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| <b>Report No.:</b> MUM/001971/2025 | <b>Sample No:</b> 19340234 | <b>Report Date:</b> 25/03/2026 |
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|                                            |                                                                                                                                             |
|--------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Sample Registration Date</b>            | 05/05/2025                                                                                                                                  |
| <b>Analysis Starting Date</b>              | 05/05/2025                                                                                                                                  |
| <b>Analysis Completed on</b>               | 30/01/2026                                                                                                                                  |
| <b>Sampling Done by</b>                    | Sample drawn and supplied by customer                                                                                                       |
| <b>Deviation from the test methods:</b>    | None                                                                                                                                        |
| <b>Packaging Condition/sealed/unsealed</b> | Sealed                                                                                                                                      |
| <b>Sample Image</b>                        |  <p><b>Figure 1: Degraded Film Sample (19340234)</b></p> |

**DETAILS PROVIDED BY THE CUSTOMER**

|                                           |                                                                                                                                                                                                                                                  |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Customer Name:</b>                     | 860.517.500 MONPLAST SAS                                                                                                                                                                                                                         |
| <b>Contact Person:</b>                    | Mr. Sergio Mejia Estrada                                                                                                                                                                                                                         |
| <b>Address:</b>                           | Medellin Highway, km 7.1 Celta Trade Park Industrial Park, Building 72, Funza, Colombia                                                                                                                                                          |
| <b>Sample submitted as</b>                | 830.102.259 - E.H.G. COLOR PLAST SAS; 830.039.985 - POLIPAK EMPAQUES DE POLIETILENO DE ALTA Y BAJA DENSIDAD SAS – INPLASCOL SAS; 830.141.566                                                                                                     |
| <b>Description on label/Sample Bottle</b> | PE film incorporates the 1% d2w PE manufactured by Symphony Environmental Technologies, UK. The film: 860.517.500 MONPLAST SAS, 830.102.259 E.H.G. COLOR PLAST SAS, 830.039.985 POLIPAK EMPAQUES DE POLIETILENO DE ALTA Y BAJA DENSIDAD SAS, and |

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|                                    |                            |                                |
|------------------------------------|----------------------------|--------------------------------|
| <b>Report No.:</b> MUM/001971/2025 | <b>Sample No:</b> 19340234 | <b>Report Date:</b> 30/01/2026 |
|------------------------------------|----------------------------|--------------------------------|

|                          |                                                                                                                                                                                                                                       |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          | 830.141.566 INPLASCOL SAS                                                                                                                                                                                                             |
| <b>Sample type</b>       | Ref 1: PEHD+PELLD+CaCO3+PIGMENT+d2w in Cal. 1.25<br>Ref 2: POST-CONSUMPTION+PIGMENT+d2w in Cal 1.25<br>Ref 3: PEHD+PELLD+bppl+d2w in Cal. 2.0<br>Ref 4: HDPE+POST-CONSUMPTION+d2w in Cal. 1.25<br>Ref 5: HDPE+PELLD +d2w in Cal. 1.25 |
| <b>Quantity</b>          | 1 Packet                                                                                                                                                                                                                              |
| <b>Mode of Packaging</b> | Courier Box                                                                                                                                                                                                                           |
| <b>Sample condition</b>  | Sample was at ambient temperature in good condition                                                                                                                                                                                   |
| <b>Test Method</b>       | ASTM D6954 - Exposing and Testing Plastics that Degrade in the Environment by a Combination of Oxidation and Biodegradation-Tier 2 and Tier 3                                                                                         |

## **LABORATORY**

Testing as presented in this report was conducted by Environmental division of Intertek India Private Limited. The testing facility is located at F wing, 2nd Floor, Chandivali Saki vihar Road, Andheri (East), Mumbai – 400 072, India.

## **SAMPLE RECEIPT**

The sample was received on 05/05/2025 at the Intertek testing facility. The sample was sent through courier. The sample was at ambient temperature in good condition with no evidence of damage or contamination. No temperature preservation was required.

## **PROJECT DESCRIPTION**

The sample 830.102.259 - E.H.G. COLOR PLAST SAS; 830.039.985 -POLIPAK EMPAQUES DE POLIETILENO DE ALTA Y BAJA DENSIDAD SAS – INPLASCOL SAS; 830.141.566– Laboratory reference No.19340234 were submitted by 860.517.500 MONPLAST SAS for testing under standard ASTM D6954.

