

# **END-OF-WASTE CRITERIA FOR PLASTIC FLAKE RECYCLATE**

## **SINGLE CASE DECISION FOR GREEN GENERATION IRELAND LTD.**

This document sets out end-of-waste criteria for  
plastic flake recyclate,  
produced by Green Generation Ireland Ltd.

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Decision establishing End-of-Waste Criteria  
under  
Regulation 28 of the European Union (Waste Directive) Regulations 2011-2020  
for  
plastic flake recyclate  
produced by Green Generation Ireland Ltd.,  
6 Fitzwilliam Place,  
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Decision Date: 17<sup>th</sup> May 2022

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# 1 Introduction

This introduction is not part of the decision and does not purport to be a legal interpretation of the decision.

Article 6 of the Waste Framework Directive<sup>1</sup>, 2008, as amended was transposed into Irish law by the European Union (Waste Directive) Regulations 2011-2020<sup>2</sup> (hereafter referred to as the Regulations). Article 6 (End-of-waste status) of the Waste Framework Directive 2008/98/EC<sup>1</sup> as amended by Directive 2018/851, was transposed into Irish law via Part 3 Regulation 28 (End-of-waste) of the European Union (Waste Directive) Regulations 2011-2020. Regulation 28 of the Regulations assign responsibility to the Environmental Protection Agency to make certain decisions regarding end-of-waste.

End-of-waste is a means of determining the point at which, for the purposes of waste regulation, a material need no longer be classified as waste after it has undergone a recovery operation, including recycling, and complies with specific criteria developed in accordance with the specific conditions outlined in the Regulations. Compliance with the end-of-waste criteria, as outlined in this document, is sufficient to ensure that plastic flake recyclate may be used as a secondary material without the need for waste regulation or control. The plastic flake recyclate may be used as a raw material in the manufacture of plastic products. The primary plastic products manufactured from the plastic flake recyclate are non-food grade bulky items.

These end-of-waste criteria may be reviewed and updated by the Agency at any stage based on the experience of practical applications, technological developments or legislative amendments. The Agency reserves the right to depart from the position outlined and to take appropriate action to avoid overall adverse environmental or human health impacts. If at any time the European Commission publishes generally applicable end-of-waste criteria for plastic flake recyclate, those European criteria may supersede these criteria and the Agency may withdraw this decision.

These end-of-waste criteria are applicable in Ireland. End-of-waste compliant material can be placed on the export market where:

- approval has been attained from the destination country's relevant competent authority that this authority recognises the recovered material as a non-waste prior to the material being placed on that market;
- the National Transfrontier Shipments Office has been contacted and confirmation has been attained that they recognise this approval from another jurisdiction prior to the material being placed on that market; and
- record of the above approval(s) and confirmations are maintained and available for inspection at the Producer's facility.

The material shall become waste again and subject to waste management controls if:

- any critical data in the approved batch record for the finished product is found to be false and the finished product does not meet the required finished product specification;

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<sup>1</sup> Waste Framework Directive - Directive 2008/98/EC on waste (WFD).

<sup>2</sup> Waste Directive Regulations - European Union (Waste Directive) Regulations 2011 – 2020

- the finished product is discarded or there is an intention or requirement to discard, for example if it is disposed of;
- it is stored for a period greater than may be specified in the end-of-waste criteria;
- it is mixed with other waste materials;
- the producer cannot provide documented evidence of compliance with these end-of-waste criteria;
- the producer cannot provide evidence that there is a sustained active market for the finished product;
- the producer cannot provide evidence that the requirements have been satisfied for the export market on which the finished produced has been placed; or
- if there is a requirement to recall the finished product from the market.

This decision document is for the purposes of Regulation 28 of the European Union (Waste Directive) Regulations 2011-2020 only and nothing in this document shall be construed as negating Green Generation Ireland Ltd. or users' statutory obligations or requirements under any other authorisations (including planning permission), enactments or regulations.

The decision sets out in detail the end-of-waste criteria for the production of plastic flake recyclate by Green Generation Ireland Ltd.

