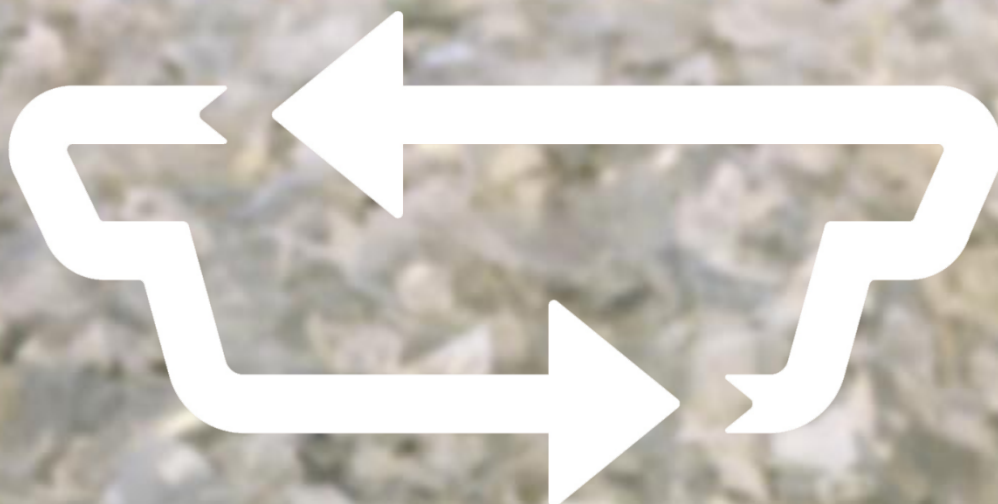


RETRAY



# RETRAY APPROVAL PROCEDURE

ED. DECEMBER 2023

## THERMOFORMED PET PACKAGING RECYCLERS



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Foundation of State Competition by the Spanish Ministerial Order of 02/21/2017; registration number 1871. Recognized the general interest of its purposes. Acceptance of the Spanish Law 49/2002 on the tax regime of non-profit entities.

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## INTRODUCTION

The ECOSENSE FOUNDATION is a non-profit organization that promotes the use and recycling of thermoformed PET food packaging in line with the commitment to environmental care and initiatives related to circular economy policies.



**RETRAY** IS A CERTIFICATION SCHEME OF THE ECOSENSE FOUNDATION (henceforth, **the Foundation**) TO CONSOLIDATE A CIRCULAR ECONOMY MODEL IN THE VALUE CHAIN OF THERMOFORMED PET PACKAGING BY MEANS OF THE QUANTIFICATION OF RECYCLED MATERIAL CONTENT AND THE VERIFICATION OF ITS RECYCLABILITY.

This certification recognizes and disseminates the work of those companies that introduce, as a secondary raw material in their production processes of manufacture or use of sheet and/or thermoforming, both monolayer and multilayer, colourless transparent recycled PET from recycling processes in the tray-to-tray circuit approved by the Foundation, along with recycled PET from other sources.

RETRAY has two aspects: as a **process certification (RETRAY Process)** and as a **product certification (RETRAY product)** and, therefore, the same company can obtain more than one certificate, depending on the number of facilities and products it wants to certify. Specifically:

1. The **RETRAY Process** is given to the manufacturing processes of sheet, sheet + thermoformed body, thermoformed body or packaging.
2. **The RETRAY Product** certification is granted to specific products made of PET sheet, rigid thermoformed bodies (base, lid) or packaging manufactured in the facilities that have the previously detailed processes already certified.

The **objectives** of the RETRAY Process and RETRAY Product certifications are:

