

Minimum standard for assessing the recyclability performance of packaging subject to system participation pursuant to section 21 (3) VerpackG

Draft for consultation

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Table of contents

Conte	xt and introduction	4
1.	Legal framework under the Verpackungsgesetz	6
2.	Object of assessment	6
3.	Description of the recyclability performance assessment methodology and criteria	ı 9
3.1.	Packaging category and recycling path assignment	9
3.2.	Valuable material share assessment	10
3.3.	Identifying and assessing incompatibilities	10
3.4.	Assessing packaging sortability	10
3.5.	Assessing the separability of valuable materials	11
3.6.	Calculating recyclability	12
4.	Existence of recycling infrastructure	13
5.	Terminology and definitions	14
6.	Abbreviations	16
Apper	ndices	18
Annex	1: Assign to a packaging category	19
Annex	2: Assessment principles and requirements for individual packaging categories	23
A 2.	1 Glass and composite packaging, of which the majority is glass	23
A 2.	2 Paper/cardboard packaging (excluding composite packaging)	25
A 2.	3a Liquid packaging carton (LPC)	28
A 2.	3b Composite packaging of which the majority is paper/cardboard (excluding liquid packaging carton)	31
A 2.	4 Steel and composite packaging of which the majority is steel	34
A 2.	5/2.6 Aluminium and composite packaging of which the majority is aluminium – rigid semi-rigid and flexible	
A 2.	7 Bottles made of PET-A – rigid (transparent clear/coloured)	38
A 2.	8a Thermoformed packaging made of PET-A, PET-C – rigid (transparent clear/color opaque)	
A 2.	8b Other packaging made of PET-A, PET-C – rigid (transparent clear/coloured, opa	• •
A 2.	9 PET – flexible (natural/coloured)	47
A 2.	10 PE – rigid (natural/coloured)	48
A 2.	11 PE – flexible (natural/coloured)	51
A 2.	12 PP – rigid (natural/coloured)	54
A 2.	13 PP – flexible (natural/coloured)	57
A 2.	14 HDPE and PP – rigid (natural/coloured)	60
A 2.	15 PS – rigid (natural/coloured)	61
A 2.	16 EPS and XPS – rigid (natural/coloured)	64
		o (=-

A 2.17 Other rigid plastics (e.g. PVC, PC) including multi- materials – rigid	65
A 2.18 Other flexible plastics including multi-materials – flexible	66
A 2.19 (e.g. PLA) Biodegradable plastics – rigid (e.g. PLA, PHB) and flexible (e.g. PLA)	67
A 2.20 Wooden packaging, including cork	68
A 2.21 Natural and synthetic textile fibres	69
A 2.22 Clay, stone, ceramics, porcelain	70
Annex 3: Analyses and individual evidence	71
Annex 3.1: Requirements for compatibility analyses	71
Annex 3.2: Requirements for evidencing sortability and separability	72
Annex 3.3: Requirements for evidencing the existence of recycling infrastructure	73

Context and introduction

This minimum standard enables companies to assess the recyclability performance of their packaging subject to system participation for the German market. This can be relevant in a variety of ways:

- The result of this mathematical assessment (packaging recyclability percentage) is the basis for participation fees as per section 21 (1) of the 'Gesetz über das Inverkehrbringen, die Rücknahme und die hochwertige Verwertung von Verpackungen' (Act Governing the Placing on the Market, Collection and High-Quality Recovery of Packaging, known in German as the 'Verpackungsgesetz' or 'VerpackG'). The systems set these participation fees in alignment with the recyclability performance.
- For companies, the assessment results can be the starting point for optimising their packaging and designing it better for recycling. Doing so can help these companies meet any internal requirements or targets for the recycling-compatible design of their packaging.
- In light of the ban on non-recyclable packaging that will come into effect in 2030 pursuant to Article 6 of Regulation (EU) 2025/40 of 19 December 2024 on packaging and packaging waste (PPWR), companies can use the assessment results as an indicator of whether their packaging is expected to remain marketable from today's perspective and to identify any potential need for action early on, subject to any future European legislative developments.

In accordance with the PPWR, recyclability is a packaging property under this minimum standard. Recyclability quantifies how suitable a packaging unit is for a recycling process that generates secondary raw materials of sufficient quality – compared to the original material – to replace the primary raw material of the same substance in typical applications for that material. As per the requirements for recycling-compatible packaging design set out in section 21 VerpackG (Packaging Act) and Article 6 PPWR, recyclability performance is quantified as a percentage of a packaging unit's weight. This assessment of recyclability performance is undertaken using a uniform methodology, irrespective of the material type:

Step 1: Delineate the object of assessment

As a rule, recyclability performance is assessed for an unfilled unit of packaging as a whole, including closures, decorations, labels, etc. Exceptions to this rule regarding the object of assessment are discussed in chapter 2.

Step 2: Assign to a packaging category

The object of assessment then has to be assigned to a packaging category (see Annex 1).

Step 3: Assess recyclability performance

Recyclability performance is assessed separately for each object of assessment. The assessment principles for each packaging category are included in Annex 2.

The tables in Annex 2 classify design parameters according to their recyclability performance. Parameters are assigned to the categories 'valuable material', 'incompatibilities', 'separable or conditionally compatible' and 'requiring examination'. These categories were defined by the ZSVR and German Environment Agency on a scientific basis and in reference to the waste management context (separate collecting, sorting in separate streams, recycling (processing), applying recyclate). On this basis, recyclability performance is assessed as follows:

 If no parameter is classified as 'incompatible', the recyclability corresponds numerically to the sum of the shares of the materials or formulations that are classified as 'valuable material' (see Annex 2 for calculation details). This scenario represents the standard case. Potential deductions under Section 2 apply.

- 2. Where one or more design parameters are categorised as 'requiring examination' category, the user has to determine if the design causes valuable materials to be lost when assessing recyclability performance. If such losses can be ruled out through examination, the feature has no impact on the calculation in accordance with Section 1 Otherwise, design-related losses must be determined and deducted. Annex 2 also includes information about required examination and assessment rules.
- 3. Where one or more design parameters are assigned to the 'incompatibilities' category, recyclability of the object of assessment is 0%.

Where design parameters are assigned to the 'separable or conditionally compatible' category or not listed at all, they are neither valuable materials nor incompatibilities. This has to be taken into account during the assessment under Sections 1-3. The recyclability performance of the object of assessment can usually be improved if these design parameters are replaced with valuable materials in the course of an optimisation.

Identify the object of assessment Section 2 Assign to a packaging category Appendix 1 Assess recyclability performance Appendix 2 Calculation: Sum of valuable Valuable material shares material shares (%)* Share of incompatible valuable Incompatibilities materials (%)* Share of design-related losses of valuable materials (%)* Design-related losses of valuable materials: sorting & processing Recyclability (%)*

Figure 1 illustrates the process for assessing recyclability performance.

*based on the weight of the packaging (wt.%)

Figure 1: structure and application of the minimum standard

For some packaging categories, no or only limited infrastructure recycling infrastructure in the aforementioned sense exists. In these cases, Annex 2 states that the existence of recycling infrastructure has to be evidenced in each individual case for recyclability performance to be above 0%.

Recyclability performance is calculated as follows:

 $Recyclability \ performance \ [\%] = \frac{Valuable \ materials \ share \ [g] - design-related \ losses \ of \ valuable \ materials \ [g]}{Total \ weight \ of \ the \ object \ of \ assessment \ [g]} \ x \ 100 \ *$

Where one or more design parameters are assigned to the 'incompatibilities' category, recyclability is 0%.

1. Legal framework under the Verpackungsgesetz

An essential goal of extended producer responsibility regulations is to incentivise producers to consider their products' environmental impact throughout the entire product life-cycle, especially eventual disposal, from the outset of design and production.¹ That is why lawmakers have broadened extended producer responsibility provisions under the Verpackungsgesetz (Packaging Act – VerpackG) to include an obligation for systems (system operators according to section 18 VerpackG) to set monetary incentives through system participation fees.

Section 21 VerpackG requires that general recyclability performance be considered when calculating participation fees. However, no specific legal requirements have been introduced for increasing or reducing these fees because, on the one hand, such requirements cannot currently be quantified in a universally binding manner based on the current state of knowledge and, on the other hand, they would constitute a significant encroachment on the system's pricing freedom, which is protected under German antitrust law.² Specifically, section 21 (1) VerpackG stipulates that:

'(1) Systems are obliged to calculate their participations fees in such a way that incentives are included with a view to the production of packaging subject to system participation

1. to promote the use of materials and material combinations that allow for the highest possible percentage to be recycled, taking into account the practice of sorting and recovery [...]'

In order to provide the systems with a uniform framework for the assessment of recyclability performance as defined in section 21 (1) no. 1, section 21 (3) requires the ZSVR to publish a minimum standard every year in agreement with the German Environment Agency.³ The Verpackungsgesetz requires annual publication of the minimum standard, in agreement with the German Environment Agency and no later than 1 September.

Stakeholders were initially involved in preparing this minimum standard through an expert committee. The minimum standard draft was based largely on recommendations from the ZSVR's Expert Committee III and subsequently refined to incorporate consultation feedback. The minimum standard was finalised after the consultation procedure was completed.

The minimum standard is to be used to assess the recyclability performance of packaging placed on the German market during the calendar year following the minimum standard's publication.

2. Object of assessment

It is the packaging as a whole⁴, after use, that is usually the object of assessment.

The recyclability performance assessment refers to the unfilled packaging as a whole, including all integrated packaging components such as labels, sealing films, caps, covers and lids, adhesive applications, safety seals and closures, etc. Separability by hand is not a criterion for assessing recyclability performance.