## **Test Method:**

ASTM D6954 standards are used in three tiers for accelerating and measuring the loss in properties and molecular weight by thermal and photo oxidation processes and other abiotic processes (Tier 1), measuring biodegradation (Tier 2), and assessing ecological impact of the products from these processes (Tier 3). **(Figure 1)**

Description of three Tiers:

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|------------------------------------|----------------------------|--------------------------------|
| <b>Report No.:</b> MUM/001971/2025 | <b>Sample No:</b> 19340234 | <b>Report Date:</b> 30/01/2026 |
|------------------------------------|----------------------------|--------------------------------|

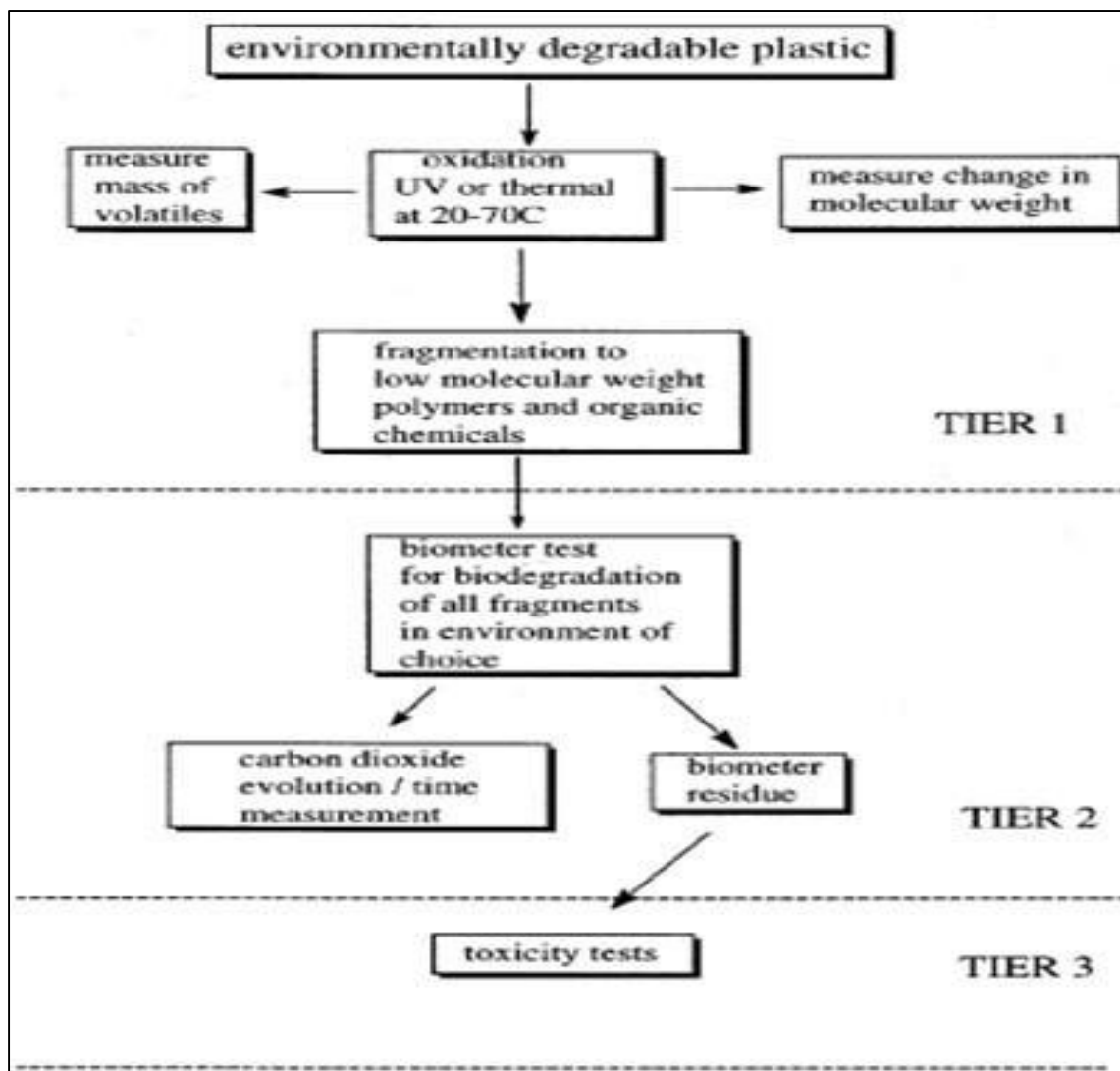
- 1) **Abiotic Degradation (Tier 1):** Using either accelerated or real time conditions, samples are subjected to a combination of oxygen, heat and/or light to reduce the molecular weight and/ or mechanical properties. Tier 1 measures the rate and extent of molecular weight loss resulting from oxidation that is indicative of losses in physical properties from oxidation. ASTM D 5208 covers the specific procedures applicable for fluorescent Ultraviolet (UV) exposure of photodegradable plastics
  
- 2) **Biotic Degradation (Tier 2):** The residues from Tier 1 are retrieved from biodegradation testing using the environment in which the material is intended to end up after disposal (compost, soil, water, and landfill). In most cases, the amount and rate of CO<sub>2</sub> production (aerobic degradation). In Tier 2, after the Degraded Film Sample (19340234) s are exposed to the abiotic degradation process described in Tier 1, the entire test material is subjected to biodegradation tests as per ASTM D5988. The time profile of carbon dioxide evolution is recorded and the time to reach the appropriate thresholds are noted.
  