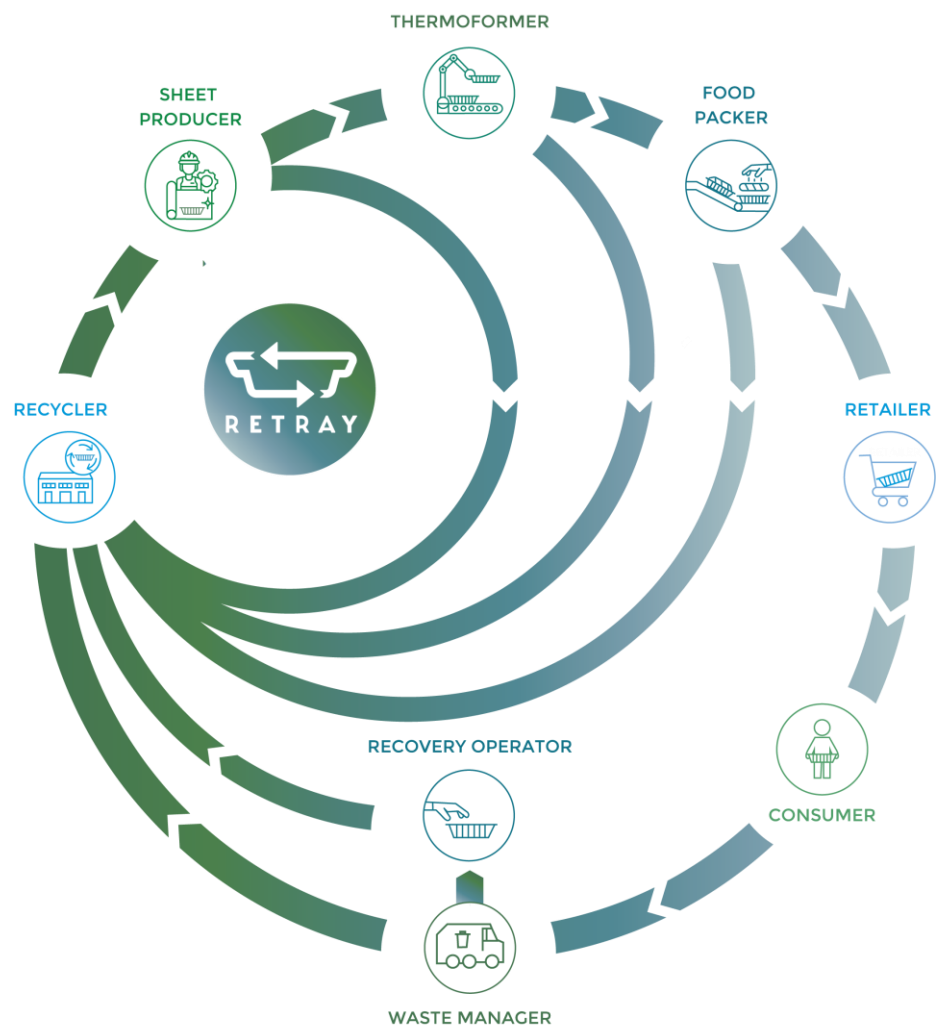
1. Increase the transparency of the PET sheet and PET thermoformed packaging industry by ensuring traceability in the reincorporation of waste generated throughout the entire value chain, from its manufacture (post-industrial or post-industrial waste) to its use by end consumers (post-consumer waste).

2. Value the environmental performance of companies that ensure the recyclability of their products through eco-design and incorporating colourless transparent recycled raw materials from the tray-to-tray circuit into their production chain, along with recycled PET from other sources.
3. Contribute to the objectives established in the European legislative framework on packaging and plastic packaging waste and its transposition in the different member countries, especially regarding the promotion of a circular economy for plastics, the prevention of waste generation and the efficient management of waste.
4. Close the economic flow by maintaining the material value of PET sheets and packaging, by reintroducing them into the production circuit as secondary raw materials, and by reducing the use of raw materials from non-renewable resources.
5. Provide a label that allows both consumers and agents throughout the value chain to identify those suppliers that meet the certification requirements in their processes and products.

The **recyclers of sheets and thermoformed PET containers** who want to participate in the RETRAY certification scheme by recycling both post-industrial waste from companies in the value chain of their manufacture and use, as well as post-consumer waste, from the selective collection of municipal waste, **must be approved by the Foundation based on the provisions of this Procedure.**

**PET trays recovery companies** who want to participate in the RETRAY certification scheme by selecting post-consumer waste for subsequent shipment to approved PET tray recyclers, as described in the previous paragraph, **must be approved by the Foundation complying with the requirements established in the Approval Procedure for Recovery Companies in force.**

**Waste management companies of thermoformed PET packaging, both of post-industrial and post-consumer origin, who want to participate in the RETRAY certification scheme by collecting, separating (if applicable) and transporting this waste for shipment to PET thermoforms packaging recyclers approved for the scheme, **must be approved by the Foundation complying with the requirements established in the Approval Procedure for Waste Management Companies in force.****



## 1. PURPOSE

The goal of this procedure is to establish the necessary requirements which Approved Recyclers must fulfil in order to participate in the RETRAY certification process established by the Foundation.

