

Technical guidance

Assessment of the recyclability of Lamps meeting the requirements of Decree No. 2022-748

26/06/2023

Cancel and replaces all previous versions

Table of content

1. Regulatory framework.....	4
1.1. Producers and products subject to the information obligation.....	4
1.2. Regulatory criteria and statements.....	4
2. Methodology	5
2.1. Definition	5
2.2. Evaluation procedure	5
2.2.1. Principe.....	5
2.2.2. Caractère de recyclabilité des matériaux.....	6
3. Glossary	7

Context

The AGECE law (2020) created a new obligation for producers to inform consumers about the environmental qualities and characteristics of products placed on the market (Article 13). This obligation is established in the Environmental Code (translation with no legal value):

Art. L. 541-9-1. - *In order to improve consumer information, **producers and importers of waste-generating products shall inform consumers, by means of marking, labelling, display or any other appropriate process, of their environmental qualities and characteristics, in particular the incorporation of recycled material, the use of renewable resources, durability, compostability, repairability, reusability, recyclability and the presence of hazardous substances, precious metals or rare earths, in accordance with European Union law. [...]***

The information provided for in this paragraph must be visible or accessible to the consumer at the time of purchase. *The producer or importer shall be responsible for making the data relating to the aforementioned qualities and characteristics available to the public **electronically**, in a format that is easily reusable and usable by an automated processing system in an aggregated form. Centralised access to this data may be set up by the administrative authority in accordance with procedures specified by decree. [...]*

A decree in the Council of State shall lay down the procedures for implementing this article, *in particular the definition of environmental qualities and characteristics, the procedures for establishing them, the categories of products concerned and the procedures for providing information to consumers. [...]*

Decree **No. 2022-748** of 29 April 2022 specifies the terms of application of these obligations, through Articles **R 541-220 to R541-223 of the Environmental Code**. The decree also establishes that the information on recyclability is communicated to the producer by the Producer Responsibility Organisation ("PRO") to which it belongs, if necessary with the provision of a calculation tool using a harmonised method.

A Frequently Asked Questions (FAQ) has been published by the Ministry of Ecology: [Framework for environmental claims and consumer information on products](#). Producers are invited to consult this FAQ in addition to the present note.

Purpose of this document

The Technical Guidance provides a methodology that enables producers of SFEs to characterise the recyclability of their products in order to inform the consumer in accordance with the requirements set out in Decree No. 2022-748. This methodology does not allow for a numerical rate to be displayed in the form of a mass percentage of recyclability.

This methodology may be revised and improved in order to take into account the evolution of technical knowledge, to specify certain methodological rules and to make the evaluations more reliable. Any update of this technical note will be communicated by the PRO to their members in a concerted manner.

This note was built in consistency with the work established for Waste of Electronic and Electrical Equipment (WEEE) and Small Fire Extinguishers (SFE).

1. Regulatory framework

1.1. Producers and products subject to the information obligation

According to the decree n°2022-748, the obligation to provide information on the recyclability of products concerns **producers and importers who declare an annual turnover of more than 10 M€** for products subject to EPR placed on the **French market** and who are responsible for **placing more than 10,000 units per year of these products on the market**. Producers whose turnover from EPR products placed on the French market does not exceed €10 million **or** whose number of EPR products placed on the market in France is less than 10,000 units are therefore not affected by the obligation.

Decree n°2022-748 also establishes a progressive application according to the number of units placed on the French market (MSM) and the associated turnover (CA):

- 1 January 2023¹ : producers with a turnover > 50 M€ **and** MSM > 25 000 units / year
- 1 January 2024: producers with a turnover > 20 M€ **and** MSM > 10 000 units / year
- 1 January 2025: producers with a turnover > 10 M€ **and** MSM > 10 000 units / year

Article 13 of the AGEC law and decree N°2022-748 concerning consumer information, **only household Lamps (hence sold to final consumer) are concerned by** this obligation.

1.2. Regulatory criteria and statements

The decree n°2022-748 establishes **5 criteria to characterise the recyclability of a Lamp**:

1. The capacity to be efficiently collected on a territorial scale, through the population's access to local collection points;
2. The ability to be sorted, i.e. directed to the recycling channels for recycling;
3. The absence of elements or substances that disrupt sorting, recycling or limit the use of the recycled material
4. The ability of the recycled material produced by the recycling processes implemented to represent more than 50% by mass of the waste collected
5. The capacity to be recycled on an industrial scale and in practice, in particular by guaranteeing that the quality of the recycled material obtained is sufficient to ensure the sustainability of the application markets, and that the recycling chain can justify a good capacity to take on products that can be integrated into it.