- 3) **Eco- toxicity (Tier 3):** By using of different species of plant, the effect of the residues from Tier 2 on the growth and survival can be determined. Tier 3 involves considerations of the ecological impacts in the final disposal medium such as soil, as in all biodegradation testing methods, which is basically a comparison of the test medium before and following oxidation and biodegradation.

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**Report No.:** MUM/001971/2025

**Sample No:** 19340234

**Report Date:**30/01/2026



**Figure 1: Protocol for analyzing Plastics that degrade in the Environment by a Combination of oxidation and Biodegradation- ASTM D6954**

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|                                    |                            |                                |
|------------------------------------|----------------------------|--------------------------------|
| <b>Report No.:</b> MUM/001971/2025 | <b>Sample No:</b> 19340234 | <b>Report Date:</b> 30/01/2026 |
|------------------------------------|----------------------------|--------------------------------|

## **BIOTIC DEGRADATION (TIER 2) METHODOLOGY**

### **Principle of Biodegradation:**

Biodegradability of the entire fragmented product from Tier 1 under lab- scale conditions is done using Test methods ASTM D5338. This method determines the degree and rate of aerobic biodegradation of plastic materials on exposure to a controlled composting environment under laboratory conditions, at thermophilic temperatures. The samples were exposed to an inoculum that is derived from compost from municipal solid waste. The aerobic composting takes place in an environment where temperature, aeration and humidity are closely monitored and controlled. The percentage of biodegradability is obtained by determining the percentage of carbon in the Degraded Film Sample (19340234) that is converted into CO<sub>2</sub> during the duration of the test.

### **Apparatus Setup:**

A series of 09 composting vessels of 5 liter volume (1 blank i.e. compost, 1 positive i.e. cellulose mixed with compost, and 1 test plastic sample mixed with compost, all in 3 replicates). The entire composting vessel were kept in Incubator capable of maintaining the temperature of composting vessels at  $58 \pm 2^{\circ}\text{C}$  (Figure 3). Pressurized air system that provides CO<sub>2</sub> free, H<sub>2</sub>O saturated air to each of the composting vessels at accurate aeration rate. CO<sub>2</sub> evolved will be absorbed by 0.024N Ba(OH)<sub>2</sub> and the amount of CO<sub>2</sub> will be determined by titrating with 0.05 N HCl.

### **Result:**

After 180 days of incubation under dry ( $58^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ), aerobic controlled composting conditions using test method ASTM D5338, the reference (Positive control), Degraded Film Sample (19340234) were gradually biodegraded. The reference sample degraded to 100.00 % after 112 days while the **Degraded Film Sample (19340234)** sample showed 91.42 % after 180 days.

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|------------------------------------|----------------------------|--------------------------------|
| <b>Report No.:</b> MUM/001971/2025 | <b>Sample No:</b> 19340234 | <b>Report Date:</b> 30/01/2026 |
|------------------------------------|----------------------------|--------------------------------|