The Approved Recycler's compliance with such requirements will enable the Foundation to grant it usage rights for the RETRAY label.

## 2. AUDIT PROCESS AND OBTAINMENT OF CERTIFICATE

Compliance with the requirements set out in section 6 of this procedure will allow the recycler to obtain approval from the Foundation to participate in the RETRAY certification scheme established as described in the introductory paragraph.

The approval shall be obtained after gaining a favorable report issued by a Certification Body accredited for the ISO/IEC 17065 standard within the scope of the RETRAY scheme by an Accreditation Body that is a member of EA (European Cooperation for Accreditation) or (International Accreditation Forum), which has signed mutual recognition agreements. Once the Certification Body has issued the positive report, the Foundation will register the company as Approved Recycler for the RETRAY certification scheme and will proceed to its publication in the list of companies available in its [website](#).

**Any recycler with facilities inside or outside the European Union (EU) will be able to access the approval process.** In the case of companies with facilities located outside the EU, the equivalent current legislation will apply, as determined by the Certification Body, existing in the country where the facility of the recovery company to be approved is located.

**To initiate the approval process**, the recycler shall notify the Foundation of its interest in obtaining the certificate by passing the audit process and **signing** the corresponding **contractual documents** ("Agreement to participate in the approval of recyclers for the RETRAY certification process"), **for each one of the production plants to be approved.**

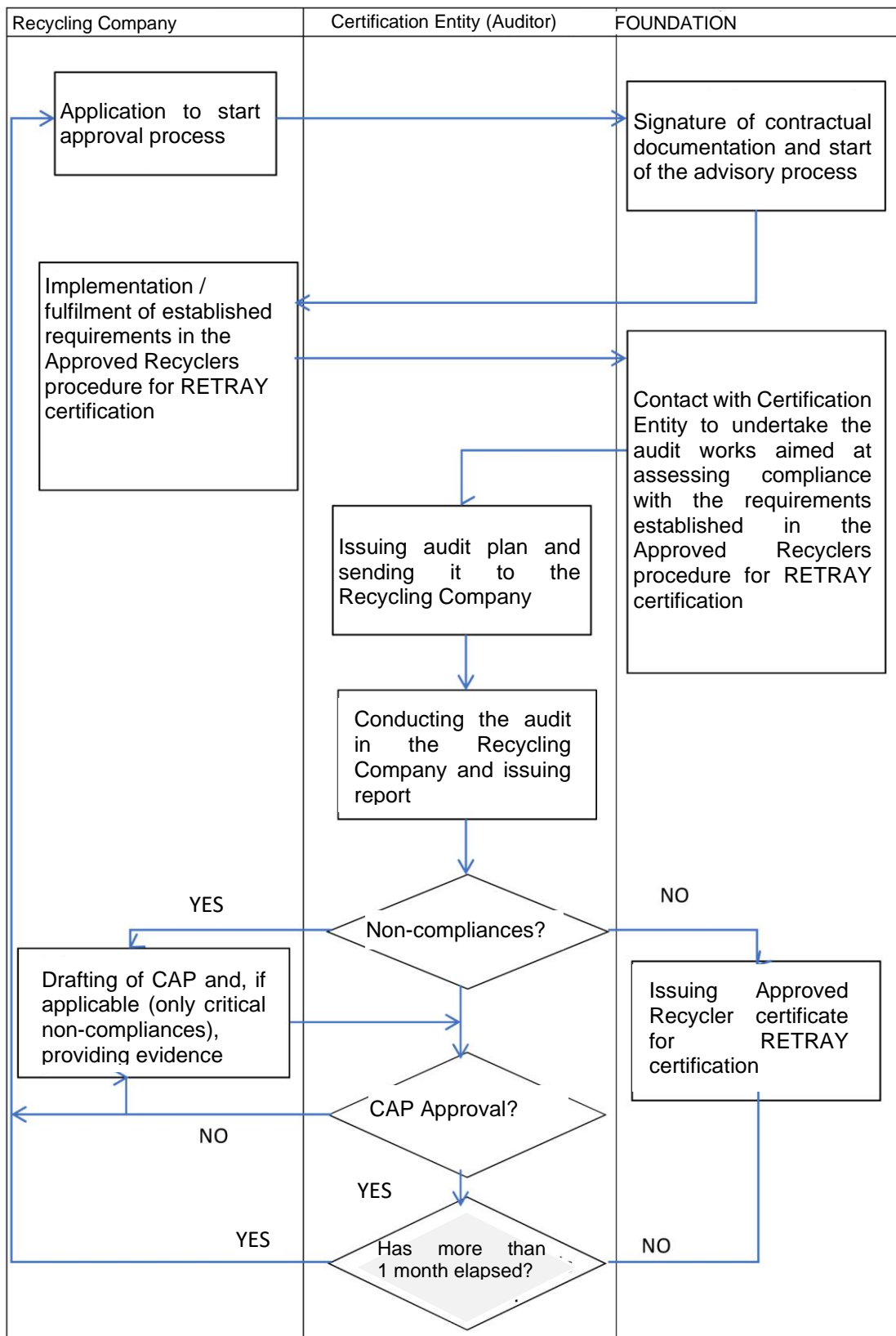
Once the Certification Entity has audited the company and issued the positive report, it will provide a copy of the report to the recycler and to the Foundation. Once the document has been verified and the additional checks that it deems appropriate have been carried out, the Foundation will register the company as an **Approved Recycler for the RETRAY certification, will proceed to its publication in the companies list available in its website and authorize the brand use** by the interested party, coming of applicable rules established on the **Regulation of the Use of the REATRY label.**