According to the decree, several statements can be displayed:

- if one or several of the 5 criteria are not met: no mention should be displayed²,
- if the product's recyclability is greater than 50%: "*produit majoritairement recyclable*"³ label
- if the product's recyclability is greater than 95%: "*produit entièrement recyclable*"⁴ label
- when "the capacity to be recycled corresponds to the recycling of materials that are mostly reincorporated into products of an equivalent nature that have an identical use and purpose without functional loss of the material", the information may be completed by the words "*produit recyclable en produit de même nature*"

However, given the current state of knowledge, it is not possible to claim "*produit entièrement recyclable*" or "*produit recyclable en produit de même nature*" for Lamps (although this point may be reconsidered in the future).

¹ The FAQ published by the public authorities indicates that a tolerance period will be applied until 1 July 2023 for the transmission of calculation methods by the PROs, with manufacturers having a period of 3 months from this transmission to implement the information in the product sheets.

² This is confirmed by the FAQ published by the public authorities, consulted on 26/01/2023

³ Can be translated by "product mainly recyclable"

⁴ Can be translated by "product entirely recyclable"

2. Methodology

2.1. Definition

We call Lamp the source of light and its envelop (bulb or tube).

- A compact fluorescent lamp (CFL), also called compact fluorescent light, energy-saving light and compact fluorescent tube, is a fluorescent lamp designed to replace an incandescent light bulb; some types fit into light fixtures designed for incandescent bulbs. The lamps use a tube that is curved or folded to fit into the space of an incandescent bulb, and a compact electronic ballast in the base of the lamp.
- A light-emitting diode (LED) is a semiconductor device that emits light when current flows through it. Electrons in the semiconductor recombine with electron holes, releasing energy in the form of photons.

A light fixture (US English), light fitting (UK English), or luminaire is an electrical device containing an electric lamp that provides illumination. All light fixtures have a fixture body and one or more lamps. The lamps may be in sockets for easy replacement—or, in the case of some LED fixtures, hard-wired in place.

To determine the recyclability statement of luminaires, it is mandatory to refer to the The Technical Guidance, produced jointly by Ecologic and ecosystem Producer Responsibility Organisations, that enables producers of electrical and electronic equipment to characterise the recyclability of their products.

2.2. Evaluation procedure

2.2.1. Principle

A quantified assessment of the recyclable portion of the product must be carried out on the basis of the parameters provided in section 2.2.2. This assessment can be carried out in an iterative way, starting the assessment with the main recyclable materials (according to section 2.2.2) present in the product:

- the statement "produit majoritairement recyclable" may be displayed as soon as the recyclability of the product exceeds 50 % on the basis of this assessment (the rest of the materials may then be neglected)
- when the recyclability of the product is assessed to be less than 50%, the product cannot be labelled as "produit majoritairement recyclable". No mention must be displayed in that case.

The balance should be completed until more than 50% of the product is clearly identifiable as "recyclable" or "non-recyclable". This assessment should be carried out according to the following formula:

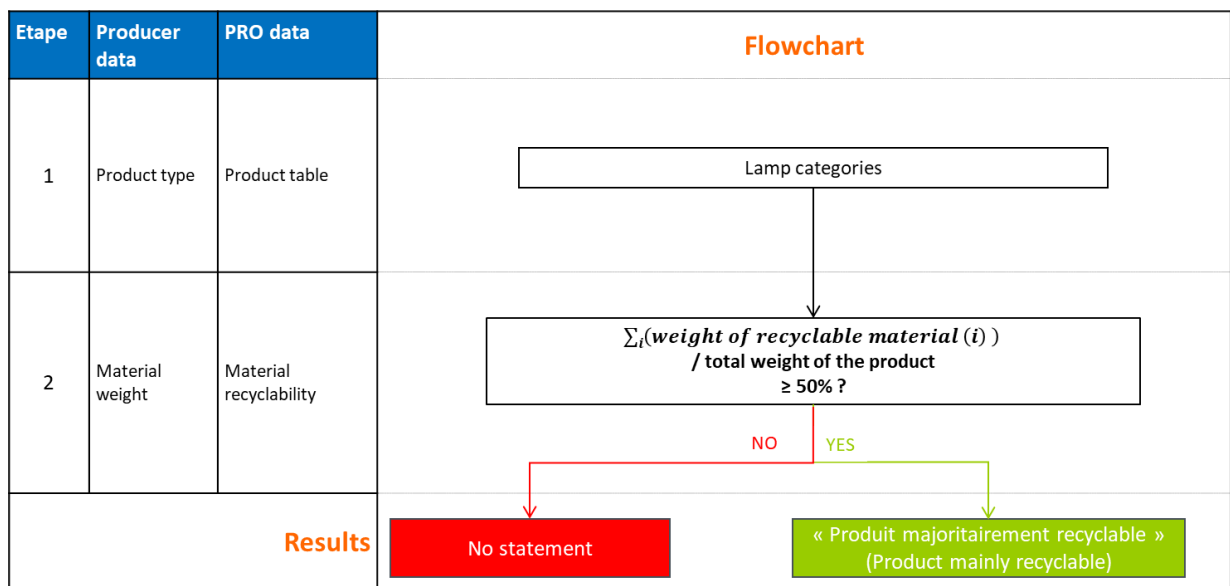
$$\% \text{ recyclable} = \frac{\sum_i(\text{weight of recyclable material } (i))}{\text{Total weight of the product}}$$