**Table 1: Percentage Biodegradation of Positive control and Degraded Film Sample (19340234)**

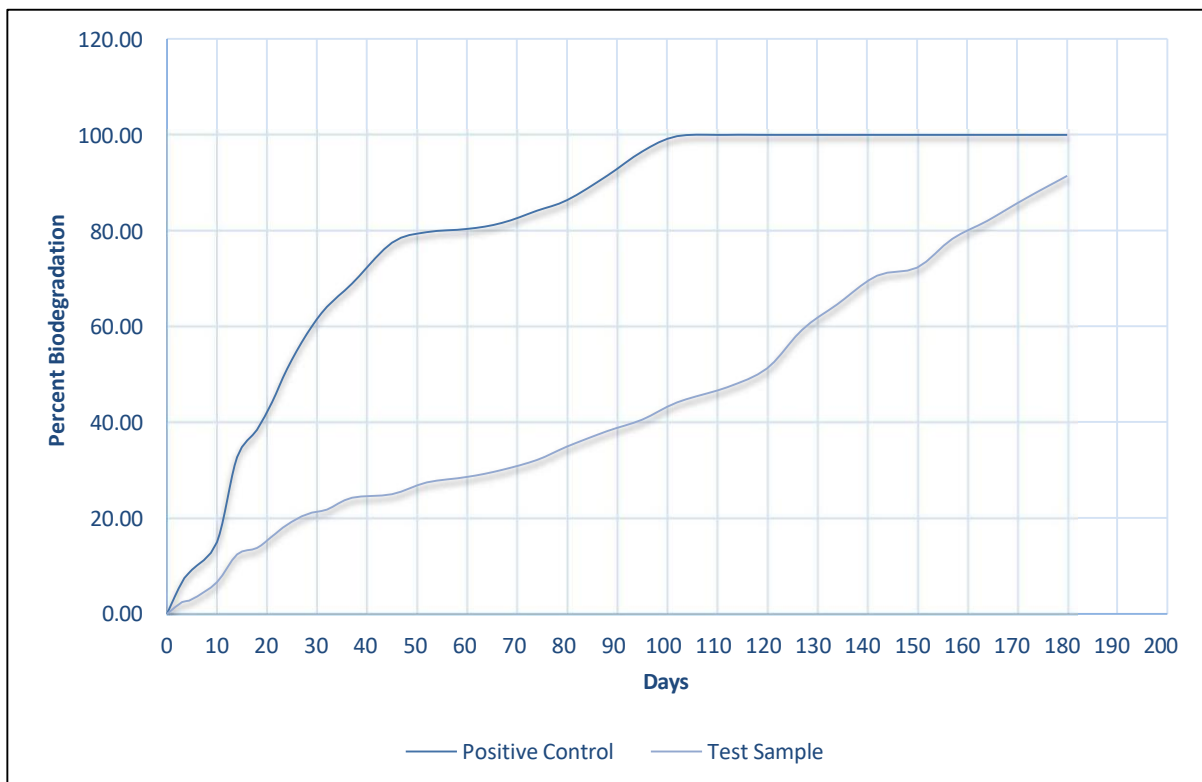
| Day | % Biodegradation |                                 |
|-----|------------------|---------------------------------|
|     | Positive Control | Degraded Film Sample (19340234) |
| 0   | 0.00             | 0.00                            |
| 3   | 6.67             | 2.44                            |
| 5   | 9.21             | 3.00                            |
| 10  | 14.92            | 6.57                            |
| 14  | 32.70            | 12.39                           |
| 18  | 38.41            | 13.70                           |
| 21  | 44.13            | 16.14                           |
| 24  | 51.11            | 18.58                           |
| 28  | 58.41            | 20.84                           |
| 32  | 64.13            | 21.77                           |
| 37  | 68.89            | 24.21                           |
| 45  | 77.46            | 24.97                           |
| 52  | 79.68            | 27.41                           |
| 60  | 80.32            | 28.53                           |
| 67  | 81.59            | 30.03                           |
| 74  | 84.13            | 32.10                           |
| 80  | 86.35            | 34.91                           |
| 88  | 91.43            | 38.11                           |
| 95  | 96.51            | 40.55                           |
| 102 | 99.68            | 44.11                           |
| 112 | 100.00           | 47.30                           |
| 120 | -                | 51.25                           |
| 127 | -                | 59.32                           |
| 134 | -                | 64.57                           |
| 142 | -                | 70.58                           |
| 150 | -                | 72.27                           |
| 157 | -                | 78.28                           |
| 164 | -                | 82.03                           |
| 172 | -                | 86.91                           |
| 180 | -                | 91.42                           |

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**Report No.:** MUM/001971/2025

**Sample No:** 19340234

**Report Date:** 30/01/2026



**Graph 1: Percentage biodegradation of Degraded Film Sample (19340234) under aerobic composting conditions**

**Table 2: Validity of the test:**

| Test parameter                                                                                                                             | Acceptance criteria             | Results |
|--------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|---------|
| Degree of biodegradation of the reference material (Cellulose)                                                                             | > 70% after 45 days             | 77.46   |
| Difference in the percentage of biodegradation across three replicates of the reference material (Cellulose)                               | < 20 %                          | < 20 %  |
| Carbon Dioxide produced by Inoculum in the blank over the first 10 days of the test (mg CO <sub>2</sub> produced per g of volatile solids) | 50 – 150 mg CO <sub>2</sub> / g | 85      |

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|------------------------------------|----------------------------|--------------------------------|
| <b>Report No.:</b> MUM/001971/2025 | <b>Sample No:</b> 19340234 | <b>Report Date:</b> 30/01/2026 |
|------------------------------------|----------------------------|--------------------------------|

### **ECO- TOXICITY (TIER 3)**

#### **PLANT GROWTH TEST ACCORDING TO OECD 208**

In order to ensure that the composting of plastic products or materials does not have any harmful effects on the finished compost or on the environment, all requirements specified shall be met.

