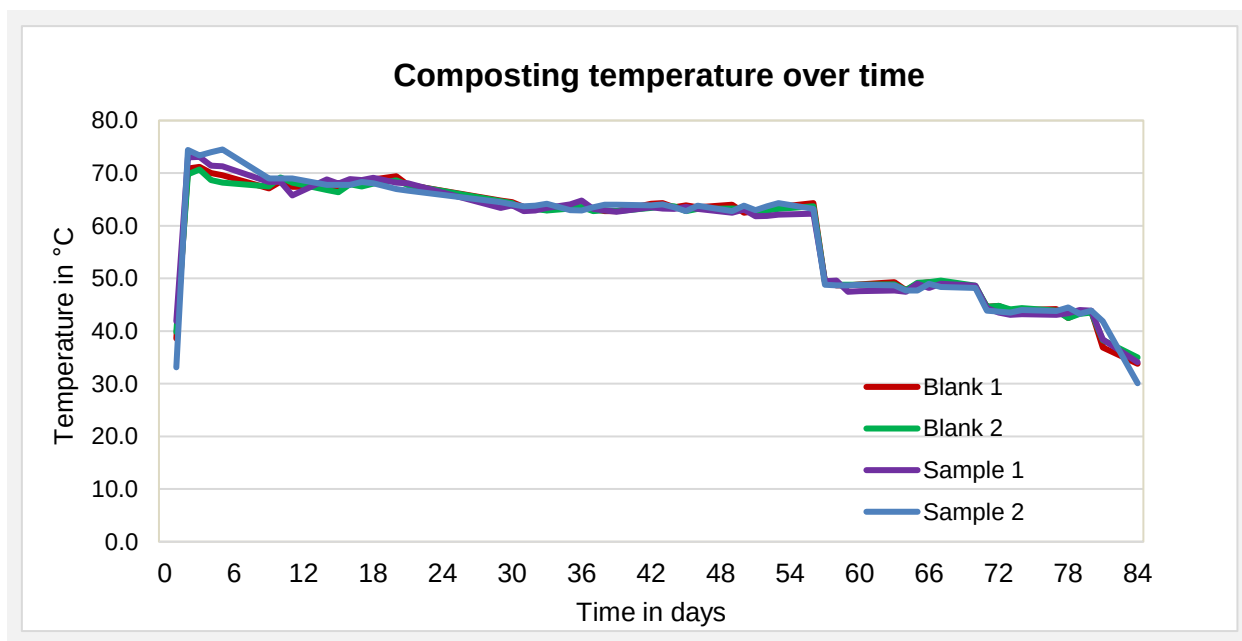
Remark: Due to the coming public holiday, the picture of Week 3 was skipped. After test, no sample residues are distinguished to the naked eye from the other matter in the compost at a distance of 500 mm. No suspicion of visual contamination can be seen at the end of the test. The final interpretation is to be assessed by the certification body as the presence of visual contamination will render this test result uncompliant with the standard/certification scheme.

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6.6 Diagrams

6.6.1 Course of the Temperature during the Test

Validity parameter:

Following minimum and maximum temperatures shall be respected in the ovens during the test.

- Days 2–7: between 60 °C and 75 °C
- Days 8–28: between 55 (±5) °C and 70 (±5) °C
- Days 29–56: between 50 (±5) °C and 65 (±5) °C
- Days 57–70: below 55 °C
- Days 71–84: below 45 °C

This requirement has been fulfilled. For single values please see below table.