## 2 Decision

The Agency has decided, in accordance with Regulation 28(3) of the European Union (Waste Directive) Regulations 2011-2020, that the plastic flake recyclate (as defined in Appendix 1) the subject of the application made by Green Generation Ireland Ltd. on the 24<sup>th</sup> February 2021, and produced at an appropriately authorised waste facility, will cease to be waste if it complies with the end-of-waste criteria set out in this document.

The Agency is satisfied, based on:

- the information provided by the applicant, including additional information;
- the fact that the recovered material will serve a useful purpose in continuing to replace the use of the primary raw material in plastic production;
- the fact that the recovered material will be required to meet the customer's product specification in order to fulfil the same function as the primary raw material;
- the fact that the recovered material will have an associated REACH registration and is required to meet all current product requirements prior to placing the material on the market;
- National Standards Authority of Ireland (NSAI) Standards:
  - I.S. EN 15343: Plastics - Recycled plastics - Recycling traceability and assessment of conformity;
  - I.S. EN 15347: Plastics - Recycled plastics - Characterisation of plastics wastes;

- SR CEN/TS 16010: Plastics - Recycled plastics - Sampling procedures for testing plastics waste and recyclates;
  - SR CEN/TS 16011: Plastics - Recycled plastics - Sample preparation;
  - SR CEN/TS 17627: Plastics - Recycled plastics - Determination of solid contaminants content;
  - I.S. EN ISO 15512: Plastics- Determination of water content testing; and
  - I.S. EN 1186-1: Materials and Articles in contact with foodstuffs - Plastics - Guide to the selection of condition and test methods for overall migration.
- The Agency's June 2020 Draft Guidance on End-of-Waste;
  - Joint Research Centre, 2009 Final Report on "End-of-waste criteria"; and
  - Joint Research Council, 2014 Technical Report on "End-of-waste criteria for waste plastic for conversion",

that, subject to compliance with the requirements of this decision, the plastic flake recycle conforms with the requirements of Regulation 28(1)(a) & 28(2) of the Regulations and its use as raw material in the manufacture of plastic products will not lead to overall adverse environmental and human health impacts, if used in a regulated production environment the outputs of which meet the requirements of the relevant product legislation.

## 3 Materials Handling & Control

### 3.1 Waste Inputs

3.1.1 Inputs shall be restricted to waste plastics as per the List of Waste code:

- Plastic packaging 15 01 02.

3.1.2 Inputs shall be restricted to packaging from waste food.

3.1.3 The following wastes shall not be used as input:

- Bio-waste, health care waste, and used products of personal hygiene;
- Waste originated from electrical and electronic equipment waste (WEEE), construction and demolition, and end of-life vehicles (ELV); and
- Hazardous waste.

3.1.4 Inputs shall meet the incoming waste acceptance criteria of the waste authorisation for the facility in which the material is produced.

3.1.5 Each load of waste input shall be assigned a unique identifier.

3.1.6 Where non-conforming waste is delivered, it shall be immediately moved to a designated quarantine area and stored pending consignment to the supplier or an appropriately authorised waste management facility.

## 3.2 Recovery Process

- 3.2.1 All treatments/recovery processes needed to prepare the waste plastic for direct input in a free flowing form (plastic flake recyclate) for manufacture of plastic products, such as inspection, shredding/grinding, metals removal, washing and drying shall have been completed.
- 3.2.2 All recovery processes which are required in order to obtain the plastic flake recyclate shall be completed in accordance with waste regulatory requirements, including requirements relating to compliance with the waste authorisation for the facility in which the material is produced.
- 3.2.3 Waste plastic streams used as input shall, once received by the producer or importer, be kept permanently separate from contact with any other waste, including other waste plastic grades.

## 3.3 Quality of plastic flake recyclate

- 3.3.1 The plastic flake recyclate shall comply with the relevant product technical standard(s), legislative requirements and customer specification for direct use as a raw material in the production of plastic substances or objects by re-melting in plastic manufacturing facilities.

As regulations are subject to amendment and replacement, it is the producer and user's responsibility to ensure that current regulations are referred to. As Standards are subject to regular review, it is the producer and user's responsibility to ensure that the latest version is referred to.