Ecotoxicity test scheme: Ecotoxicity tests are performed with compost samples produced with and without the addition of a plastics product or a material to determine and assess possible harmful effects on terrestrial organisms. The test scheme considers:

All relevant terrestrial organism groups such as plants, earthworms (invertebrates) and microorganisms.

| <b>Organism group</b>       | <b>Test methods</b>                        |
|-----------------------------|--------------------------------------------|
| Plants: - higher plants     | Plant growth test according to OECD 208    |
| Invertebrates: - earthworms | Acute earthworm test according to OECD 207 |

The sample shall have no adverse effect on the environment, which includes terrestrial organisms. After biodegradation, the biodegraded residue of **Degraded Film Sample (19340234)** was subjected to eco-toxicity testing to check its effect on the environment. The results of Ecotoxicity are mentioned in Table 3 to 8.

#### **Principle of OECD 208**

Seeds are placed in contact with soil treated with the test substance and evaluated for effects following 14 to 21 days after 50% emergence of the seedlings in the control group. Endpoints measured are visual assessment of seedling emergence, biomass (fresh or dry shoot weight or shoot height) and visual detrimental effects (chlorosis, mortality, plant development abnormalities, etc.). Measurements are made at least weekly or more often when recording the emergence of the seeds and compared to those of untreated control plants.

#### **Validity of the test**

For the test to be considered **Valid**, the following performance criteria must be met in the controls:

- the seedling emergence is at least 70%.
- 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.
- the mean control survival is at least 90% for the duration of the study.

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|------------------------------------|----------------------------|--------------------------------|
| <b>Report No.:</b> MUM/001971/2025 | <b>Sample No:</b> 19340234 | <b>Report Date:</b> 30/01/2026 |
|------------------------------------|----------------------------|--------------------------------|

- 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.

## **Description of the method**

### **Production of compost**

After completion of 180 days of biodegradation, Degraded Film Sample (19340234) compost and blank compost are sieved through a standard 10 mm sieve individually. Separate the sieved material further by sieving it through a standard 2 mm sieve. Compost obtained is used for the toxicity test as per the ratio mentioned in preparation of sample and blank mixtures.

### **Preparation of mixtures of sample and blank compost**

For preparing the mixture use reference soil with 25% and 50% (m/m or v/v) of the compost. Compost obtained after biodegradation of the test material (sample compost) and the blank compost obtained from the parallel process after addition of test material. Prepare the concentration as mentioned below.

#### **1) Degraded Film Sample (19340234)**

Mixture 1 - 25 % (25 % of Sample compost + 75 % reference soil)

Mixture 2 - 50 % (50% of Sample compost + 50 % reference soil)

#### **2) Blank**

Mixture 1 - 25 % (25% of Blank compost + 75 % reference soil)

Mixture 2 - 50 % (50% of Blank compost + 50 % reference soil)

## **Selection Of Plant Species**

### **Plant Species Used**

#### **1. Monocot**

Family: *Brassicaceae*

Species: *Brassica sinapis alba*

Common name: Mustard

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| <b>Report No.:</b> MUM/001971/2025 | <b>Sample No:</b> 19340234 | <b>Report Date:</b> 30/01/2026 |
|------------------------------------|----------------------------|--------------------------------|

## 2. Dicot

Family: *Poaceae*

Species: *Triticum aestivum*

Common name: Wheat

## Procedure

Fill each tray with a minimum of 200 g of the sample and add as a minimum 100 seeds on the top. Cover the seeds with a thin layer of inert material such as siliceous sand or perlite. Perform the test in triplicate for each mixture. Add water until 70% to 100 % of the water holding capacity is reached. Supply evaporated water periodically during the whole test duration as needed.

## Test Conditions

The test conditions should approximate those conditions necessary for normal growth for the species and varieties tested.

The following conditions are generally recommended for greenhouse testing:

- temperature: 22°C ± 10°C
- humidity: 70 % ± 25%
- photoperiod: minimum 16-hour light
- light intensity: 350 ± 50 µE/m<sup>2</sup> /s

The Degraded Film Sample (19340234) and Blank must be kept under the same environmental conditions; however, adequate measures should be taken to prevent cross exposure.

The texture of the compost used is sandy with organic carbon 3.20 % and pH 7.63 and salt content as electrical conductivity is 3.25 (mS/cm).