Temperature of the compost during the test (°C)

Day	Blank 1	Blank 2	Sample 1	Sample 2
1	38.6	39.8	41.9	33.1
2	70.9	69.8	73.0	74.4
3	71.2	70.7	73.1	73.4
4	70.0	68.7	71.4	74.0
5	69.6	68.2	71.3	74.5
9	67.1	67.5	68.3	69.0
10	68.4	69.2	68.4	69.0
11	67.4	68.2	65.8	69.0
14	67.4	66.8	68.8	67.8

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15	66.6	66.4	68.0	67.8
16	68.7	67.9	68.9	67.8
17	68.1	67.5	68.7	68.3
18	68.8	68.0	69.1	68.1
20	69.4	68.6	68.2	67.0
21	67.8	67.8	68.1	66.7
29	64.8	64.7	63.4	64.5
30	64.5	64.3	63.9	64.1
31	63.6	62.9	62.8	63.7
32	63.4	63.2	62.9	63.8
33	63.0	62.9	63.4	64.2
35	63.9	63.3	64.1	63.0
36	63.4	63.6	64.8	62.9
37	63.2	62.8	63.2	63.5
38	62.8	63.0	62.9	64.0
39	62.8	62.8	62.7	64.0
42	64.2	63.4	63.5	63.9
43	64.3	63.7	63.3	64.1
44	63.5	63.7	63.2	63.5
45	63.9	62.8	63.6	62.8
46	63.5	63.2	63.2	63.8
49	64.0	63.3	62.5	62.8
50	62.5	63.2	63.1	63.8
51	62.8	62.5	61.8	63.0
52	63.4	62.9	61.9	63.7
53	63.6	63.2	62.1	64.3
56	64.3	63.7	62.3	63.2
57	49.3	49.4	49.5	48.8
58	48.7	48.8	49.6	48.7
59	48.7	48.8	47.5	48.7
60	48.9	48.8	47.6	48.8
63	49.3	48.9	47.7	48.7
64	47.8	47.8	47.5	47.7
65	49.0	49.2	49.0	47.7
66	49.3	49.3	48.2	49.0
67	48.9	49.6	49.0	48.4

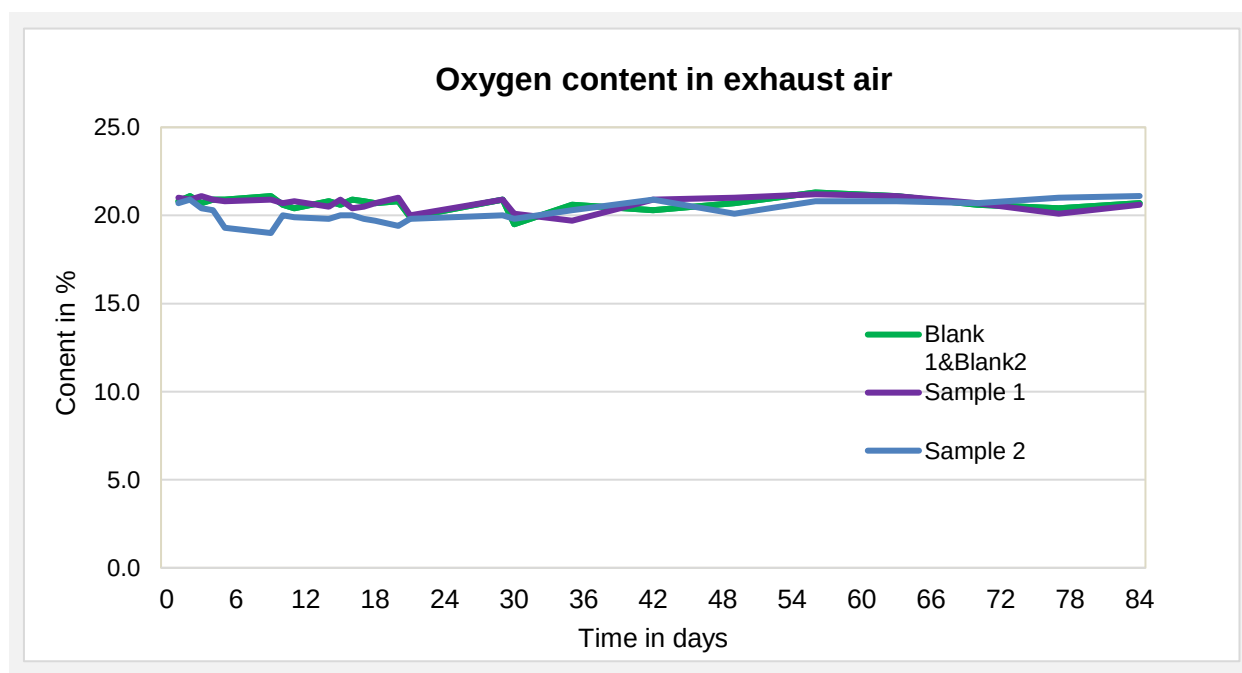
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70	48.3	48.6	48.6	48.2
71	44.6	44.6	44.4	43.9
72	44.8	44.8	43.5	43.7
73	43.9	44.1	43.1	43.5
74	44.0	44.4	43.2	44.0
77	44.2	43.9	43.1	43.8
78	42.5	42.5	43.4	44.5
79	43.5	43.3	44.0	43.3
80	43.8	43.5	43.9	43.9
81	36.9	38.3	38.4	41.9
84	33.8	35.0	34.1	30.1