The following exceptions to this rule for separate packaging components apply:

(1) Components of packaging are to be assessed separately if and to the extent that they necessarily and irrevocably have to be separated for consumption or use (e.g. tear-off strips, crown caps, champagne corks, clasps).

¹ Bundestag-Drucksache 18/11274, explanatory statement for section 21, p. 107

² ibid

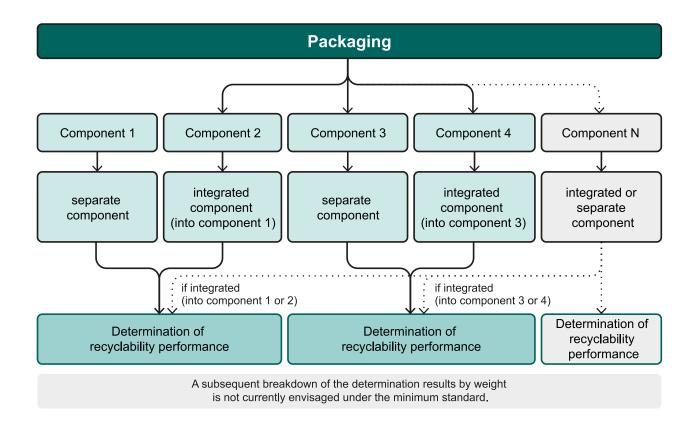
³ ibid

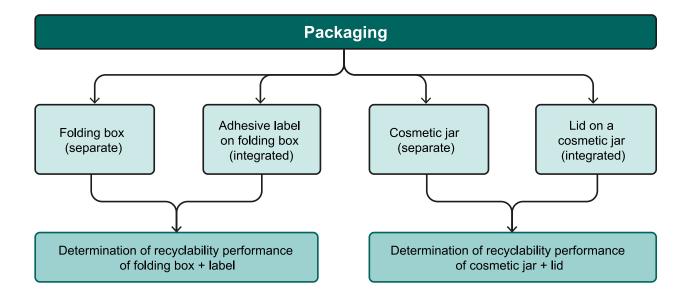
^{4 &#}x27;Functional unit of packaging' within the meaning of DIN/EN 13430, or DIN/EN 13427. This functional unit of packaging usually consists of various components (the smallest parts of packaging).

- (2) separate packaging components also include grouped packaging such as folding boxes or wrapping films, and
- (3) non-attached packaging components that serve to protect the product during transport or to package individual product or assembly components, and
- (4) inserts, organisers, paper or plastic dividers if these are not glued in nor otherwise attached to the packaging in a force-fitting or form-fitting manner.
- (5) recyclability must also be assessed based on individual packaging components in cases where it the separation of the packaging components from each other can only be ensured through mechanical stress during transportation or preparation for sorting; as such, they would appear separately in the first relevant sorting stage, as can be assumed, e.g. for slip and snapon lids and overcaps with no undercuts. This exception is applicable only to packaging intended to be allocated to the mixed collection of lightweight packaging (yellow sack, yellow bin, recycling bin).

Assessment results for separate packaging components relate to those packaging components only; they must not be factored into a packaging unit's weighted total (see chart 2).

The assessment of packaging in groups is permissible if the individual packaging units in such a group possess the same material structure and only differ in terms of packaged goods and/or quantity, but not in terms of relevant process-specific criteria (see **criteria in chapter 3**). An example of where classification of packaging as a group does not make sense is where plastic articles are identical in their material structure but only partially sortable due to differences in colouring. For group assessments, the minimum recyclability has to be assessed and then applied to all packaging units of that group.





3. Description of the recyclability performance assessment methodology and criteria

At a minimum, the assessment of recyclability performance must take into account the available valuable material share of the packaging unit. In determining the available valuable material share, Annex 2 must be applied to verify and consider at least the following four requirements:

- Packaging components or substances contained in the packaging materials must not be recycling-incompatible; recycling incompatibilities may render successful recycling unfeasible.
- 2. The packaging and/or separate packaging component must be **sortable** by its valuable material share.
- 3. The packaging materials must be **separable** after disintegration if this is necessary to enable recycling that generates secondary raw materials of sufficient quality compared to the original material to replace the primary raw material of the same substance in typical applications for that material.
- 4. A **recycling infrastructure** must exist that allows for this packaging and/or separate packaging component to be recycled in such a way that secondary raw materials of sufficient quality – compared to the original material – are generated to replace the primary raw material of the same substance in typical applications for that material.

If the object of assessment meets these requirements without qualification, the valuable material share determines recyclability. If criteria 1 or 4 have not been met, the packaging is not recyclable under this minimum standard. Criteria 2 and 3 can have a quantitative influence on the assessment result. Systems may also take further criteria into account when assessing recyclability performance.

When assessing recyclability performance under this minimum standard, the individual design parameters of a packaging unit were methodologically checked for conformity with recycling requirements. This check was conducted for each packaging category in accordance with Annex II table 1 PPWR. The packaging category is defined by the major component's predominant material. The individual packaging types' category assignment can be found in Annex 1, which also refers to the applicable section of Annex 2. To compare a packaging unit's design parameters with the recycling-compatible design criteria, the qualitative and quantitative criteria that determine whether a given packaging category can be successfully recycled were applied. This comparison has already been undertaken for the present version of the minimum standard; the results for the individual packaging categories are presented in Appendices 2.1 to 2.22.

The assessment criteria and methodologies are presented in the following chapters.

3.1. Packaging category and recycling path assignment

A packaging unit (or a separately assessable packaging component) is assigned to a packaging category according to the major component's predominant material.

The packaging category determines which recycling path will be applied in the assessment, including its specific requirements and the resulting recycling-compatible design criteria.

The mandatory assignment is presented in Annex 1, which also refers to the applicable part of Annex 2.

3.2. Valuable material share assessment

Valuable materials (target materials) are materials intended to be recovered as either a main product or by-product for high-quality applications through an established recycling process applicable to a given packaging category (reference process).

The assessment requirements in Annex 2 contain a list of materials and substances that are to be classified as valuables materials. Classification as a valuable material is undertaken in consideration of the recyclates' reference applications. The list is exhaustive.

When additional valuable materials, substances or formulations are to be used, individual evidence needs to be provided in line with Annex 3.1.

To assess the valuable material share of an individual unit of packaging or a separately assessable packaging component, the mean valuable material shares (in % by mass based on the mean total weight of the object of assessment) are added.

3.3. Identifying and assessing incompatibilities

The recyclability of packaging depends on the absence of any materials, substances or other design parameters that could prevent successful recycling, i.e. the packaging must not exhibit any incompatibilities.

Annex 2 provides the basis for determining incompatibilities in each packaging category. Incompatibility is determined with reference to the relevant recyclate reference application, based on the assumption that adequate removal during processing is not feasible. Each incompatibility list is exhaustive.

If a packaging unit (or a separately assessable packaging component) contains materials, substances or other design parameters categorised as incompatible under the relevant section of Annex 2, the recyclability of that packaging unit and/or separately assessed packaging component is 0%.

For a different result, evidence based on analytical testing methods must be provided. Testing must be repeated where measurement has been used to evidence compatibility for an individual packaging unit, but the reference recyclate application differs from the minimum standard and is not covered by the existing evidence. Detailed requirements for individual evidence are included in Annex 3.2.

Where packaging has been designed in such a way that residual packaged goods remain inside the packaging even after the packaging has been emptied as intended, the influence of the residual packaged goods has to be taken into account when determining incompatibilities⁵ if the packaged goods cannot be separated completely during the recycling process without causing a significant loss in valuable materials.

3.4. Assessing packaging sortability

In the minimum standard, sortability refers to the 'sorting' step of processing where a collected mix is separated into different sorting fractions according to packaging type. This applies to the paper and lightweight packaging collected mixes. Sorting processes that separate disintegrated packaging according to material type by shredding it (for example) are discussed in chapter 3.5.

A distinction must be made between packaging sorting involving individual operations that serve to prepare the packaging for sorting and the actual sorting operations resulting in sorting fractions. Established sorting processes include sorting operations to prepare for sorting, sifting, air

⁵ Contents to be considered in combination with plastic packaging include silicones, acrylates, polyurethanes and other cross-linking substances, waxes and paraffins, as well as bituminous compounds.

separation and ballistic separation. Design criteria are not based on these sub-operations because the latest technology makes it safe to assume that running the right separation operation processes, including repetition and recirculation, prevents any design-related packaging losses.

The sortability criteria are also based on the individual sorting fractions' production stages. The processes used in this context are:

- magnetic separation to sort steel-based packaging and steel-based separate packaging components (criterion: ferromagnetism),
- eddy current separation to sort aluminium-based packaging and non-ferrous metal separate packaging components (criterion: effective electrical conductivity);
- NIR separator to sort paper and plastic-based packaging and separate packaging components (criterion: packaging reflection spectrum in the NIR wavelength range).

The minimum standard operates under the assumption that the relevant object of assessment meets sortability requirements. For some design parameters, however, that assumption has to be examined, evidenced and, where necessary, corrected. Indicators that such an examination should be undertaken are listed in Annex 2.

Detailed requirements for individual evidence are included in Annex 3.2.

The assessment result has to reflect gradually reduced sortability through a directly proportional reduction in recyclability performance.

3.5. Assessing the separability of valuable materials

Recyclates for high-quality applications can only be produced if valuable materials of sufficient purity can be converted into a valuable material concentrate. To do so, the material composite needs to be disintegrated so that it can be separated by material property. The minimum standard refers to this recycling process stage as 'processing'.

Design-related losses of valuable materials during processing reduce recyclability. These losses may occur, for example, in the production of material composites where the state of technology does not allow for downstream separation by material property after disintegration. Losses may also occur from modifications to specific material properties – such as density – that are used to physically separate valuable from non-valuable materials.