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|------------------------------------|----------------------------|--------------------------------|
| <b>Report No.:</b> MUM/001971/2025 | <b>Sample No:</b> 19340234 | <b>Report Date:</b> 30/01/2026 |
|------------------------------------|----------------------------|--------------------------------|

**Table 3: Germination Rate and Biomass of *Brassica sinapis alba* and *Triticum aestivum* seeds after 21days.**

|              | Plant species                | Dose | Germination Rate (%) | Biomass (g) | Shoot Length (cm) | Root Length (cm) |
|--------------|------------------------------|------|----------------------|-------------|-------------------|------------------|
| <b>Blank</b> | <i>Brassica sinapis alba</i> | 25%  | 100                  | 0.0651      | 10.1              | 5.1              |
|              |                              | 25%  | 99                   | 0.0762      | 11.0              | 3.1              |
|              |                              | 25%  | 100                  | 0.0698      | 11.3              | 4.8              |
|              |                              | 50%  | 99                   | 0.0635      | 10.3              | 4.6              |
|              |                              | 50%  | 99                   | 0.0682      | 10.4              | 3.8              |
|              |                              | 50%  | 98                   | 0.0675      | 11.9              | 4.1              |
|              |                              |      |                      |             |                   |                  |
|              | <i>Triticum aestivum</i>     | 25%  | 100                  | 0.1567      | 13.9              | 7.3              |
|              |                              | 25%  | 100                  | 0.1653      | 14.1              | 5.8              |
|              |                              | 25%  | 99                   | 0.1632      | 14.6              | 6.0              |
|              |                              | 50%  | 99                   | 0.1576      | 14.2              | 5.8              |
|              |                              | 50%  | 100                  | 0.1692      | 13.8              | 5.1              |
|              |                              | 50%  | 100                  | 0.1639      | 14.0              | 5.5              |

|                                        | Plant species                | Dose | Germination Rate (%) | Biomass (g) | Shoot Length (cm) | Root Length (cm) |
|----------------------------------------|------------------------------|------|----------------------|-------------|-------------------|------------------|
| <b>Degraded Film Sample (19340234)</b> | <i>Brassica sinapis alba</i> | 25%  | 98                   | 0.0639      | 9.7               | 5.1              |
|                                        |                              | 25%  | 97                   | 0.0783      | 9.6               | 3.6              |
|                                        |                              | 25%  | 98                   | 0.0619      | 10.0              | 4.2              |
|                                        |                              | 50%  | 98                   | 0.0593      | 10.5              | 4.1              |
|                                        |                              | 50%  | 98                   | 0.0685      | 9.7               | 3.7              |
|                                        |                              | 50%  | 98                   | 0.0635      | 9.9               | 4.0              |
|                                        |                              |      |                      |             |                   |                  |
|                                        | <i>Triticum aestivum</i>     | 25%  | 97                   | 0.1532      | 11.1              | 6.1              |
|                                        |                              | 25%  | 98                   | 0.1538      | 12.8              | 5.8              |
|                                        |                              | 25%  | 98                   | 0.1597      | 13.1              | 6.3              |
|                                        |                              | 50%  | 97                   | 0.1519      | 12.7              | 5.7              |
|                                        |                              | 50%  | 98                   | 0.1506      | 11.6              | 5.4              |
|                                        |                              | 50%  | 98                   | 0.1564      | 11.9              | 5.6              |

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| <b>Report No.:</b> MUM/001971/2025 | <b>Sample No:</b> 19340234 | <b>Report Date:</b> 30/01/2026 |
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**Table 4: Average germination Rate and Biomass of *Brassica sinapis alba* and *Triticum aestivum* seeds after 21 days.**

|              | Plant species                | Dose | Germination Rate (%) | Dry biomass(g) | Shoot Length (cm) | Root Length (cm) |
|--------------|------------------------------|------|----------------------|----------------|-------------------|------------------|
| <b>Blank</b> | <i>Brassica sinapis alba</i> | 25%  | 100                  | 0.0704         | 10.8              | 4.3              |
|              |                              | 50%  | 99                   | 0.0664         | 10.9              | 4.2              |
|              |                              |      |                      |                |                   |                  |
|              | <i>Triticum aestivum</i>     | 25%  | 100                  | 0.1617         | 14.2              | 6.4              |
|              |                              | 50%  | 100                  | 0.1636         | 14.0              | 5.5              |

|                                        | Plant species                | Dose | Germination Rate (%) | Dry Biomass(g) | Shoot Length (cm) | Root Length (cm) |
|----------------------------------------|------------------------------|------|----------------------|----------------|-------------------|------------------|
| <b>Degraded Film Sample (19340234)</b> | <i>Brassica sinapis alba</i> | 25%  | 98                   | 0.0680         | 9.8               | 4.3              |
|                                        |                              | 50%  | 98                   | 0.0638         | 10.0              | 3.9              |
|                                        |                              |      |                      |                |                   |                  |
|                                        | <i>Triticum aestivum</i>     | 25%  | 98                   | 0.1556         | 12.3              | 6.1              |
|                                        |                              | 50%  | 98                   | 0.1530         | 12.1              | 5.6              |

|                                        | Plant species                | Dose | Germination Rate (%) as compared with Blank | Dry biomass (%) as compared with Blank |
|----------------------------------------|------------------------------|------|---------------------------------------------|----------------------------------------|
| <b>Degraded Film Sample (19340234)</b> | <i>Brassica sinapis alba</i> | 25%  | 98                                          | 97                                     |
|                                        |                              | 50%  | 99                                          | 96                                     |
|                                        |                              |      |                                             |                                        |
|                                        | <i>Triticum aestivum</i>     | 25%  | 98                                          | 96                                     |
|                                        |                              | 50%  | 98                                          | 94                                     |