3 days before the test was finished the heating function of the ovens was switched off. This caused the decreasing temperature after 81 days. The reason for switching off the heating function is, that the final compost will be used for determining the Rottegrad. Here the self-heating process of the final compost is determined, so we need to allow the compost to cool down to its natural temperature.

6.6.2 Course of the Concentration of Oxygen in the Exhaust Gas during the Test



Concentration of oxygen over time

Validity parameter: For ensuring aerobic conditions, the concentration of oxygen in the exhaust gas never falls below 10%. This requirement has been fulfilled. For single values please see below table.

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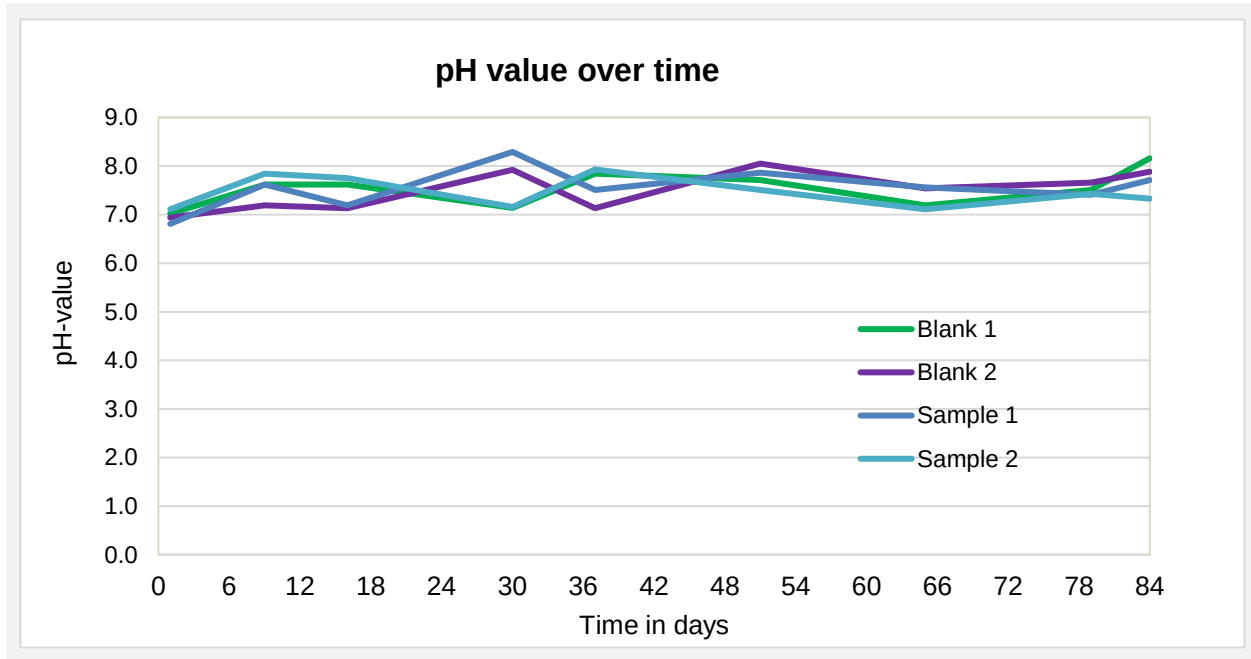
Concentration of oxygen in the exhaust gas (%)