As such, the criteria for valuable material separability following the disintegration of the packaging are based on the relevant individual operations of each processing procedure.

The key procedures used in this context are:

- Mechanically pulping paper packaging to sort fibrous material through separation by geometric property (criterion: defiberability);
- Density separation to sort the ground particles of plastics packaging by plastic type (criterion: density);
- Optical separation to sort glass fragments by transmission measurement (criterion: translucency).

The assessment operates under the assumption that a packaging unit meets the requirements for separating valuable material from foreign material. For some design parameters, however, that assumption has to be examined and, where necessary, corrected. Indicators that such an examination should be undertaken are listed in Annex 2.

Valuable material separability is not binary, but rather a property to be assessed analogously. Design-related losses of valuable materials during processing must be quantified through appropriate analysis and measurement methods as set out in Annex 3.2.

The assessment result must reflect gradually reduced separability with a directly proportional reduction in recyclability performance.

3.6. Calculating recyclability

Under this minimum standard, recyclability is defined by the valuable content available for recycling.

The following calculation rules apply:

- If no parameter is classified as 'incompatible', the recyclability corresponds numerically to the sum of the shares of the materials or formulations that are classified as 'valuable material' (see Annex 2 for calculation details). These cases are the norm. Potential deductions under Section 2 apply.
- 2. Where one or more design parameters are categorised as 'requiring examination' category, the user has to determine if the design causes valuable materials to be lost when assessing recyclability performance. If such losses can be ruled out through examination, the feature has no impact on the calculation under Section 1. If it is determined that the design causes valuable materials to be lost, however, these losses must be determined and deducted. Annex 2 also includes information about required examination and assessment rules.
- 3. Where one or more design parameters are assigned to the 'incompatibilities' category, recyclability is 0%.

Accordingly, recyclability performance is calculated as follows:

Recyclability performance $[\%] = \frac{Valuable materials share [g] - design-related losses of valuable materials [g]}{Total weight of the object of assessment [g]} x 100*$

Where one or more design parameters are assigned to the 'incompatibilities' category, recyclability is 0%.

Assessment results for separate packaging components relate to those packaging components only; they must not be factored into a packaging unit's weighted total.

4. Existence of recycling infrastructure

The existence of recycling infrastructure at an operational scale is a basic precondition for declaring of recyclability of more than 0% for an object of assessment. Refer to Annex 2 for whether it can be assumed that recycling infrastructure exists for a given packaging category.

Exceptions may apply in individual cases if it can be proven that (i) the infrastructure exists that is required for recycling that generates secondary raw materials of sufficient quality – compared to the original material – to replace the primary raw material of the same substance in typical applications for that material and (ii) this infrastructure is used. Proof must be provided for each individual case and must comprise the following:

- (1) evidence that the result of the recycling process is of high quality within the meaning of the minimum standard, and
- (2) weighing notes evidence that this recycling path has received, from systems, packaging waste of the same packaging category in a volume that is equal to or greater than the participation volume in the reference year.

Annex 3.3 lists the packaging categories for which individual evidence of recycling infrastructure existence is recommended or required for recyclability assessments other than 0%. It also contains additional information about how to provide evidence.

5. Terminology and definitions

In this document, the following definitions apply:

(1) Recyclability

It means the fundamental and gradual suitability of any given unit of packaging – after undergoing recovery processes that are available on an industrial scale (separate collecting, sorting in separate streams, recycling) – to generate secondary raw materials of sufficient quality when compared to the original material that they can replace the primary raw material of the same substance in typical applications for that material⁶.

(2) Metallisation

Metallising is the application of a thin metal coating, generally aluminium, in a thickness of between approx. 5 and 50 nanometres. Manufacturer specifications for metallising generally involve adding 'met' to the coated plastic film type (e.g. PET met, PP met). Typical packaging applications include crisp packets and bonbon wrappers.

(3) Recyclates⁷

A product (substance or mixture) obtained from waste that is suitable to serve as a substitute for virgin material in applications typical for that material.

(4) Valuable materials

Valuable materials are those materials in a unit of packaging that are to be recovered as recyclates through a material-specific recycling process (e.g. steel alloys, metallic aluminium alloys, NF metallisations, PE plastics, fibrous material, PET-A, etc.).

(5) Foreign material

Foreign material is any material that cannot be classified as valuable content.

(6) Available valuable content

The available valuable content is the proportion of valuable materials that is available for recycling in the total weight of an object of assessment, taking into account the provisions of this minimum standard. A synonym for this term is 'recyclability'.

(7) Fibrous material

When determining valuable content, 'fibrous material' can be defined as the sum of fibre, filling material, starch, mineral pigment-based coating colour, including binder as well as further additives typically used in the paper industry such as wet-strength agents, glue or bound water.

⁶ This comprises primary or secondary recyclate applications. Examples of primary applications (i.e. use in applications of the same type) include using glass fragments from recycled waste glass to produce container glass or using polypropylene granulate to produce paint buckets or nursery plant pots for garden beds. Examples of secondary applications include using packaging steel scrap in the production of constructional steel or polypropylene granulate in the production of cleaning buckets or filing trays.

Recycling methods are not classified as leading to 'high-quality' recycling if they enable packaging waste to be processed only up to the point required for the recyclate to be incorporated into foreign material products or products that are not typically made from virgin material of the same substance. In the context of foreign material products, examples of applications with low recyclate requirements include using cellulose fibres as filler material in road construction. Products that are not typically made from virgin material form virgin material of the same substance include, in particular, substitutes for wood, concrete or natural stone made from plastics that have undergone dry-mechanical treatment, such as palisades.

⁷ This definition of recyclates applies only to the minimum standard in relation to section 21 (1) no. 1 VerpackG.

(8) Composite packaging/composites

Composite packaging is packaging made from two or more different material types that cannot be separated by hand. When assigning composite packaging to packaging categories under this minimum standard, the terms 'composite packaging' or 'composites' refer to packaging where no single material type accounts for more than 95% of the packaging mass.

(9) Plastics

When determining the valuable content of plastic-based packaging, the following applies: the valuable content (PE, PP, PO, etc.) of 'plastic-based packaging' is equal to the eponymous main polymer part (plus additives, fine-disperse filling and strengthening agents, as well as pigments included in the polymer matrix composite).

(10) Targeted separability

Targeted separability is the mechanical separability of packaging into target fractions during industrial sorting, based on the degree of identification, mass and geometric properties.

(11) Fibre-based packaging

Fibre-based packaging under this minimum standard is packaging containing more than 50% fibrous material (see 5.9 above).

(12) Reference application

Reference applications are products established on the market for which a recyclate can serve as a substitute for a primary raw material. They determine the minimum requirements on recycling-compatible design for a unit of packaging, its recycling process and the required recyclate quality.

6. Abbreviations

AI	Aluminium
ВТ	Bundestag (German parliament)
DM	Dry mass
EAN	GS1 European Article Number
EPRC	European Paper Recycling Council
EPS	Expanded polystyrene
EVA	Ethylene vinyl acetate
EVOH	Ethylene vinyl alcohol copolymer
Fe	Ferrous metal
GTIN	GS1 Global Trade Item Number
HDPE	High-density polyethylene
HV	Haftvermittler (tie layer)
KrWG	Kreislaufwirtschaftsgesetz (German Circular Economy Act)
KS	Kunststoff (plastic)
LDPE	Low-density polyethylene
LPB	Liquid packaging carton
LVP	Leichtstoffverpackungen (lightweight packaging)
MAH	Maleic anhydride
MHD	Minimum shelf life
MPO	Mixed polyolefin
MSN	Mengenstromnachweis (volume flow record)
NC	Nitrocellulose (also known as: cellulose nitrate)
OPS	Oriented polystyrene
PA	Polyamide
PE	Polyethylene
PET	Polyethylene terephthalate
PET-A	(Amorphous) PET
PET-G	Glycol-modified polyethylene terephthalate
PE-X	Cross-linked polyethylene
PO	Polyolefin
РОМ	Polyoxymethylene
PP	Polypropylene
PPC	Paper/cardboard
PPC from lightweight	Paper/cardboard from the lightweight packaging collection fraction
packaging	

In this document, the following relevant abbreviations are used:

PS	Polystyrene
PTS	Papiertechnische Stiftung (Paper Technology Foundation)
PVC	Polyvinyl chloride
PVDC	Polyvinylidene chloride
UFI code	Unique Formula Identifier Code
VerpackG	Verpackungsgesetz (Packaging Act)

Appendices

Annex 1	Packaging types and packaging categories
Annex 2	Assessment principles and requirements for individual packaging cate-
	gories
Annex 2.1	Glass and composite packaging, of which the majority is glass
Annex 2.2	Packaging made of paper/cardboard (excluding composite packaging)
Annex 2.3a	Liquid packaging board
Annex 2.3b	Composite packaging of which the majority is paper/cardboard (exclud- ing liquid packaging carton)
Annex 2.4	Steel and composite packaging of which the majority is steel
Annex 2.5/2.6	Aluminium and composite packaging of which the majority is alumin- ium – rigid, semi-rigid and flexible
Annex 2.7	Bottles made of PET-A – rigid (transparent, clear/coloured)
Annex 2.8a	Thermoforms made of PET-A and PET-C – rigid (transparent, clear/col- oured, opaque)
Annex 2.8b	Other packaging made of PET-A and PET-C – rigid (transparent, clear /coloured, opaque)
Annex 2.9	PET – flexible (natural/coloured)
Annex 2.10	PE – rigid (natural/coloured)
Annex 2.11	PE – flexible (natural/coloured)
Annex 2.12	PP – rigid (natural/coloured)
Annex 2.13	PP – flexible (natural/coloured)
Annex 2.14	HDPE and PP – rigid (natural/coloured)
Annex 2.15	PS – rigid (natural/coloured)
Annex 2.16	EPS and XPS – rigid (natural/coloured)
Annex 2.17	Other rigid plastics (e.g. PVC, PC) including multi-materials – rigid
Annex 2.18	Other flexible plastics including multi-materials – flexible
Annex 2.19	Biodegradable plastics – rigid (e.g. PLA, PHB) and flexible (e.g. PLA)
Annex 2.20	Wooden packaging, including cork
Annex 2.21	Natural and synthetic textile fibres
Annex 2.22	Clay, stone, ceramics, porcelain
Annex 3	Analyses and individual evidence
Annex 3.1	Requirements for compatibility analyses
Annex 3.2	Requirements for evidencing sortability and separability
Annex 3.3	Requirements for evidencing the existence of recycling infrastructure