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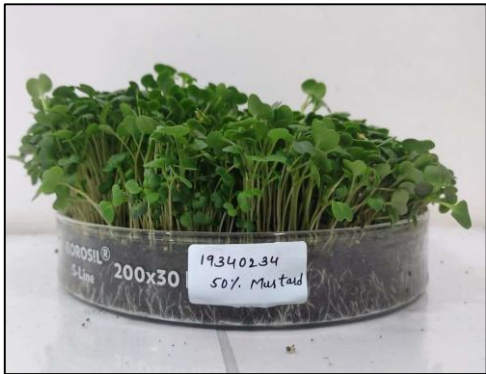
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| <b>Report No.:</b> MUM/001971/2025 | <b>Sample No:</b> 19340234 | <b>Report Date:</b> 30/01/2026 |
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|                                                                                     |                                                                                       |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|    |    |
| <b>Blank 25%</b>                                                                    | <b>Blank 50%</b>                                                                      |
|  |  |
| <b>Degraded Film Sample (19340234) 25%</b>                                          | <b>Degraded Film Sample (19340234) 50%</b>                                            |

**Figure 2: Effect of Compost Degraded Film Sample (19340234) on *Triticum aestivum* growth**

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| <b>Report No.:</b> MUM/001971/2025 | <b>Sample No:</b> 19340234 | <b>Report Date:</b> 30/01/2026 |
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|                                                                                     |                                                                                      |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|    |    |
| <b>Blank 25%</b>                                                                    | <b>Blank 50%</b>                                                                     |
|  |  |
| <b>Degraded Film Sample (19340234) 25%</b>                                          | <b>Degraded Film Sample (19340234) 50%</b>                                           |

**Figure 3: Effect of compost Degraded Film Sample (19340234) on *Brassica sinapis alba* growth**

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| <b>Report No.:</b> MUM/001971/2025 | <b>Sample No:</b> 19340234 | <b>Report Date:</b> 30/01/2026 |
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## ACUTE EARTHWORM TEST ACCORDING TO OECD 207

### Principle

*Eisenia fetida* species of earthworm are used for earthworm toxicity testing. The artificial test involves keeping earthworms in samples of a precisely defined artificial soil to which a range of concentrations of the test substance has been applied. Mortality is assessed 14 days after application. Control is used to assure that effects observed are associated with or attributed only to the test substance exposure. The earthworm is brought from Vermicomposting beds. The mean survival of all controls should be more than 90 percent at the end of the test. The toxicity of test soils or the bioavailability of contaminants are assessed during the continuous exposure of terrestrial organisms.

Soils tested may be the following:

1. soils collected from potentially contaminated sites,
2. soils collected from reference sites,
3. artificial soil (see Annex A2) spiked with compounds,
4. site soil spiked with compounds,
5. reference soil spiked with compounds,
6. site soil diluted with artificial soil,
7. site soil diluted with reference soil, or
8. reference soil diluted with artificial soil.

A negative control of artificial or reference soil is used for the following:

1. to yield a measure of the acceptability of the test;
2. to provide evidence of the health and relative quality of the test organisms.
3. to determine the suitability of test conditions, food, and handling procedures; and
4. to provide a basis for interpreting data obtained from the test soils.

Specified data are obtained to determine the toxic effects on survival.

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| <b>Report No.:</b> MUM/001971/2025 | <b>Sample No:</b> 19340234 | <b>Report Date:</b> 30/01/2026 |
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**Validity:**

The mortality in the controls should not exceed 10 percent at the end of either test

**Earthworm Species used:** *Eisenia fetida*

**Preparation of compost:**

After completion of 180 days, test soil is sieved through a standard 10 mm sieve, Separate the sieved material further by again sieving it through a standard 2 mm sieve. Compost obtained is used for the test. The mixture prepared a concentration of 25% and 50% (m/m or v/v) of the sample compost.

For each test, 700 g of the test medium is placed into each glass container, and ten earthworms are placed on the test medium surface.