This procedure shall serve as benchmark document for establishing the requirements that must be fulfilled by the recycling company for its approval and which shall be verified by the Certification Entity.

3. **FREQUENCY OF AUDITS** The **frequency** established for conducting the audits is **2 years**. This shall also be the validity period for the approval certificates issued by the Foundation.
4. **PLANNING THE AUDIT** The audit shall be scheduled and documented in a plan which shall be sent by the Certification Entity to the recycler prior to the date agreed between both parties for conducting it.
5. **CONDUCTING THE AUDIT, OBTAINING RESULTS AND ACTION PLAN**
- The Certification Entity shall conduct the audit by taking as the basis any requirements established in this procedure. To do this it shall undertake all investigations and exams it deems necessary. These shall be conducted in person at the recycler's facilities and conducting the audit shall require the presence of any representatives whom the company deems necessary for properly interacting with and attending to the auditor's demands for information.
- Once the audit has been conducted, the Certification Entity shall provide the company with a report containing the results obtained. The report shall include non-compliances and opportunities for improvement.
- In case of any non-compliances, the recycling company shall put forward a documented **corrective action plan (CAP)**, which shall be documentary/graphic in nature and will mandatorily have to demonstrate its effectiveness in dealing with them, in order to remove the causes that led to determining the existence of each of the non-compliances.
- As for opportunities for improvement, since they are not infringements, the recycling company will have the power to either take them into consideration for improved performance or to rule them out.
- Should the infringements affect requirements deemed to be critical (see section 6), they shall be mandatorily corrected to obtain a favorable audit report. To do this, the recycling company shall put forward a documented corrective action plan (CAP) that should also contain evidence to demonstrate the implementation of the aforementioned actions.
- For those infringements that affect non-critical requirements, the recycling company shall put forward a CAP whose effectiveness shall be verified at the next audit.
- In any case, the CAP shall be sent to the Certification Entity, which shall evaluate its suitability before approving or rejecting it. If the latter, it shall be mandatory to restart the process of planning.

The maximum period granted for submitting a satisfactory CAP shall be 1 month. Upon expiry of this time limit without the audit having issued a CAP approval, a new on-site audit of the facilities shall be necessary to verify again compliance with the procedure.

The **process summary** is described in the following diagram:



**6. REQUIREMENTS** The requirements established in this procedure encompass demands regarding the following aspects:

- Operation and functioning
- Management team
- Incoming materials
- Inventory management
- Recycling process
- Outgoing materials
- Environmental protection
- Quality management
- Subcontracting

Some of the **requirements** for these aspects are deemed to be **critical or of special importance**. They shall be those corresponding to Sections 6.1, 6.3, 6.5, 6.6, 6.7, 6.8 and 6.9 given below and tagged with **[Cr]**. **Any requirements that have this categorization shall be mandatorily met in their entirety** by the recycling company for the approval certificate to be obtained.