Annex 1: Assign to a packaging category

Assigning an object of assessment to a packaging category in accordance with Annex II table 1 PPWR and the related assessment requirements

Procedure:

The following steps are required to assign an object of assessment to the correct packaging category, based on this Annex:

- 1. In column 1, the predominant packaging material of the major component is identified.
- 2. If there are multiple rows with identical entries in column 1, the applicable packaging type is identified in column 2; the entries are checked in the order of the table. In column 3, typical packaging formats for the packaging types are provided by way of example to determine plausibility.
- 3. If the packaging type is identified in column 2, column 4 will indicate which section of Annex 2 contains the relevant provisions for assessing the recyclability performance.

Objects of assessment that cannot be assigned to a packaging category:

If an object of assessment cannot be assigned to any category using the procedure described above, it should generally be assumed that no recycling infrastructure exists. Such objects are usually not sorted out and therefore not recycled; as a consequence, they are to be classified as non-recyclable (0% recyclability). For a different result, individual evidence in line with the provisions of Annex 2.22 must be provided.

	Column 1	Column 2	Column 3	Column 4
Cate- gory no.	Predominant packaging mate- rial (of the main body)	Packaging type (Colour /optical transmittance)	Format (illustrative and non-ex- haustive)	Assessment requirements in Annex
1	Glass	Glass and compo- site packaging, of which the majority is glass	Bottles, canning jars, flacons, cosmetics pots, jars, tubs, am- poules, vials made of glass (soda lime silica), aerosol cans	2.1
2	Paper/cardboard	Paper/cardboard packaging (excluding compo- site packaging)	Corrugated cardboard, folding boxes, cartons, trays, grouped packaging, flexible paper pack- aging (e.g. films, sheets, pouches, lidding, cones, wrap- pers)	2.2
3	Paper/cardboard	Liquid packaging carton	Aseptic, non-aseptic or auto- clavable cardboard composite packaging, coated on both sides, for bever- ages, foods with a pasty con- sistency, animal feed, etc.	2.3a
3	Paper/cardboard	Composite packag- ing of which the majority is pa- per/cardboard (excluding liquid packaging board)	Laminated folding boxes, com- posite cans, paper cups (i.e. laminated with polyolefin and with or without aluminium), trays, plates and cups, metal- lised or plastic laminated	2.3b

	Column 1	Column 2	Column 3	Column 4
Cate- gory no.	Predominant packaging mate- rial (of the main body)	Packaging type (Colour /optical transmittance)	Format (illustrative and non-ex- haustive)	Assessment requirements in Annex
			paper/cardboard, paper/card- board with plastic liners/win- dows, cardboard tubes	
4	Metal	Steel and compo- site packaging of which the majority is steel	Aerosols cans, food cans, paint and colour cans, boxes, trays, drums, tubes made of steel, in- cluding tinplate, thin sheet metal and stainless steel	2.4
5	Metal	Aluminium and composite packag- ing of which the majority is alumin- ium – rigid	Rigid formats (food and bever- age cans, bottles, aerosols, drums, tubes, cans, boxes, trays) made of aluminium	2.5/2.6
6	Metal	Aluminium and composite packag- ing of which the majority is alumin- ium – semi-rigid and flexible	Semi rigid and flexible formats (containers and trays, tubes, foils, flexible foil) made of alu- minium	2.5/2.6
7	Plastics	Bottles made of PET-A – rigid (transparent, clear /coloured, opaque)	Bottles and flasks	2.7
8	Plastics		Mono- and multilayer trays, snap-on caps, cups, blisters, other thermoforms, etc.	2.8a
8	Plastics	Other packaging made of PET-A and PET-C – rigid (transparent, clear /coloured, opaque)	Rigid formats other than bottles and flasks as well as ther- moformed packaging (including pots, tubs, cans, jars, cups, mono- and multilayer trays and containers, aerosol cans)	2.8b
9	Plastics	PET – flexible (Natural/coloured)	Films, pouches, foams, stand- up pouches, carrier bags, wrap- ping films	2.9
10	Plastics	PE – rigid (Natural/coloured)	Containers, bottles \leq 5l, cups, trays, blisters, pots, cans, buck- ets \leq 5l, canisters \leq 5l and tubes	2.10
11	Plastics	PE – flexible (Natural/coloured)	Flowpacks, pouches, nets, foams, tubular bags, shrink wraps, stand-up pouches,	2.11

	Column 1	Column 2	Column 3	Column 4
Cate- gory no.	Predominant packaging mate- rial (of the main body)	Packaging type (Colour /optical transmittance)	Format (illustrative and non-ex- haustive)	Assessment requirements in Annex
			carrier bags, bags, wrapping films, bubble wrap, films, includ- ing multilayer and multi-material packaging	
12	Plastics	PP – rigid (Natural/coloured)	Containers, bottles \leq 5l, cups, trays, blisters, pots, cans, buck- ets \leq 5l, canisters \leq 5l and tubes	2.12
13	Plastics	PP – flexible (Natural/coloured)	Flowpacks, pouches, nets, foams, tubular bags, shrink wraps, stand-up pouches, car- rier bags, bags, wrapping films, bubble wraps, films, including multilayer and multi-material packaging	2.13
14	Plastics	HDPE and PP – rigid (Natural/coloured)	Crates and pallets, corrugated plastic sheets	2.14
15	Plastics	PS – rigid (Natural/coloured)	Rigid formats (including dairy packaging, bottles \leq 5l, trays, blisters, cans, cups and other food containers, buckets \leq 5l, canisters \leq 5l, tubes)	2.15
16	Plastics	EPS and XPS – rigid (Natural/coloured)	Rigid formats (including cool boxes, fish boxes, edge protec- tors and other impact protection for electronic items and trays), cups and other food containers	2.16
17	Plastics	Other rigid plastics (e.g. PVC, PC) in- cluding multi-mate- rials – rigid	Rigid formats, including inter- mediate bulk containers, drums	2.17
18	Plastics	Other flexible plas- tics including multi- materials – flexible	Pouches, blisters, ther- moformed packaging, vacuum packaging, modified atmos- phere /modified humidity pack- aging, including flexible interme- diate bulk containers, bags, stretch films	2.18
19	Plastics	Biodegradable plas- tics (¹) – rigid (e.g. PLA, PHB) and flexible (e.g. PLA)	Rigid and flexible formats	2.19

	Column 1	Column 2	Column 3	Column 4
Cate- gory no.	Predominant packaging mate- rial (of the main body)	Packaging type (Colour /optical transmittance)	Format (illustrative and non-ex- haustive)	Assessment requirements in Annex
20	Wood, cork	Wooden packaging, including cork	Pallets, boxes, crates	2.20
21	Textiles	Natural and syn- thetic textile fibres	Bags, cords	2.21
22	Ceramics or porcelain stone- ware	Clay, stone, ceram- ics, porcelain	Pots, containers, bottles, jars	2.22

(i) Please note that this category contains plastics that are readily biodegradable (meaning a proven ability to convert > 90 % of the original material into CO₂, water and minerals by biological processes within six months) and regardless of the feedstock used for their production. Biobased polymers that are not readily biodegradable are covered under the other relevant plastic categories.

Annex 2: Assessment principles and requirements for individual packaging categories

A 2.1 Glass and composite packaging, of which the majority is glass

a. Scope of application

The following assessment principles, criteria and requirements apply to packaging with glass as the main material. These are, for example: canning jars, bottles, jars, flacons and ampoules.

b. Classification of design features incl. examination and test requirements

The most common design features of glass packaging are listed below in a table, assigned to the columns 'valuable material, 'incompatibilities', 'separable or conditionally compatible', and 'examination of design-related losses of valuable materials'. The latter assignment may also be additive and refers to the corresponding examination or assessment regulation in the lower section of the table at the end of the chapter.

c. Calculation of recyclability

- 1. If no parameter is classified as 'incompatible', the recyclability corresponds numerically to the sum of the shares of the materials or formulations that are classified as 'valuable material'. This scenario represents the standard case.
- 2. If one or more design features are categorised as 'requiring examination, it must be determined whether they lead to design-related losses of the valuable material. If such losses can be ruled out through examination, the feature has no impact on the calculation in accordance with section 1. Otherwise, design-related losses must be determined and deducted.
- 3. If one or more design features are categorised under 'incompatibilities', the recyclability is 0%.
- d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

No individual evidence of the existence of a recycling infrastructure is required for the declaration of recyclability.