- 3.3.2 The relevant product technical standards for recycled plastics include:
  - IS EN 15343: Plastics - Recycled plastics - Recycling traceability and assessment of conformity; and
  - IS EN 15347: Plastics - Recycled plastics - Characterisation of plastics wastes.
- 3.3.3 Each batch of the plastic flake recyclate shall be assigned a unique identifier. The plastic flake recyclate shall be tested, using an accredited test method, where available, and comply with the criteria set out in *Appendix 2* or other customer specifications.
- 3.3.4 Testing of the plastic flake recyclate shall be carried out in accordance with relevant technical standards, including:
  - SR CEN/TS 16010: Plastics - Recycled plastics - Sampling procedures for testing plastics waste and recyclates;
  - SR CEN/TS 16011: Plastics - Recycled plastics - Sample preparation;
  - SR CEN/TS 17627: Plastics - Recycled plastics - Determination of solid contaminants content;
  - I.S. EN ISO 15512: Plastics- Determination of water content testing; and

- I.S. EN 1186-1: Materials and Articles in contact with foodstuffs - Plastics - Guide to the selection of condition and test methods for overall migration.

3.3.5 The plastic flake recyclate shall:

- i. comply with relevant provisions of the Classification, Labelling and Packaging (CLP)<sup>3</sup> Regulation;
- ii. comply with relevant provisions of the REACH Regulation<sup>4</sup>; and
- iii. comply with relevant provisions of the Persistent Organic Pollutants (POPs) Regulation<sup>5</sup>.

3.3.6 Waste plastic shall not contain leachable fluids such as oil, solvents, glues, paint, aqueous and/or fatty foodstuffs, that can be detected by visual inspection and olfactory test, except for negligible amounts that will not lead to any dripping.

3.3.7 The plastic flake recyclate shall not be stored for a period greater than 12 months. Products that exceed the time limit for storage shall be deemed to be waste.

## 3.4 Quality Management System

3.4.1 The producer shall, introduce, maintain and implement a quality management system to demonstrate compliance with the end-of-waste criteria.

3.4.2 The quality management system shall be certified by a body accredited by the Irish National Accreditation Board.

## 4 Demonstrating compliance with the decision establishing end-of-waste criteria

Green Generation Ireland Ltd. shall demonstrate compliance with the requirements of this decision and if unable to do so the plastic flake recyclate will be considered a waste.

### 4.1 Records Management

To demonstrate compliance with these end-of-waste criteria, the following records of production, testing and use, sale or supply of the plastic flake recyclate shall be maintained;

- 4.1.1 The quality management system, set out in *Criterion 3.4*, shall include a set of documented procedures concerning each of the following aspects:
  - i. visual inspection of the input waste plastic to establish the content and nature of any contaminant components. The procedure shall include:
    - a) the steps involved in the visual inspection of the input waste;

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<sup>3</sup> Classification, Labelling and Packaging - Regulation (EC) No 1272/2008 (CLP)

<sup>4</sup> Registration, Evaluation, Authorisation and Restriction of Chemicals - Regulation 1907/2006/EC (REACH)

<sup>5</sup> Persistent Organic Pollutants - Regulation 850/2004/EC (POPs)



- b) the process for determining whether the washing step is required within the recovery process;
  - c) the process for determining whether material is non-confirming; and
  - d) visual inspection frequency;
- ii. sampling and testing/analysis of the output material (plastic flake recyclate) to establish the content and nature of any contaminant components and monitor the quality of the output resulting from the recovery operation. The procedure shall include:
    - a) the types of testing for the product;
    - b) the process for determining sampling frequencies; and
    - c) sampling and testing frequency;
  - iii. monitoring of the recovery processes and techniques;
  - iv. acceptance control of waste used as input for the recovery operation;
  - v. feedback from customers concerning the product quality;
  - vi. record keeping of the results of monitoring conducted under points (i) to (v);
  - vii. review and improvement of the quality management system;
  - viii. training of staff;
  - ix. specific monitoring requirements set out for each criterion;
  - x. compliance with the relevant product technical standards, legislative requirements and customer specifications;
  - xi. use, control, calibration and maintenance of inspection, measuring and test equipment. Equipment shall be uniquely identified; and
  - xii. identification and management of non-conforming plastic flake recyclate.

4.1.2 Training records shall be maintained which demonstrate that all relevant persons have been appropriately trained in all aspects of these criteria, including the relevant product technical standard(s), legislative requirements and customer specifications.