Day	Blank 1	Blank 2	Sample 1	Sample 2
1	20.8	20.8	21.0	20.7
2	21.1	21.1	20.9	20.9
3	20.7	20.7	21.1	20.4
4	20.9	20.9	20.9	20.3
5	20.9	20.9	20.8	19.3
9	21.1	21.1	20.9	19.0
10	20.6	20.6	20.7	20.0
11	20.4	20.4	20.8	19.9
14	20.8	20.8	20.5	19.8
15	20.6	20.6	20.9	20.0
16	20.9	20.9	20.4	20.0
17	20.8	20.8	20.5	19.8
18	20.7	20.7	20.7	19.7
20	20.8	20.8	21.0	19.4
21	19.9	19.9	20.0	19.8
29	20.9	20.9	20.9	20.0
30	19.5	19.5	20.1	19.8
35	20.6	20.6	19.7	20.3
42	20.3	20.3	20.9	20.9
49	20.7	20.7	21.0	20.1
56	21.3	21.3	21.2	20.8
63	21.1	21.1	21.1	20.8
70	20.6	20.6	20.7	20.7
77	20.4	20.4	20.1	21.0
84	20.7	20.7	20.6	21.1

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6.6.3 Graph of Development of pH Value of the Compost during Composting Process

*pH Value over time*

Validity
parameter:

The pH-value never falls below 5 and raises to a value above 7 during the test.
 This requirement has been fulfilled. For single values please see below table.

pH value of the compost during the test

Day	Blank 1	Blank 2	Sample 1	Sample 2
1	7.02	6.94	6.81	7.11
9	7.62	7.19	7.62	7.84
16	7.62	7.13	7.19	7.75
30	7.14	7.92	8.29	7.16
37	7.84	7.13	7.51	7.93
51	7.71	8.05	7.86	7.51
65	7.19	7.54	7.56	7.11
79	7.51	7.66	7.41	7.43
84	8.16	7.88	7.71	7.33

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7 Plant test**7.1 General test information**Test Method : EN 13432: 2000 Annex E and OECD 208: 2006Plants : For this test seeds for corn and soybean are used. Seeds are stored in dry room at home temperature for no more than 2 months.

Common name	Soybean	Corn
Class	di-cotyledonae	mono-cotyledonae
Family	Fabaceae (Leguminosae)	Poaceae (Gramineae)
Species	<i>Glycine max (G. soja)</i>	<i>Zea mays</i>
percentage germination	> 85%	
seed size	6-9mm	6-10mm

Plant Pots : Plants grow in pots made of PP in volumes of 10L.Reference Substrate : A mixture of commercial potting soil as substrate (peat soil) and siliceous sand has been used.

Soil particle distribution: < 6mm; Total organic carbon: 17.4%; Volatile solids content: 31.1%; Total dry solids: 57.4%; pH value: 7.33

Compost: Use the composts < 10mm fraction including sample compost and blank compost obtained after 12 weeks composting and sieving with 10mm sieve according to ISO 16929: 2021.**7.2 Set up of the plant test**

Prepare 24 pots and fill them with mixtures of the reference substrate with 25% or 50% (w/w) of blank compost or sample compost.