		Main body				
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material
		Normal glass (soda-lime glass)	х			
		Leaded glass		Х		
		Opal glass (cryolite glass)			Х	
	Material	Borosilicate glass		Х		
Main body		Glass-ceramic		Х		
Main body		Quartz glass		Х		
		Other glass containing lead		Х		
	Printing, lacquer	Direct printing			Х	P2.2
	and stamping	Foil stamping			Х	
	F8	Lacquer			Х	P2.2
		Minor components				
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuabl material
		Borosilicate glass		Х		
		Normal glass (soda-lime glass)	х			
		Leaded glass		х		
		Opal glass (cryolite glass)			х	
		Glass-ceramic		Х		
		Quartz glass		Х		
Closure/		Other glass containing lead		Х		
unctional head	Material	Plastic*			Х	
unctional field		Ceramic		Х		
		Natural material (wood, cork)			Х	
		Swing tops with non-ferromagnetic metal shares only		Х		
		Non-ferrous metal and stainless Steel (except valve spring and ball)	х			
		Steel alloys, ferromagnetic (except valve spring and ball)	х			
		Valve spring and ball in plastic functional closures			Х	
		Tinplate	х			
		Plastic			Х	P2.1
	Material	Paper*			Х	
		Paper-plastic label			Х	P2.1
Label/Sleeve	Adhesive	Adhesive			х	
	application					
		Printing ink			Х	
	Decoration	Foil stamping			Х	
		Lacquer			Х	
		Borosilicate glass		Х		
		Normal glass (soda-lime glass)	X			
		Leaded glass		Х		
		Opal glass (cryolite glass)			Х	
		Glass-ceramic		X		
		Quartz glass		X		
Wrapping and		Other glass containing lead		Х	V	
	Material	Plastic		×	Х	
ther decoration		Ceramic Wicker basket		Х	V	
		Metal net			Х	P9 P9
				Х		P9
		Metal net, non-ferromagnetic Natural material (wood, cork)		^	Х	
		Non-ferrous metal and Stainless Steel	Х		~	P6
		Steel alloys, ferromagnetic	X			P6
		Tinplate	X			P6
Note: Different c	ategorisation for cra	te-based deposit systems as valuable material possible.	~			FU
		Examination of design-related losses of valuable	e material			
	In the case of glass	packaging with adhesive labels made from plastic, the glass share covered		annot he classific	d as valuable m	aterial share if the
2.1	-	acces waterproof adhesive applications.	by these labels t	annot be classifie	a as valudule M	
		level of transmission of less than 10% in a 400 nm to 780 nm wave range (e a due to varni	shing or tinting) or	nnot he classifi	ed as valuable
2.2	material share eithe		e.g. uue to varms		unior be classifi	
		n. packaging with glued-on metal plaques, the glass share covered by this pla	que is not to bo	counted towards	to the available	valuable material
i	-	e used produces waterproof adhesive applications.		counted towards		

A 2.2 Paper/cardboard packaging (excluding composite packaging)

a. Scope of application

The following assessment principles, criteria and requirements apply to packaging with paper/paperboard/cardboard as the main material. These are, for example: corrugated cardboard, folding boxes, paper bags and pouches.

b. Classification of design features incl. examination and test requirements

The most common design features of PPC packaging (paper/cardboard/cardboard) are listed below in a table, assigned to the columns 'valuable material, 'incompatibilities', 'separable or conditionally compatible', and 'examination of design-related losses of valuable materials'. The latter assignment may also be additive and refers to the corresponding examination or assessment regulation in the lower section of the table at the end of the chapter.

c. Calculation of recyclability

- 1. If no parameter is classified as 'incompatible', the recyclability corresponds numerically to the sum of the shares of the materials or formulations that are classified as 'valuable material'. This scenario represents the standard case.
- 2. If one or more design features are categorised as 'requiring examination, it must be determined whether they result in design-related valuable material losses. If such losses can be ruled out through examination, the feature has no impact on the calculation in accordance with section 1. Otherwise, design-related losses must be determined and deducted.
- 3. If one or more design features are categorised under 'incompatibilities', the recyclability is 0%.
- d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

No individual evidence of the existence of a recycling infrastructure is required for the declaration of recyclability.

	Paper/ca	rdboard packaging (excluding composite packaging) Reference a	pplication: c	orrugated base	paper	
		Main body				
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material
		Corrugated fibreboard	Х			
		Kraft paper	X			56.3
		Moulded pulp, highly compressed Moulded pulp, slightly compressed	X X			P6.2
		Glassine	X			
		Bogus paper	X			
	Material	Wrapping tissue	Х			
	Wateria	Bitumen paper		Х		
		Oil paper		X		
		Wax/Paraffin paper	Y	X		
		Paper, paperboard, cardboard (PPC), other sorts Foamed, extruded, thermoformed component made of starch	Х		Х	
		Aluminium lamination			X	P0.1
		Plastic film (extrusion lamination, film lamination)			x	
	Dyeing	Dyed black, using soot-carbon-based pigments				P2
		Dry strength agent: PVOH	Х			P6.2
		Dry strength agent: Starch (mass and surface)	Х			
	Other equipment	Dry strength agent: Other synthetic polymers	Х			P6.2
	(of the paper)	Sizing agent, hydrophobic (mass and surface)	X			PC 2
		Wet strength agent, impregnating agent Mineral fillers	X X			P6.2
		Other equipment	X			1
Main body		Metallization	X		х	
		Mineral pigment coating incl. binding agent	Х*			
	Barriers and	Polymer dispersion coating (thermoplastic)		х		P8
	surface finish	Polymer mineral coating (thermoplastic)		Х		P8
	(of the paper)	Silicone coating			Х	P6.2
		Paraffin, wax, oil			Х	P6.2
	Additives and	Other surface finish AlOx		Х	Х	P6.2, P8
	coatings (of the	Metallization			X	
	plastic layer)	SiOx			X	
		Dispersion adhesive			х	
	Adhesive in multilayer	Hot-melt adhesive application, criteria of EPRC scorecard fulfilled			х	
	structure	Hot-melt adhesive application, criteria of EPRC scorecard not fulfilled		Х		P8
	Structure	Starch-based adhesive	Х			
		Direct printing, with substances on the EuPIA exclusion list		х	X	
		Direct printing, without substances on the EuPIA exclusion list Foil stamping			X X	
		Lacquer			X	
	Decoration					
		Fully lacquered surface				
		 Excluding clear protective lacquer up to a thickness of <= 5 micrometers Excluding internal bag layers if the grammage is at least 100 g/m² 				P2
		Minor components		1.		
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material
		Paper (not equipped with wet strength agent)	Х			
	Material	Paper (equipped with wet strength agent)	Х			P6.2
		Plastic			X	
		Dispersion adhesive		-	X	
Label	Adhesive	Hot-melt adhesive application, criteria of EPRC scorecard fulfilled		Y	Х	DQ
		Hot-melt adhesive application, criteria of EPRC scorecard not fulfilled Starch-based adhesive	Х	X		P8
		Direct printing, with substances on the EuPIA exclusion list	••	х		
	Decoration	Direct printing, without substances on the EuPIA exclusion list			Х	
		Lacquer			Х	
		Dispersion adhesive			Х	
eam adhesion /	Adhesive	Hot-melt adhesive application, criteria of EPRC scorecard fulfilled			Х	
Attachment		Hot-melt adhesive application, criteria of EPRC scorecard not fulfilled		х		P8
		Starch-based adhesive	Х		X	
Minor		Cellophane Plastic (non-specific)			X X	
		Plastic (non-specific)			٨	
component (not fibre-based)	Material	PVOH			Х	

		Other design parameters				
		Plastic-coated surface			P2	
	Structure	- Excluding internal bag layers if the grammage is at least 100 g/m ²			PZ	
		Metal pigments applied on a large scale (taking up > 50% of the projected			P2	
	Decoration	surface) (lacquering, print, coating or embossing)			12	
Other design		> 50% fully printed black (including background) using soot-carbon-based			P2	
parameters		pigments				_
	Packaged good	Non-dry packaged good – i.e. fibre-based packaging for example for liquids, certain foodstuffs, oils and emulsions			P6.1	
	Structure	Double-sided barrier coating			P6.2	
	Structure	PFAS share in food-contact packaging \geq limit value according to Article 5,			P0.2	
	PFAS	paragraph 5 PPWR		х		
* Mineral pigment	coatings including bi	nding agents without a sealing function and without a function as a water va	apour, oxvgen (or grease barrier	are to be counted towards the	
valuable material						
		Examination of design-related losses of valuable	material			
	Presence of an alun	ninium foil layer; examination required (test if necessary) whether the design	n causes sorting	g into aluminium	fraction. If so, a complete loss of	of
P0.1	valuable material fo	or packaging category 2 has to be factored.				
P0.2	Presence of ferrom	agnetic components ≥ 5% by weight in relation to the object of assessment;	examination r	equired (test if n	ecessary) whether the design cau	Jses
P0.2	sorting into ferrous	metal fraction. If so, a complete loss of valuable material for packaging cate	egory 2 has to	be factored.		
P2	Requirement to test	t whether identifiability, including targeted separability, is given in sensor-ba	sed sorting. Re	strictions must b	e taken into account as	
12	proportionate losse	s of valuable materials.				
P6.1	contents – i.e. fibre example, dwell time result in the dispers that is typically fille share must be dedu If, during the pulping	the recyclability of fibre-based packaging, the gradual defiberability of the fil -based packaging for example for liquids, certain foodstuffs, oils and emulsie and other operating parameters in the processing of the material) of the re- ion of the fibrous material, and that the fibrous material is recycled. This ob d with contents that are dry (< 15% moisture content), free-flowing or partic cted to determine the available valuable material share. g of fibre-based packaging, substances that cannot be classified as fibrous m lispersed), these shall be quantified by a suitable testing method and deduct	ons – evidence spective recov ligation to prov sulate, such as t naterial pass int	must be provide rery path (PPC or vide evidence do flour or sugar. Th to the aqueous p	ed that the operating conditions (f lightweight packaging collection) es not apply to fibre-based packa he non-recoverable fibrous mater phase (water-soluble, colloidally	(for 1) aging
P6.2	carton) coated or m material. The non-n If, during the pulping	a agents, impregnating agents, waxes, etc., are used for fibre-based packagir netallised on both sides, the determination of recyclability needs to be based ecoverable fibrous material share must be deducted to determine the availa g of fibre-based packaging, substances that cannot be classified as fibrous m lispersed), these shall be quantified by a suitable testing method and deducted	l on a suitable ble valuable m aterial pass int	testing methodo aterial share. to the aqueous p	logy, regardless of the filling bhase (water-soluble, colloidally	g
P8		termination in the sense that incompatible substances do not negatively aff esting must be provided. Requirements for the implementation and docume				d
		Scope of application of the design parameters categories and the second se	orised as P			
P0.1	The criterion explici	tly does not apply to metallised packaging.				
P2	Explicitly not applic	able to large-format transport packaging (e.g. cartons).				