	<b>Critical requirement</b>	<b>Non-critical requirement</b>
Operation and functioning	✓	
Management team		✓
Incoming materials	✓	
Stock management		✓
Recycling process	✓	
Outgoing materials	✓	
Environmental protection	✓	
Quality management	✓	
Subcontracting	✓	

*Table 1. List of requirements*

Any requirement that is not met or that is in the process of being met shall be categorized as non-compliance.

### 6.1. Operation and functioning [Cr]

The recycling company shall accredit compliance of the following requirements tied to the functioning of each production plant for which approval is sought and to the performance of the activity:

1. License for operating, opening of facilities and entry in the correspondent administrative industrial registry.
2. Valid environmental authorization for acting as a waste management company (recycling and recovery operations) issued by the competent authority, at least for the following European Waste List (EWC) codes: 020139, 150102, 150105, 150106, 160119, 170203, 191204 and 200139.
3. In those recycling companies that have their own vehicles for transporting waste, valid transport card and authorization as carrier of the corresponding waste.
4. Valid civil liability insurance policy with proof of payment available.
5. Documentary evidence of being up to date on the payment of tax and social security obligations imposed by existing provisions, in the terms that may have been established by the regulations.
6. Documentary evidence of being up to date on compliance of occupational risk prevention obligations imposed by existing provisions, in the terms that may have been established by the regulations, at the very least, for:
  - Accident insurance.
  - Risk assessment.
  - Preventive action planning.
  - Medical checkups (or, where applicable, their waiver).
  - Implementation of hygiene measures (should it be recommended by the risk assessment).
  - Valid contract with External Prevention Service or In-House Prevention Service.
  - Valid agreement with Mutual Insurance Company.

### 6.2. Management team

The requirements relative to team management to be fulfilled by the recycling company are:

1. Having a **functional organization chart**, showing the organization's structure and depicting its reporting structure. Additionally, there must be a job description -or similar document- in place that establishes the necessary training and experience requirements for performing each job defined in the organization chart.

2. Accrediting that the technical persons responsible for the recycling processes have the following **training and/or experience** in issues such as (at least one of them):

- Chemical Engineering or similar.
- Plastic polymers and the processing of their waste.
- Managing plastic waste facilities.

Additionally, the plant supervisors or managers of the recycling company shall accredit through internal training, imparted by competent and duly documented personnel (training records or certificates), that they have been trained in quality management.

### 6.3. Control of materials [Cr]

The recycling company shall fulfil the following requirements relative to **incoming materials** (PET sheet and thermoformed packaging waste) to the facility:

1. **Controls of incoming materials** must be carried out in accordance with the provisions of the **EN 15347 standard** so that the recycler has information related to the origins of the waste according to the following table:

Origins	Type of material/origin
	Type of product
	Type of waste, for example, post-industrial, post-consumer, demolition waste
	Where it comes from (supplier identification)
	Date
	Waste history (e.g., contact with known hazardous substances)
Transportation	Collection (transport / type of transport)
	Classification
	Batch size, identification and marking
	Pre-treatment (e.g., washing, grinding)
	Storage (for example, outside)

This information must be available **for each batch of product manufactured (recycled PET)** for clients that require this information, if the case.

2. Having **technical specifications** that establish the acceptance criteria for incoming materials, including at the very least the polymer, the color and the level of impurities.
3. Computer-record of any plastic waste received in the facilities, taking note of:
  - Provenance (origin and transfer operator).
  - Characteristics of the waste being transferred: EWL codes, kilograms received, description of the waste.

- Carrier details: name/business name, Tax ID No., address, contact telephone.
  - Starting date of transfer.
4. All records accrediting the result of weighings made shall be retained (e.g.: **scale tickets**) and the reception date shall be registered. The address of the supplier sending the plastic waste consignment must be known and registered by the recycling company.
  5. Should the freight cost of the plastic waste sent by the suppliers (incoming raw material) be borne by the recycling company, a record of the carrier that brought it in must be held in safekeeping for at least six years.
- a) The **weighing scale** for the reception of raw materials shall meet the following requirements:
    - A calibration certificate, or metrology verification, issued by a laboratory or entity accredited by a national body that is a signatory to the EA or ILAC mutual recognition agreements, or by a national laboratory that is a signatory to the ARM-CIPM (Mutual Recognition Agreement of the International Committee for Weights and Measures) or institutes designated by them, or failing that.
    - An internal calibration always complying with the applicable sections of the ISO/IEC 17025 standard.

The calibration of the scale must be carried out with a minimum annual frequency.