NB : Total weight of the product excludes packaging.

Once a representative product within a wider range of references is eligible for the "majoritairement recyclable" statement, it is possible to extrapolate this environmental quality to the other references in this range and consider that they are also eligible for the same statement, as long as the difference in composition between these references and that of the representative product is not likely to reverse the result of the assessment.

Each producer is responsible for the internal rules setting the modalities of extrapolation (identification of the "representative" product, identification of the products considered to be part of the same range, tolerances ensuring that each of the references is actually eligible for the same statement as the representative product).

The following flow chart summarises the methodology.



2.2.2. Caractère de recyclabilité des matériaux

A LED lamp will be considered as « Glass LED » if its envelop is mainly made out of glass. A LED lamp will be considered as « Metal LED » if its envelop is mainly made out of metals. A LED lamp will be considered as « Plastic LED » if its envelop is mainly made out of plastics.

For LED lamps with a mix of plastics and glass or a mix of metals and glass, it is advised to consider the materials weighting the most to determine the lamp category.

The table below qualifies the recyclability of the main materials and components used in order to carry out a material balance of the product's recyclability (see FAQ for more information).

The **green list** corresponds to the materials with the highest recyclability and common to all product categories: **these materials can therefore be sought as a priority in the composition of the product to initiate the recyclability assessment.**

The **orange list** corresponds to materials with a recyclability which depends on the product category concerned.

The **red list** corresponds to materials that are not recyclable in the Lamp stream, regardless of the product category concerned. If all these materials represent more than 50% of the mass of a product, it cannot be labelled "mainly recyclable".

Materials recyclability		
Green list		
All metals and metal alloys	YES	
Orange list		
Catégories de lampes	CFL, Halogen, HID, Glass LED, Others	Plastic LED, Metal LED
Glass (soda-lime and mixt)	YES	NO
ABS not filled with BFR and density < 1.1	NO	YES
ABS-PC not filled with BFR and density < 1.1	NO	YES
PS not filled with BFR and density < 1.1	NO	YES
PE not filled with BFR and density < 1.1	NO	YES
PP not filled with BFR and density < 1.1	NO	YES
Red list		
All plastics with density > 1.1 or unknown	NO	
All plastics filled with BFR	NO	
Powder (all types)	NO	
Mercury	NO	
All others	NO	

The material recyclability may be revised in time, depending on the evolution of technical and recycling knowledge. Additional details are provided in the dedicated FAQ.

For electronic boards (including chips) and electrical cables, where **their detailed material composition is unknown to the producer at the time of the assessment**, default ratios are proposed below to model these components, based on average compositions. **In the case where the detailed material composition of these components is known by the manufacturer, the material recyclability rates presented in table above should be applied.**

Product categories	Default ratios for complex components	
	CFL, Halogen, HID, Glass LED	Plastic LED, Metal LED
Printed Circuit Boards (including chips)	0%	30%
Electrical cables	0%	30%

3. Glossary

ABS: Acrylonitrile butadiene-styrene

ABS-PC : acrylonitrile butadiene-styrene - polycarbonate

BFR: Brominated Flame Retardant

HID: High-Intensity Discharge

LED: Light Emitting Diode

MSM: Put on the market

PE: Polyethylene

PP-HD: Polypropylene high-density

PS: Polystyrene

WEEE: Waste of Electronic and Electrical Equipment