A 2.3a Liquid packaging carton (LPC)

a. Scope of application

The following assessment principles, criteria and requirements apply to packaging with carton as the main material. These are, for example: liquid packaging cartons.

b. Classification of design features incl. examination and test requirements

The most common design features of liquid packaging cartons are listed below in a table, assigned to the columns 'valuable material, 'incompatibilities', 'separable or conditionally compatible', and 'examination of design-related losses of valuable materials'. The latter assignment may also be additive and refers to the corresponding examination or assessment regulation in the lower section of the table at the end of the chapter.

c. Calculation of recyclability

- 1. If no parameter is classified as 'incompatible', the recyclability corresponds numerically to the sum of the shares of the materials or formulations that are classified as 'valuable material'. This scenario represents the standard case.
- 2. If one or more design features are categorised as 'requiring examination, it must be determined whether they result in design-related valuable material losses. If such losses can be ruled out through examination, the feature has no impact on the calculation in accordance with section 1. Otherwise, design-related losses must be determined and deducted.
- 3. If one or more design features are categorised under 'incompatibilities', the recyclability is 0%.
- d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

No individual evidence of the existence of a recycling infrastructure is required for the declaration of recyclability; if PE, PP and aluminium components are claimed as valuable material, individual evidence of poly-Al recycling in accordance with Annex 3.3 is recommended.

Main body Material multilayer f density <1 g/cm Main body Material multilayer f density >1 g/cm Other equip (of the par surface fil (of the par (of the par	Main body Cardboard PE PET PP Aluminium foil Biodegradable and compostable materials as a layer COC layer EVOH layer Ionomer layer (non-specific) PA layer	Valuable material X ¹ X ¹ X ¹ X ²	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuabl material
Material multilayer 1 density < 1 g/cm Main body Material multilayer 1 density > 1 g/cm Other equip (of the pai Surface fin (of the pai Additives coatings (o	PE PET PP Aluminium foil Biodegradable and compostable materials as a layer COC layer EVOH layer Ionomer layer (non-specific)	x x ¹ x ¹ x ¹	es	conditionally compatible	design-related losses of valuabl
Material multilayer 1 density < 1 g/cm Main body Material multilayer 1 density > 1 g/cm Other equip (of the pai Surface fin (of the pai Additives coatings (o	PE PET PP Aluminium foil Biodegradable and compostable materials as a layer COC layer EVOH layer Ionomer layer (non-specific)	X ¹ X ¹ X ¹	X	X	
Material multilayer 1 density < 1 g/cm Main body Material multilayer 1 density > 1 g/cm Other equip (of the pai Surface fin (of the pai Additives coatings (o	PET PP Aluminium foil Biodegradable and compostable materials as a layer COC layer EVOH layer Ionomer layer (non-specific)	X ¹ X ¹		X	
Material multilayer 1 density < 1 g/cm Main body Material multilayer 1 density > 1 g/cm Other equip (of the pai Surface fii (of the pai Additives coatings (o	PP Aluminium foil Biodegradable and compostable materials as a layer COC layer EVOH layer Ionomer layer (non-specific)	X1		Х	
Main body Main body Main body Material multilayer f density > 1 g/cm Other equip (of the pa Barriers a surface fin (of the pa Additives coatings (o	Aluminium foil Biodegradable and compostable materials as a layer COC layer EVOH layer Ionomer layer (non-specific)	X1	×		
Main body Main body Main body Material multilayer f density > 1 g/cm Other equip (of the pa Barriers a surface fii (of the pa Additives coatings (o	Biodegradable and compostable materials as a layer COC layer EVOH layer Ionomer layer (non-specific)		×		
Main body Main body Main body Material multilayer f density > 1 g/cm Other equip (of the pa Barriers a surface fii (of the pa Additives coatings (o	COC layer EVOH layer Ionomer layer (non-specific)	v ¹			
Main body Main body Main body Material multilayer f density > 1 g/cm Other equip (of the pa Barriers a surface fii (of the pa Additives coatings (o	EVOH layer Ionomer layer (non-specific)		~		
Main body Main body Main body Material multilayer f density > 1 g/cm Other equip (of the pa Barriers a surface fii (of the pa Additives coatings (o	lonomer layer (non-specific)	^			
Main body Main body Main body Material multilayer f density > 1 g/cm Other equip (of the pa Barriers a surface fii (of the pa Additives coatings (o				X	
Main body Main body Main body Material multilayer f density > 1 g/cm Other equip (of the pa Barriers a surface fii (of the pa Additives coatings (o	r A layel		X	Х	
Main body Main body Main body Material multilayer f density > 1 g/cm Other equip (of the pa Barriers a surface fii (of the pa Additives coatings (o			^		
Main body Main body Main body Material multilayer f density > 1 g/cm Other equip (of the pa Barriers a surface fii (of the pa Additives coatings (o	Nylon 6 or co-polyamide 6-66 in coextruded PE/PA films (with or without EVOH), combined with MAH-grafted PE as an adhesion promoter at a ratio of at least 0.5 g of adhesive per 1 g of PA (+EVOH)			х	
 < 1 g/cn < 1 g/cn Main body Material multilayer 1 density > 1 g/cn Other equip (of the particular of the particula				x	
Main body Material multilayer 1 density > 1 g/cn Other equip (of the par Barriers a surface fin (of the par Additives coatings (o	PE layer (non-specific)	X1			
Multilayer f density > 1 g/cm Other equip (of the pa Barriers a surface fii (of the pa Additives coatings (o	HDPE layer	X1			
Multilayer f density > 1 g/cm Other equip (of the pa Barriers a surface fii (of the pa Additives coatings (o	MDPE layer	X1			
Multilayer f density > 1 g/cm Other equip (of the pa Barriers a surface fii (of the pa Additives coatings (o	LDPE layer	X ¹			
Multilayer f density > 1 g/cm Other equip (of the pa Barriers a surface fii (of the pa Additives coatings (o	LLDPE layer	X ¹			
Multilayer f density > 1 g/cm Other equip (of the pa Barriers a surface fii (of the pa Additives coatings (o	mPE (metallocene) layer	X ¹			
Multilayer f density > 1 g/cm Other equip (of the pa Barriers a surface fii (of the pa Additives coatings (o	PET layer in combination with PE (PET/PE composite)	~	X		
Multilayer f density > 1 g/cm Other equip (of the pa Barriers a surface fii (of the pa Additives coatings (o	PP layer	X1	~		
Multilayer f density > 1 g/cm Other equip (of the pa Barriers a surface fii (of the pa Additives coatings (o	Other non-PO plastics	~	X		
Multilayer f density > 1 g/cm Other equip (of the pa Barriers a surface fii (of the pa Additives coatings (o	Non-polymeric layers (excluding aluminium foil and SiOx/AlOx/metallizations)		x		
(of the pa Barriers a surface fin (of the pa Additives coatings (o				х	
(of the pa Barriers a surface fin (of the pa Additives coatings (o	Dry strength agent: PVOH	х			P6.2
(of the pa Barriers a surface fin (of the pa Additives coatings (o	Dry strength agent: Starch (mass and surface)	Х			
Barriers a surface fin (of the pa Additives coatings (o	ent Dry strength agent: Other synthetic polymers	X			P6.2
surface fii (of the pa Additives coatings (o	r) Sizing agent, hydrophobic (mass and surface)	X X			DC 3
surface fii (of the pa Additives coatings (o	Wet strength agent, impregnating agent Mineral fillers	X			P6.2
surface fii (of the pa Additives coatings (o	Other equipment	X			
surface fii (of the pa Additives coatings (o	Metallisation	~		Х	
surface fii (of the pa Additives coatings (o	Mineral pigment coating incl. binding agent	X ²			
(of the pa Additives coatings (o		~	X		P8
Additives coatings (o			х		P8
coatings (o	r) Silicone coating			х	P6.2
coatings (o	Paraffin, wax, oil			х	P6.2
coatings (o	Other surface finish		Х		P6.2, P8
coatings (o	AIOx			Х	
	he			Х	
	SIUX			Х	
	Other additives and coatings		Х		
Adhesive				X	
multilay	Dispersion adhesive		V	Х	
structur	Dispersion adhesive Hot-melt adhesive application, criteria of EPRC scorecard fulfilled	х	X		P8
	Dispersion adhesive Hot-melt adhesive application, criteria of EPRC scorecard fulfilled Hot-melt adhesive application, criteria of EPRC scorecard not fulfilled	X	X		
	Dispersion adhesive Hot-melt adhesive application, criteria of EPRC scorecard fulfilled Hot-melt adhesive application, criteria of EPRC scorecard not fulfilled Starch-based adhesive		^	Х	
Decorati	Dispersion adhesive Hot-melt adhesive application, criteria of EPRC scorecard fulfilled Hot-melt adhesive application, criteria of EPRC scorecard not fulfilled Starch-based adhesive Direct printing, with substances on the EuPIA exclusion list Direct printing without substances on the EuPIA exclusion list	1		X	