4.1.3 In order to demonstrate that the plastic flake recyclate does not pose a risk to the environment or human health, the producer shall make available;

- i. the results of any testing/analysis carried out;
- ii. interpretative reports including laboratory results;
- iii. details of the test methods used;
- iv. details of accreditation of the test method;
- v. details of accreditation of laboratory, where appropriate;
- vi. independent audit reports demonstrating the outcome of any independent audit of the plastics processing shall be made available for inspection; and
- vii. if contaminants above the allowable limits are identified, details of the actions taken to correctly dispose of the non-conforming load(s) and corrective action(s) taken prior to dispatch and to prevent any such recurrence.

- 4.1.4 A register of non-conforming products for these criteria shall be maintained. The register shall contain information as to the reasons for the non-conformance and the manner in which the non-conformance was rectified. The register shall also include information on the outlet for the non-conforming product, for example whether it is re-introduced to the start of the process, disposed of, or recovered as waste.
- 4.1.5 A 'statement of conformity' shall be completed for each consignment of plastic flake recyclate leaving the facility or being used for the first time. The statement of conformity shall;
- i. include the producer of the plastic flake recyclate details;
  - ii. state the customer's name and contact details;
  - iii. state the relevant provisions of the appropriate product technical standard(s) and customer specifications to which the plastic flake recyclate has been complied with. Details of the name of the specific standard(s) and specification(s) which are being applied are to be included;
  - iv. specify the content of non-plastic components, in percentage points of moisture-free weight ( $\leq 2\%$ );
  - v. state the quantity of the consignment in kg;
  - vi. include a product description and the unique identifier for each batch included in the consignment;
  - vii. include a statement that the consignment meets the criteria referred to in this decision (End-of-waste Decision ART28-0061);
  - viii. state that the producer of the plastic applies a management system complying with the requirements of this decision (End-of-waste Decision ART28-0061), and which has been verified by an accredited conformity assessment body or by an environmental verifier or, where plastic which has ceased to be waste is imported into the customs territory of the Union, by an independent external verifier;
  - ix. include a statement that: *'The material in this consignment is not classified as hazardous, following the definitions in Article 3 and Annex I of Regulation EC/1272/2008 (CLP), and meets the prescriptions on commercialisation of substances of very high concern (SVHC) laid out in Article 56 of Regulation EC/1907/2006 REACH, and the restriction of the commercialisation of persistent organic pollutants laid out in Article 3 of Regulation 50/2004/EC (POPs)'*;
  - x. include a section on the intended use with the statement that: *'The material in this consignment is intended exclusively for the manufacture of plastic products'*;
  - xi. state any restrictions on use;
  - xii. state the date of supply;
  - xiii. be issued in electronic form;

- xiv. be issued prior to the plastic flake recyclate leaving the facility or being used for the first time;
  - xv. be accompanied by or contain a link to an electronic copy of the safety data sheet for the plastic flake recyclate; and
  - xvi. shall be signed and dated by the producer/importer of the plastic certifying that the above information is complete and correct.
- 4.1.6 The producer or the importer shall transmit the statement of conformity to the next holder of the consignment. They shall retain a copy of the statement of conformity for at least one year after its date of issue.
- 4.1.7 The producer shall maintain documentary evidence, for assessment by the relevant competent authority which demonstrates compliance, where appropriate, with the provisions of the POPs Regulation, CLP Regulation, REACH Regulation and Food Contact Regulation<sup>6</sup>, as required. The producer shall ensure these matters are addressed in customer supply contracts.
- 4.1.8 All records including controls, inspections and training shall be maintained for a minimum of 5 years.
- 4.1.9 Records including any electronic media shall be stored and maintained in a manner that they are readily retrievable and protected against damage, deterioration or loss. Records shall be legible, identifiable and traceable to the process or product. All reviews and revisions of procedures shall be included in an annex to the most up to date version of that procedure.
- 4.1.10 The producer shall, upon request, provide competent authorities including Agency, the relevant local authorities, the Health and Safety Authority (HSA), the National Transfrontier Shipments of Waste Office, Market Surveillance Authority and the Competent National Authority access to the quality management system, including statements of conformity.