The containers are covered with perforated plastic film to prevent the test medium from drying and kept under the test conditions for 14 days. The test duration is 14 days (assessment of mortality at 7 and 14 days), and the test temperature is  $22^{\circ} \pm 3^{\circ}\text{C}$ . Testing is done in continuous light (to ensure that worms remain in the test medium throughout duration of test). The mortality and biomass changes is assessed at 7 and 14 days. emptying test medium onto a glass tray or plate, sorting worms from the medium and testing their reaction to a mechanical stimulus at the front end. After the 7-day assessment worms and medium are replaced in the test container. The behavioral or pathological symptoms are studies and noted.

The earthworm acute results are as follows:

**Table 5: pH, Temperature and Moisture content of Test soil before and after study.**

| Concentration                   | Test Initiation Moisture content (%) | Test Initiation pH | Test Initiation Temperature °C | Test Termination Moisture content (%) | Test Termination pH | Test Termination Temperature °C |
|---------------------------------|--------------------------------------|--------------------|--------------------------------|---------------------------------------|---------------------|---------------------------------|
| Blank                           | 37.44                                | 7.18               | 22.3                           | 36.14                                 | 7.14                | 22.2                            |
| Degraded Film Sample (19340234) | 38.34                                | 7.30               | 22.7                           | 37.26                                 | 7.20                | 22.4                            |

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| <b>Report No.:</b> MUM/001971/2025 | <b>Sample No:</b> 19340234 | <b>Report Date:</b> 30/01/2026 |
|------------------------------------|----------------------------|--------------------------------|

**Table 6: Average weight of earthworms before and after study and difference in weight.**

| Particulars                             |      | Average Initial weight (g) | Average Final weight (g) | Mean difference in weight (g) | Percentage weight |
|-----------------------------------------|------|----------------------------|--------------------------|-------------------------------|-------------------|
| Blank                                   | 25 % | 0.3477                     | 0.3934                   | 0.0457                        | 13.13             |
|                                         | 50 % | 0.3522                     | 0.4021                   | 0.0499                        | 14.17             |
| Degraded Film Sample (19340234) compost | 25 % | 0.3709                     | 0.4094                   | 0.0385                        | 10.37             |
|                                         | 50 % | 0.3614                     | 0.4045                   | 0.0431                        | 11.93             |

The average weight of earthworms increased as compared to control, no weight loss was observed at the end of the test duration.

**Table 7: Mortality rate of earthworms after study**

| Particulars                             |      | Mortality (%) |
|-----------------------------------------|------|---------------|
| Blank                                   | 25 % | 0             |
|                                         | 50 % | 0             |
| Degraded Film Sample (19340234) compost | 25 % | 0             |
|                                         | 50 % | 0             |

The mortality rate was found to be 0%.

**Table 8: Percent Survival rate**

| Particulars                             |                                   | 7 days | 14 days |
|-----------------------------------------|-----------------------------------|--------|---------|
| Blank                                   | Average no. of earthworm survived | 40     | 40      |
| Degraded Film Sample (19340234) compost | Average no. of earthworm survived | 40     | 40      |
|                                         | Survival rate (%)                 | 100    | 100     |

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| <b>Report No.:</b> MUM/001971/2025 | <b>Sample No:</b> 19340234 | <b>Report Date:</b> 30/01/2026 |
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**Figure: 4 Earthworm before exposing it to the compost containing residue of Degraded Film Sample (19340234)**



**Figure: 5 Earthworm after exposing it to the compost containing residue of Degraded Film Sample (19340234)**

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| <b>Report No.:</b> MUM/001971/2025 | <b>Sample No:</b> 19340234 | <b>Report Date:</b> 30/01/2026 |
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**Table 9: Chemical characteristics and Heavy metal analysis of residue collected after biodegradation**

| <b>Heavy Metals (Parameters)</b> | <b>Unit</b> | <b>Compost</b> |
|----------------------------------|-------------|----------------|
| pH                               | -           | 7.30           |
| Magnesium (Mg)                   | mg/kg       | 3221.30        |
| Calcium (Ca)                     |             | 7679.36        |
| Phosphorus (P)                   |             | 1492.69        |
| Manganese (Mn)                   |             | 306.44         |
| Zinc                             |             | 21.99          |
| Copper                           |             | 15.21          |
| Nickel                           |             | 4.37           |
| Lead                             |             | <0.5           |
| Mercury                          |             | <0.5           |
| Molybdenum                       |             | <0.5           |
| Arsenic                          |             | <0.5           |
| Selenium                         |             | <0.5           |
| Cadmium                          |             | <0.5           |
| Cobalt                           |             | <0.5           |

**Reviewed by**

*Saranya*

**Saranya Panthavoor**  
**Environment Chemist**

**Authorized Signatory**



**Jayashree Acharya**  
**Manager Operations - Biosciences**

----- **End of Report** -----

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