		Minor components						
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material		
		PE	X ¹			P5		
		PET			Х			
		POM			Х			
Closure	Material	PP	X1			P5		
		PS			Х			
		Non-PO plastic, density < 1 g/cm ³		Х				
		Other plastic			Х			
		Other design parameters						
	Structure	Design different from standard structure (no wet-strength cardboard, PE ± aluminium)				P2		
		Metal pigments applied on a large scale (taking up > 50% of the projected				P2		
Other design	Decoration	surface) (lacquering, print, coating or embossing)				PZ		
parameters		> 50% fully printed black (including background) using soot-carbon-based				52		
		pigments				P2		
	PFAS	PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR		х				
¹ To be counted to	wards valuable mate	erial, individual evidence according to Annex 3.3 is recommended.		•				
2	coatings including bi	nding agents without a sealing function and without a function as a water va	ipour, oxygen o	r grease barrier a	re to be counte	d towards the		
	indie.	Examination of design-related losses of valuable	material					
	Requirement to tes			trictions must be	taken into acco	unt as		
P2	Requirement to test whether identifiability, including targeted separability, is given in sensor-based sorting. Restrictions must be taken into account as proportionate losses of valuable materials.							
	Only the packaging components containing valuable material that have a verified density of less than 1 g/cm ³ (including additives, masterbatches, fillers, or in							
P5	multilayer structure	s as well as printing inks) shall be counted towards available valuable mater	ial share.					
P6.2	suitable testing met material share. If, during the pulpin	h agents, impregnating agents, waxes, etc., are used for fibre-based packagir ihodology, regardless of the filling material. The non-recoverable fibrous ma g of fibre-based packaging, substances that cannot be classified as fibrous r lispersed), these shall be quantified by a suitable testing method and deduct	terial share mu naterial pass int	st be deducted to o the aqueous ph	o determine the ase (water-solu	available valuable ble, colloidally		
P8	For any deviating de	etermination in the sense that incompatible substances do not negatively af esting must be provided. Requirements for the implementation and docume	fect recyclabilit	y in individual cas	es, individual ev	idence produced		

A 2.3b Composite packaging of which the majority is paper/cardboard (excluding liquid packaging carton)

a. Scope of application

The following assessment principles, criteria and requirements apply to packaging with paper/paperboard/cardboard as the main material. These are, for example: laminated folding boxes, composite cans, coated papers, paper cups coated on both sides, wrappers.

b. Classification of design features incl. examination and test requirements

The most common design features of PPC packaging (paper/cardboard/cardboard) are listed below in a table, assigned to the columns 'valuable material, 'incompatibilities', 'separable or conditionally compatible', and 'examination of design-related losses of valuable materials'. The latter assignment may also be additive and refers to the corresponding examination or assessment regulation in the lower section of the table at the end of the chapter.

c. Calculation of recyclability

- 1. If no parameter is classified as 'incompatible', the recyclability corresponds numerically to the sum of the shares of the materials or formulations that are classified as 'valuable material'. This scenario represents the standard case.
- 2. If one or more design features are categorised as 'requiring examination, it must be determined whether they result in design-related valuable material losses. If such losses can be ruled out through examination, the feature has no impact on the calculation in accordance with section 1. Otherwise, design-related losses must be determined and deducted.
- 3. If one or more design features are categorised under 'incompatibilities', the recyclability is 0%.

d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

Individual evidence of the existence of a recycling infrastructure is recommended for the declaration of recyclability.

		Main body				
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuab material
		Corrugated fibreboard	Х			
		Kraft paper	х			
		Moulded pulp, highly compressed	Х			P6.2
		Moulded pulp, slightly compressed	Х			
		Glassine	Х			
		Bogus paper	Х			
	Material	Wrapping tissue	х			
	Wateria	Bitumen paper		Х		
		Oil paper		Х		
		Wax/Paraffin paper		Х		
		Paper, paperboard, cardboard (PPC), other sorts	х			
		Foamed, extruded, thermoformed component made of starch			Х	
		Aluminium lamination			х	P0.1
		Plastic film (extrusion lamination, film lamination)			х	
	Dyeing	Dyed black, using soot-carbon-based pigments				P2
	-18	Dry strength agent: PVOH	Х			P6.2
		Dry strength agent: Starch (mass and surface)	x			
		Dry strength agent: Other synthetic polymers	<u>х</u>		_	P6.2
	Other equipment	Sizing agent, hydrophobic (mass and surface)	x X			10.2
	(of the paper)	Wet strength agent, impregnating agent	X X			P6.2
		Mineral fillers	×			F0.2
		Other equipment	×			
/lain body		Metallisation	^		Х	
			Х*		X	
		Mineral pigment coating incl. binding agent	Χ*	, v		50
	Barriers and	Polymer dispersion coating (thermoplastic)		X		P8
	surface finish	Polymer mineral coating (thermoplastic)		Х		P8
	(of the paper)	Silicone coating			X	P6.2
		Paraffin, wax, oil			Х	P6.2
		Other surface finish		X		P6.2, P8
	Additives and	AlOx			Х	
	coatings (of the	Metallisation			х	
	plastic layer)	SiOx			х	
	Adhesive in multilayer structure	Dispersion adhesive			Х	
		Hot-melt adhesive application, criteria of EPRC scorecard fulfilled			Х	
		Hot-melt adhesive application, criteria of EPRC scorecard not fulfilled		Х		P8
		Starch-based adhesive	х			
		Direct printing, with substances on the EuPIA exclusion list		Х		
		Direct printing, without substances on the EuPIA exclusion list			Х	
	Decoration	Foil stamping			х	
		Lacquer			Х	
	Decoration	Fully languaged surface				
		Fully lacquered surface				
		 Excluding clear protective lacquer up to a thickness of <= 5 micrometers 		1		P2

		Minor components											
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material							
		Paper (not equipped with wet strength agent)	Х										
	Material	Paper (equipped with wet strength agent)	х			P6.2							
		Plastic			X								
		Dispersion adhesive			X								
Label	Adhesive	Hot-melt adhesive application, criteria of EPRC scorecard fulfilled Hot-melt adhesive application, criteria of EPRC scorecard not fulfilled		Х	Х	P8							
		Starch-based adhesive	Х	^		го							
		Direct printing, with substances on the EuPIA exclusion list	~	х									
	Decoration	Direct printing, without substances on the EuPIA exclusion list			Х								
		Lacquer			Х								
Seam adhesion /		Dispersion adhesive			х								
	Adhesive	Hot-melt adhesive application, criteria of EPRC scorecard fulfilled			Х								
Attachment		Hot-melt adhesive application, criteria of EPRC scorecard not fulfilled		Х		P8							
		Starch-based adhesive Cellophane	Х		Х								
Minor		Plastic (non-specific)			× ×								
component (not	Material	PVOH			X								
fibre-based)		Non-ferrous metal, stainless steel, magnetic materials, steel			x	P0.1, P0.2							
	1	Other design parameters				· · ·							
	1	Plastic-coated surface											
	Structure	- Excluding internal bag layers if the grammage is at least 100 g/m ²				P2							
		Metal pigments applied on a large scale (taking up > 50% of the projected											
	Decoration	surface) (lacquering, print, coating or embossing)				P2							
Other design	Decoration	> 50% fully printed black (including background) using soot-carbon-based				P2							
parameters		pigments				12							
••••••	Packaged good	Non-dry packaged good – i.e. fibre-based packaging for example for				P6.1							
		liquids, certain foodstuffs, oils and emulsions				DC 2							
	Structure	Double-sided barrier coating PFAS share in food-contact packaging ≥ limit value according to Article 5,				P6.2							
	PFAS	paragraph 5 PPWR		х									
* Mineral pigment	coatings including bi	nding agents without a sealing function and without a function as a water v	apour, oxygen o	r grease barrier a	re to be counte	d towards the							
valuable material s				-									
		Examination of design-related losses of valuable	material										
	Presence of an alum	inium foil layer; examination required (test if necessary) whether the desig	n causes sorting	into aluminium f	raction. If so, a	complete loss of							
20.1		r packaging category 3 has to be factored.	-										
20.2		agnetic components ≥ 5% by weight in relation to the object of assessment;	; examination re	quired (test if ne	cessary) whethe	r the design causes							
20.2	sorting into ferrous	metal fraction. If so, a complete loss of valuable material for packaging cat	egory 3 has to b	e factored.									
2		whether identifiability, including targeted separability, is given in sensor-ba	sed sorting. Res	trictions must be	taken into acco	ount as							
-	proportionate losse	s of valuable materials.											
					5 1 1								
		he recyclability of fibre-based packaging, the gradual defiberability of the fi or liquid packaging board) for non-dry contents – i.e. fibre-based packaging											
	evidence must be provided that the operating conditions (for example, dwell time and other operating parameters in the processing of the material) of the respective recovery path (PPC or lightweight packaging collection) result in the dispersion of the fibrous material, and that the fibrous material is recycled. This												
96.1		e evidence does not apply to fibre-based packaging that is typically filled wi											
		flour or sugar. The non-recoverable fibrous material share must be deducted											
	If, during the pulping	of fibre-based packaging, substances that cannot be classified as fibrous n	naterial pass inte	the aqueous ph	ase (water-solu	ble, colloidally							
	discolude or finally d	ispersed), these shall be quantified by a suitable testing method and deduct	ed when calcula	ting the fibrous n	naterial recover	y rate.							
	uissoiveu or rinery u												
	dissolved of fillery d					Where wet-strength agents, impregnating agents, waxes, etc., are used for fibre-based packaging, and in the case of paper or cartons (excluding liquid packaging							
		agents, impregnating agents, waxes, etc., are used for fibre-based packagi	ng, and in the ca	se of paper or ca	rtons (excluding	liquid packaging							
	Where wet-strength carton) coated or m	etallised on both sides, the determination of recyclability needs to be based	d on a suitable t	esting methodolo									
96.2	Where wet-strength carton) coated or m material. The non-m	etallised on both sides, the determination of recyclability needs to be based ecoverable fibrous material share must be deducted to determine the availa	d on a suitable t able valuable ma	esting methodolo iterial share.	gy, regardless o	f the filling							
26.2	Where wet-strength carton) coated or m material. The non-m If, during the pulping	etallised on both sides, the determination of recyclability needs to be base ecoverable fibrous material share must be deducted to determine the availa of fibre-based packaging, substances that cannot be classified as fibrous n	d on a suitable t able valuable ma naterial pass inte	esting methodolo aterial share. the aqueous ph	egy, regardless c ase (water-solu	f the filling ble, colloidally							
26.2	Where wet-strength carton) coated or m material. The non-m If, during the pulping	etallised on both sides, the determination of recyclability needs to be based ecoverable fibrous material share must be deducted to determine the availa	d on a suitable t able valuable ma naterial pass inte	esting methodolo aterial share. the aqueous ph	egy, regardless c ase (water-solu	f the filling ble, colloidally							
	Where wet-strength carton) coated or m material. The non-rr If, during the pulping dissolved or finely d	etallised on both sides, the determination of recyclability needs to be base ecoverable fibrous material share must be deducted to determine the availa of fibre-based packaging, substances that cannot be classified as fibrous n	d on a suitable t able valuable ma naterial pass into ed when calcula	esting methodolo aterial share. the aqueous ph ting the fibrous n	gy, regardless o ase (water-solu naterial recover	f the filling ble, colloidally y rate.							
6.2	Where wet-strength carton) coated or m material. The non-r- If, during the pulping dissolved or finely d For any deviating de	etallised on both sides, the determination of recyclability needs to be base ecoverable fibrous material share must be deducted to determine the availa of fibre-based packaging, substances that cannot be classified as fibrous n ispersed), these shall be quantified by a suitable testing method and deduct	d on a suitable t able valuable ma naterial pass inte ed when calcula fect recyclability	esting methodolo iterial share. b the aqueous ph ting the fibrous n y in individual cas	gy, regardless o ase (water-solu naterial recover es, individual ev	f the filling ble, colloidally y rate. idence produced							
	Where wet-strength carton) coated or m material. The non-r- If, during the pulping dissolved or finely d For any deviating de	etallised on both sides, the determination of recyclability needs to be base ecoverable fibrous material share must be deducted to determine the availa of fibre-based packaging, substances that cannot be classified as fibrous n ispersed), these shall be quantified by a suitable testing method and deduct termination in the sense that incompatible substances do not negatively af esting must be provided. Requirements for the implementation and docume	d on a suitable t able valuable ma naterial pass intr ed when calcula fect recyclabilit entation of an in	esting methodolo iterial share. b the aqueous ph ting the fibrous n y in individual cas	gy, regardless o ase (water-solu naterial recover es, individual ev	f the filling ble, colloidally y rate. idence produced							
	Where wet-strength carton) coated or m material. The non-rr If, during the pulping dissolved or finely d For any deviating de through analytical tr	etallised on both sides, the determination of recyclability needs to be base ecoverable fibrous material share must be deducted to determine the availa of fibre-based packaging, substances that cannot be classified as fibrous n ispersed), these shall be quantified by a suitable testing method and deduct termination in the sense that incompatible substances do not negatively af	d on a suitable t able valuable ma naterial pass intr ed when calcula fect recyclabilit entation of an in	esting methodolo iterial share. b the aqueous ph ting the fibrous n y in individual cas	gy, regardless o ase (water-solu naterial recover es, individual ev	f the filling ble, colloidally y rate. idence produced							