#### 6.4. Inventory management

These are the requirements related to the inventory management, to be fulfilled by the recycling company:

1. Storing the plastic waste in a perfectly identifiable area or enclosure as a step that precedes the recycling processes.
2. Identifying the suppliers of each batch and having a registration system in place that records the incoming and outgoing movements of stock into and out of the inventory zone.
3. Performing monthly stock control and documenting it in order to verify that the quantities of stored plastic waste correspond to those recorded by the company's registration system.

## 6.5. Recycling process [Cr]

The recycling company must comply the following requirements regarding its recycling process:

1. **The recycling company's ultimate goal should be the processing of plastic waste from thermoformed PET containers** using methods that allow it to be transformed into colourless transparent recycled **PET**, which constitutes the end product, to be used as raw material by companies that manufacture new plastic products.

In order to guarantee that the recycled materials are introduced into the market, **PET flakes produced must comply with the quality requirements demanded by manufacturers of transparent sheet for making thermoformed PET packaging.**

The **type of approval** that the recycler obtains will be determined based on the recycling performed of monolayer and multilayer waste as follows:

- **Category A "Mono and Multilayer Recycling"**: when recycling monolayer and multilayer PET thermoformed waste packaging. This category includes companies that recycle monolayer and subcontract the recycling of multilayer packaging waste to another approved recycler (as indicated in section 6.9 on subcontracting).
- **Category B "Monolayer Recycling"**: when exclusively recycling monolayer PET thermoformed waste packaging. This category includes, additionally, companies that:
  - do not delaminate multilayer packaging waste (either through their own or subcontracted processes) and this multilayer waste is destined to be mixed with the monolayer or to any other destination.
  - receive pretreated PET thermoformed waste packaging (e.g., clean mono PET flake) and apply super cleaning processes to obtain food grade flakes or pellets.

Due to the current legal framework, the incipient state of technology development, the types of products used or by-products obtained and the process's environmental balance, the Foundation shall not approve for now recycling companies that use pyrolytic or chemical recycling methods such as methanolysis, hydrolysis or glycolysis, among others.

2. The recycling company must carry out controls on the process of manufacture of transparent colorless recycled PET. **These controls must include the recording of variables of the recycling process.**

The following shall serve as **evidence** of compliance of the requirement:

- The certification of its quality management system under the **ISO 9001** standard by a certification entity accredited by a National Accreditation Body that is a signatory to multilateral mutual recognition agreements, **or**
- The certification of traceability of the recycling process according to standard **EN 15343** issued by a Certification Entity accredited by a National Accreditation Body signatory of the multilateral mutual recognition agreements.

The certificate must be valid at the time of the audit.

If the recycling company does not have a certificate according to standard EN 15343 or is not certified under the ISO 9001 standard, it must provide **the production parameter control manual** or document of the operating procedure that is followed to carry out its internal production control.

3. In addition, the recycling company shall demonstrate the effectiveness of its process by providing records that accredit its performance, together with the annual non-hazardous waste report. To this effect the recycler shall provide:
  - a) **Production records** (whether computer-based or physical), which shall contain the following type of information:
    - Quantified incoming plastic waste
    - Quantified outgoing recycled PET products
    - Amount of solid waste generated in the production process (intended for landfill or energy recovery)
  - b) Having the capacity to trace through documents any raw material used in the production process, at least until its provider is known, and additionally maintain backward **traceability** by assigning an end-product batch number until the start of the recycling process.

## 6.6. Control of outgoing recycled materials and of waste [Cr]

The recycling company must accomplish the following requirements:

1. To retain records accrediting the sale of the end product, containing the following information at the very least:
  - Buyer of the recycled product (name and address).
  - Weight of the sold recycled product (together with proof of weighing).
  - Type of recycled product sold.
  - Shipping note reference.

- Sales invoice reference.

2. **To identify the batch of products** so that the delivery notes refer to the batch number of each consignment shipped.

### 6.7. Environmental protection [Cr]

The requirements relative to environmental protection which the recycling company shall fulfil are:

1. Retaining **records** accrediting that the solid **residue** (waste) derived from the **recycling process** is sent to a duly authorized final disposal system (energy recovery or landfill). Invoices, delivery notes or certificates shall be admissible as evidence, with an indication of type and weight of the solid waste received.
2. Having an **Environmental Monitoring and Control Program** in place that establishes both internal and external control operations relative to emissions into the atmosphere, soil and water, as well as limited parameters (permissible limit values) and periodicity of the pertinent reports.