The total soil in each pot is 1400.0g, and peat soil is mixed with siliceous sand in a ratio of 1:1(w/w) to prepare the reference substrate.

In a plant test after complete disintegration, weight setup of each pot is shown in table below.

Mix ratio	Weight (g/pot)		
	Blank compost/Sample compost	Reference substrate	Total
25%	350.0	1050.0	1400.0
50%	700.0	700.0	1400.0

3 parallels were set for each mix ratio and the pots numbers are listed as below:

Plant	Mix ratio	Pot No.	
		Blank compost	Sample compost
Soybean	25 %	Parallel 1~3	Parallel 1~3
	50 %	Parallel 1~3	Parallel 1~3

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Corn	25 %	Parallel 1~3	Parallel 1~3
	50 %	Parallel 1~3	Parallel 1~3

Evenly add 100 seeds of soybean or corn in each pot and add water. After watering, the pots are set in a warm house which staying dark all days during the germination period. For ensuring identical conditions the pots are stored in a greenhouse. The plants are watered daily and no additional fertilization is used.

Temperature: 22°C ± 10°C;

Relative humidity: 70% ± 25%;

Photoperiod: 16hours/day;

Light: luminance of 25900 lx ± 3700 lx (350 ± 50 µE/ m²/s), no less than 14800 lx (200 µE/ m²/s), measured at the top of the canopy.

After 50% of the seeds in the pots with a mixture of blank compost has been emerged, the plant growth test was kept running for 14 ~ 21 days.

7.3 Summary of test results

Parameters	Results			Requirement	Conclusion
	Plant	Mix ratio 25%	Mix ratio 50%		
Mean Germination Rate (%)	Soybean	100.4	99.3	≥ 90	Pass
	Corn	100.4	99.7		
Mean Dry Biomass / plant (%)	Soybean	99.4	99.9	≥ 90	Pass
	Corn	99.2	98.6		
Alternatively, Mean Wet Biomass / plant (%)	Soybean	98.5	101.3	≥ 90	Pass
	Corn	100.1	99.2		

Validity Criteria :

The seedling emergence is at least 70%.

☒ Yes

☐ No

The seedlings do not exhibit visible phytotoxic effects (e.g. chlorosis, necrosis, wilting, leaf and stem deformations) and the plants exhibit only normal variation in growth and morphology for that particular species.

☒ Yes

☐ No

The mean survival of emerged control seedlings is at least 90% for the duration of the study.

☒ Yes

☐ No

Environmental conditions for a particular species are identical and growing media contain the same amount of soil matrix, support media, or substrate from the same source.

☒ Yes

☐ No

As the four criteria above for the blank have been fulfilled, the test is considered to be valid.

For detailed information, please see the following pages.

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7.4 Results**7.4.1 Germination rate**

The pots were placed in the green room. It was 5 days after start, over 50% seeds each pot have been emerged.

Mix ratio	Test No.	Germination of Soybean (numbers)		Germination Rate (%) sample compost as percentage of blank compost	Mean Germination Rate (%)
		Blank compost	Sample compost		
25%	Parallel 1	95	95	100.0	100.4
	Parallel 2	94	94	100.0	
	Parallel 3	92	93	101.1	
50%	Parallel 1	96	94	97.9	99.3
	Parallel 2	93	96	103.2	
	Parallel 3	95	92	96.8	

Mix ratio	Test No.	Germination of Corn (numbers)		Germination Rate (%) sample compost as percentage of blank compost	Mean Germination Rate (%)
		Blank compost	Sample compost		
25%	Parallel 1	90	94	104.4	100.4
	Parallel 2	95	93	97.9	
	Parallel 3	93	92	98.9	
50%	Parallel 1	95	93	97.9	99.7
	Parallel 2	96	94	97.9	
	Parallel 3	92	95	103.3	

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7.4.2 Wet Biomass of the Plants

14 days after the germination rate of the blank mixtures has reached 50%, the test was stopped. The plants were cut right above the soil. Some plants were removed which were attached to the soil. The wet biomass has been determined after then. By comparing the wet mass of plants growing on mixture blank and mixture sample it is checked whether the sample has a negative effect on the plant growth or not.