## 5 Use and Restrictions on Use

Users of the plastic flake recyclate that are produced in compliance with these criteria shall take full account of any environmental impact resulting from such use.

To comply with these criteria, the following restrictions apply:

- The plastic flake recyclate will not be used directly in the manufacture of food grade plastics;
- The plastic flake recyclate will be used in the manufacture of bulky items only; and
- The plastic flake recyclate is limited to sale and use in the Republic of Ireland and in any other destination country where approval has been attained from the country's relevant

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<sup>6</sup> European Union (Plastics and other materials) (Contact with food) Regulations 2017, as amended.

competent authority that the recovered material is recognised by the competent authority in that jurisdiction as a non-waste prior to the material being placed on that market.'

These criteria do not affect the obligation of the producer to hold and comply with a waste collection permit, certificate of registration, waste facility permit or waste/industrial emissions licence or any other National or European legislation which may apply when transporting, storing or processing waste. These criteria do not affect permitting or any other legal requirements that do not depend on the status of the material as a waste.

## Appendix 1: Glossary of Terms

Applicant	Green Generation Ireland Ltd. of 6 Fitzwilliam Place, Dublin, D02XE61.
Authorised waste facility	A facility which has been granted a waste authorisation in the form of an Industrial Emissions licence, a waste licence, a waste facility permit or a certificate of registration.
Batch	Quantity of material regarded as a single unit, and having a unique reference.
Bio-waste	Biodegradable garden and park waste, food and kitchen waste from households, offices, restaurants, wholesale, canteens, caterers and retail premises and comparable waste from food processing plants.
CLP Regulation	Classification, Labelling and Packaging: Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No. 1907/2006
Consignment	Each load of plastic flake recyclate that leaves the facility or being used for the first time.
Food Contact Regulation	European Union (Plastics and other materials) (Contact with food) Regulations 2017, as amended.
Hazardous Waste	As defined in the Waste Management Act 1996, as amended.
ISO Standard	Standards published by the International Organisation for Standardisation.
Non-conforming product	A product that does not meet the requirements of the product technical standard(s), legislative requirements or these end-of-waste criteria, as appropriate.
Non-plastic component	Any material that is not plastic but is present in waste plastic before recycling.
Producer	Green Generation Ireland Ltd. of 6 Fitzwilliam Place, Dublin, D02XE61.
Plastic Flake Recyclate	Plastic flake recyclate that meets these end-of-waste criteria.
POPs Regulation	Regulation (EC) No. 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC, as amended by Council Regulation (EC) No. 1195/2006, Council Regulation (EC) No. 172/2007, Commission Regulation (EC) No. 323/2007 6 and Commission Regulation (EC) No. 304/2009.
REACH Regulation	Regulation (EC) No. 1907/2006/EC concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH),

	establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.
Recovery	As defined in the Waste Management Act 1996, as amended.
Recycling	As defined in the Waste Management Act 1996, as amended.
Statement of Conformity	A statement/declaration that the plastic flake recyclate conforms to end-of-waste criteria, product standards and specifications, it includes details of restrictions on use of the plastic flake recyclate.
User	User means manufacturers, supply companies, contractors and all those organisations or individuals responsible for the end use of the plastic flake recyclate.
Waste	As defined in the Waste Management Act 1996, as amended.

## Appendix 2: Specifications (Output Material)

The producer must comply with criteria set out in this document, including specifications below and/ or any other customer specifications, for the output material (plastic flake recyclate) at the time it is produced:

Parameter	Specification <sup>Note 1</sup>	Frequency <sup>Note 2</sup>
Contaminants	≤2% of moisture-free weight	Monthly
Flake Size	Nominal size 50mm x 50mm, Maximum size of 200mm X 200mm. Maximum thickness of 2mm	Monthly
Moisture content	Residual moisture content	Monthly
Bulk density testing	100kgs/m <sup>3</sup> +/-50kgs/m <sup>3</sup>	Monthly
Colour	Mixed colours acceptable	Monthly
Shape/ Form	In flake form, folds acceptable	Monthly
Leachability	No detectable leachate	Monthly

Note 1: It is the responsibility of the producer and users to ensure that testing is carried out in accordance with relevant technical standards where applicable, and that the most up to date version is being considered.

Note 2: Minimum sampling and analysis frequency.