### 6.8. Quality management [Cr]

The recycling company must accomplish the following requirements:

1. To be in possession of a certificate of traceability of the recycling process according to standard **EN 15343** issued by a Certification Entity accredited by a National Accreditation Body signatory of the multilateral mutual recognition agreements. The certificate must be valid at the time of the audit.
2. Related to **quality control of in-put materials**:
  - a) Having a set of purchasing specifications applicable to monolayer and multilayer plastic materials of thermoformed PET containers received from the supplier.
  - b) Having documented proof of the quality control tests conducted for each new provider and, within it, for each new type of product it supplies.
  - c) Of each delivery of plastic waste received from the supplier, record information on «batch size», «color», «form of waste» and «main polymer».
  - d) Having a written procedure in place describing how to process deliveries of incoming plastic waste that does not meet the purchase specifications. This document shall indicate how the supplier is informed about the discrepancies with respect to the specifications,

reporting timeframes, tests conducted as well as auxiliary information recorded.

**3. The recycling company shall fulfil the following requirements relative to the quality control of outgoing products:**

- a) Having sales specifications, applicable to plastic products obtained after the recycling process. The end product manufactured by the recycling company may in no case be constituted by mixtures of virgin material and recycled material, that is to say, the company shall manufacture fully recycled end products.
- b) Having documented proof of the quality of the outgoing plastic products contained in each vehicle departing from the facilities of the recycling company. At the very least, one quality control must be conducted on each outgoing consignment. Quality control tests shall be aimed at verifying compliance of the sales requirements established in the sales specifications.
- c) To provide clients (sheet producers) with the required characteristics of each recycled batch, in accordance with the provisions of **Table 1 of the EN 15348 standard:**

Characteristics	Unit	Testing method	Comments
<b>Required</b>			
Shape		Visual	Flakes, pellets
Determination of maximum particle size	mm		Given by the size of the grinder sieve
Tina particle content	%	Annex A	Value in percentage of particles that pass the 1 mm sieve
Colour		Visual inspection	Monochrome, transparent, blend
Water content	%	Annex B or EN ISO 15512	
PVC content	mg/kg	Annex C	
Polyolefin content	mg/kg	Annex C	

It is recommended that the recycler also include the following additional parameters:

Characteristic	Unit	Method
Intrinsic Viscosity	dl/g	ISO 1628-5
Color L*	--	D65/10º
Color a*	--	D65/10º
Color b*	--	D65/10º
Melting Point	°C	ISO 11357
Crystallinity	%	ISO 11357
Acetaldehyde	ppm	HRGC-MS <sup>1</sup>

<sup>1</sup> High-Resolution Gas Chromatography-Mass Spectrometry

The recycling company must keep the **test certificates for each batch of recycled PET supplied**. Records must be available for a minimum period of **12 months prior** to the audit date

- d) The quality tests shall be conducted in the company's own facilities, and so it is indispensable for the recycler to have the necessary means available (laboratory, analytical determination equipment and qualified staff).
- e) Having documentary proof that the recycling company has systems and processes in place that allow it to comply with **REACH**, in which case the Safety Sheet for each recycled material produced shall be valid.
- f) **Shipping the end product in suitable containers** to minimize the product's contamination risks. These containers shall, at the very least, incorporate the following information:
  - Name of the material
  - Client
  - Batch
  - Weight

- Quality control: yes/no
- pH
- Moisture
- Polyethylene content (PE).

Additionally, it is recommended to identify the container with a barcode/QR code providing a link to process control for traceability in the production.

## 6.9. Subcontracting [Cr]

The recycling company shall in no circumstance subcontract the recycling process of monolayer and multilayer plastic waste of thermoformed PET containers unless the subcontracting is done with another recycling company in possession of a valid approval certificate for RETRAY certification. In that case, the subcontractor shall be asked for a copy of their up-to-date certificate and the following details shall be recorded:

- The date on which the plastic waste is sent to the subcontracted recycler.
- The name of the subcontracted recycling company, together with its address.
- The amount of plastic waste sent to the subcontractor.

If the waste is transported to the facilities of the subcontracted recycler by a third party, their details shall be recorded in a file that must include, at the very least, the name of the company, the address and their authorized carrier number in compliance with applicable national legislation.



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