Mix ratio	Test No.	Total Wet Biomass of Soybean (g)		Wet Biomass of Soybean / plant (g)		Wet Biomass / plant (%) Sample compost as percentage of blank compost	Mean Wet Biomass / plant (%)
		Blank compost	Sample compost	Blank compost	Sample compost		
25%	Parallel 1	336.8	336.1	3.583	3.614	100.9	98.5
	Parallel 2	349.5	342.4	3.799	3.682	96.9	
	Parallel 3	335.4	328.1	3.686	3.605	97.8	
50%	Parallel 1	326.0	327.8	3.468	3.525	101.6	101.3
	Parallel 2	334.9	344.4	3.640	3.625	99.6	
	Parallel 3	326.5	324.1	3.511	3.601	102.6	

Mix ratio	Test No.	Total Wet Biomass of Corn (g)		Wet Biomass of Corn / plant (g)		Wet Biomass / plant (%) Sample compost as percentage of blank compost	Mean Wet Biomass / plant (%)
		Blank compost	Sample compost	Blank compost	Sample compost		
25%	Parallel 1	108.9	109.5	1.224	1.190	97.2	100.1
	Parallel 2	117.6	114.2	1.278	1.241	97.1	
	Parallel 3	109.8	115.2	1.207	1.280	106.0	
50%	Parallel 1	114.5	109.5	1.218	1.203	98.8	99.2
	Parallel 2	108.5	104.1	1.154	1.119	97.0	
	Parallel 3	101.6	106.8	1.116	1.136	101.8	

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7.4.3 Dry Biomass of the Plants

After the plants were dried at 60°C for 12 hours and cooling down, the dry biomass has been determined. By comparing the dry mass of plants growing on mixture blank and mixture sample it is checked whether the sample has a negative effect on the plant growth or not.

Mix ratio	Test No.	Total Dry Biomass of Soybean (g)		Dry Biomass of Soybean / plant (g)		Dry Biomass / plant (%) Sample compost as percentage of blank compost	Mean Dry Biomass / plant (%)
		Blank compost	Sample compost	Blank compost	Sample compost		
25%	Parallel 1	31.2	32.1	0.332	0.345	103.9	99.4
	Parallel 2	32.3	31.5	0.351	0.339	96.6	
	Parallel 3	31.9	31.2	0.351	0.343	97.7	
50%	Parallel 1	30.3	31.5	0.322	0.339	105.3	99.9
	Parallel 2	32.0	31.7	0.348	0.334	96.0	
	Parallel 3	31.8	30.3	0.342	0.337	98.5	

Mix ratio	Test No.	Total Dry Biomass of Corn (g)		Dry Biomass of Corn / plant (g)		Dry Biomass / plant (%) Sample compost as percentage of blank compost	Mean Dry Biomass / plant (%)
		Blank compost	Sample compost	Blank compost	Sample compost		
25%	Parallel 1	10.5	10.8	0.118	0.117	99.2	99.2
	Parallel 2	11.5	11.1	0.125	0.121	96.8	
	Parallel 3	10.8	10.9	0.119	0.121	101.7	
50%	Parallel 1	11.0	10.3	0.117	0.113	96.6	98.6
	Parallel 2	10.2	9.7	0.109	0.104	95.4	
	Parallel 3	9.6	10.2	0.105	0.109	103.8	

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7.4.4 Survival Rate of Blank Compost

Plant	Mix ratio	Test No.	Survival Numbers	Germination Numbers	Survival Rate (%)	Mean Survival Rate (%)
Soybean	25%	Parallel 1	94	95	98.9	98.6
		Parallel 2	92	94	97.9	
		Parallel 3	91	92	98.9	
	50%	Parallel 1	94	96	97.9	98.2
		Parallel 2	92	93	98.9	
		Parallel 3	93	95	97.9	
Corn	25%	Parallel 1	89	90	98.9	97.8
		Parallel 2	92	95	96.8	
		Parallel 3	91	93	97.8	
	50%	Parallel 1	94	95	98.9	98.6
		Parallel 2	94	96	97.9	
		Parallel 3	91	92	98.9	

Remark: Mean Survival rate (%) = mean survival numbers/mean germination numbers*100%

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7.4.5 Appearance of plants during the test



Blank compost

Sample compost

**Soybean growth, during test
25% Mix on the top, 50% Mix on the bottom**



Blank compost

Sample compost

**Soybean growth, after test
25% Mix on the top, 50% Mix on the bottom**

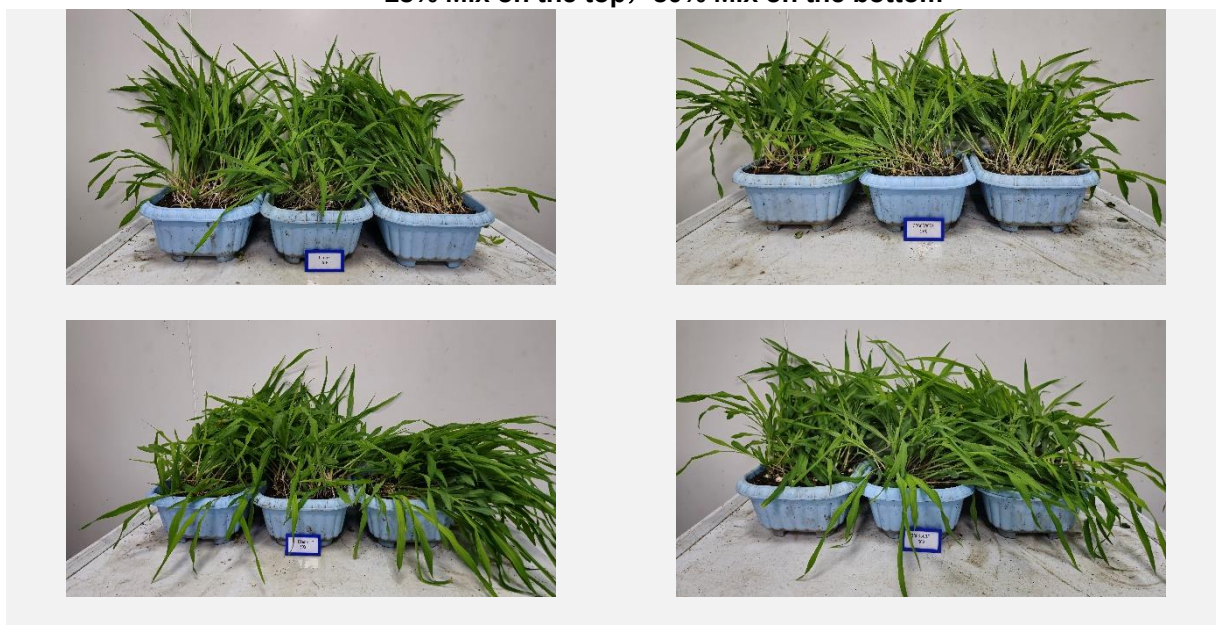


Blank compost

Sample compost

Corn growth, during test

25% Mix on the top, 50% Mix on the bottom



Blank compost

Sample compost

Corn growth, after test

25% Mix on the top, 50% Mix on the bottom

7.4.6 Additional information

No abnormal observations. The seedlings do not exhibit visible phytotoxic effects (e.g. chlorosis, necrosis, wilting, leaf and stem deformations) and the plants exhibit only normal variation in growth and morphology for soybean and corn.

-End-