A 2.4 Steel and composite packaging of which the majority is steel

a. Scope of application

The following assessment principles, criteria and requirements apply to packaging with steel as the main material. These are, for example: food cans, aerosol cans, paint and colour cans, buckets.

b. Classification of design features incl. examination and test requirements

The most common design features of tinplate and sheet metal packaging are listed below in a table, assigned to the columns 'valuable material, 'incompatibilities', 'separable or conditionally compatible', and 'examination of design-related losses of valuable materials'. The latter assignment may also be additive and refers to the corresponding examination or assessment regulation in the lower section of the table at the end of the chapter.

c. Calculation of recyclability

- 1. If no parameter is classified as 'incompatible', the recyclability corresponds numerically to the sum of the shares of the materials or formulations that are classified as 'valuable material'. This scenario represents the standard case.
- 2. If one or more design features are categorised as 'requiring examination, it must be determined whether they result in design-related valuable material losses. If such losses can be ruled out through examination, the feature has no impact on the calculation in accordance with section 1. Otherwise, design-related losses must be determined and deducted.
- 3. If one or more design features are categorised under 'incompatibilities', the recyclability is 0%.
- d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

No individual evidence of the existence of a recycling infrastructure is required for the declaration of recyclability.

	Jieei	and composite packaging of which the majority is steel Referen	nce applicatio	on: Steel produc	ts	
		Main body				
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material
		Steel	х			
		Steel, chrome-plated	х			
		Steel, tin-plated	Х			
	Material	Aluminium	х			
Main body		Plastic			х	
-		Paper			Х	
		Direct printing			х	
	Printing, lacquer	Lacquer (inner and external lacquer)			x	
	and coatings	Other		1	×	
		Minor components				
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material
		Steel	Х			
		Steel, chrome-plated	Х			
		Steel, tin-plated	Х			
Closure/		Stainless steel	Х			
Functional head	Material	Aluminium	Х			
Functional neau		Non-ferrous metal, other	х			
		Glass			Х	
		Plastic			х	
		Other			х	
	Material	Plastic			х	
		Paper			х	
		Other material			Х	
Label	Adhesive application	Adhesive			х	
	application	Printing ink			× ×	
	Decoration	Foil stamping		+	X X	
					× ×	
		Lacquer Examination of design-related losses of valuable	material		^	
	Examination of ferro	pmagnetic properties: For non-ferromagnetic packaging, Annex 2.5/2.6 is to				
P4		magnetic properties. For non remonagnetic packaging, Alliex 2.3/2.013 to	, se applied.			
P4		Scope of application of the design parameters cate	orised as P			

A 2.5/2.6 Aluminium and composite packaging of which the majority is aluminium – rigid, semi-rigid and flexible

a. Scope of application

The following assessment principles, criteria and requirements apply to packaging with aluminium as the main material. These are, for example: food cans, aerosol cans, aluminium trays and aluminium tubes.

b. Classification of design features incl. examination and test requirements

The most common design features of aluminium packaging are listed below in a table, assigned to the columns 'valuable material, 'incompatibilities', 'separable or conditionally compatible', and 'examination of design-related losses of valuable materials'. The latter assignment may also be additive and refers to the corresponding examination or assessment regulation in the lower section of the table at the end of the chapter.

c. Calculation of recyclability

- 1. If no parameter is classified as 'incompatible', the recyclability corresponds numerically to the sum of the shares of the materials or formulations that are classified as 'valuable material'. This scenario represents the standard case.
- 2. If one or more design features are categorised as 'requiring examination, it must be determined whether they result in design-related valuable material losses. If such losses can be ruled out through examination, the feature has no impact on the calculation in accordance with section 1. Otherwise, design-related losses must be determined and deducted.
- 3. If one or more design features are categorised under 'incompatibilities', the recyclability is 0%.

d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

No individual evidence of the existence of a recycling infrastructure is required for the declaration of recyclability.

Steel X Steel, chrome-plated X Steel, tin-plated X Other X Paper International Other material International Adhesive International Adhesive International Printing ink International Polecoration International Foil stamping International International Start International Other design parameters PFAS		
Main body Non-ferrous metal, other X Main body Plastic X Printing, lacque and coatings Steel, tin-plated X Printing, lacque and coatings Direct printing Lacquer (inner and external lacquer) X Valuable and coatings Direct printing Lacquer (inner and external lacquer) X Valuable material Minor components Valuable material Incompatibiliti es Closure/ unctional head Material Aluminium Glass X X Plastic X X X X Stael, tin-plated X X X X Material Plastic X X X X Label Material Plastic X X X X Label Plastic X X X X X	ti Separable or conditionally compatible	Examination of design-related losses of valuab material
Main body Plastic Paper Image: steel in the stee		
Main body Material Paper Steel X Main body Steel, throne-plated Steel, throne-plated X X Printing, lacquer and coatings Direct printing Lacquer (inner and external lacquer) X X Direct printing Lacquer (inner and external lacquer) X X Other Ninor components Incompatibility es Incompatibility es Material Aluminium X X Material Aluminium X X Glass Incompatibility es Incompatibility es Incompatibility es Plastic X X X Non-ferrous metal, other X X Steel, chrome-plated X X Other X X Label Adhesive application Adhesive X Diccupart Incuparterial <td></td> <td>P3</td>		P3
Main body Steel X Printing, lacquer and coatings Direct printing Lacquer (inner and external lacquer) X X Printing, lacquer and coatings Direct printing Lacquer (inner and external lacquer) X X Closure/ unctional head Aluminium X X X Material Aluminium X X X Material Aluminium X X X Valuable material Aluminium X X X Plastic X X X X Steel, chrome-plated X X X X Steel, chrome-plated X X X X Steel, chrome-plated X X X X Adhesive application Plastic X X X X Clober X X X X X X Label Material Plastic X X X X Decoration Plastic	х	
Main body Steel, chrome-plated X Printing, lacquer and coatings Steel, tin-plated X Direct printing and coatings Direct printing (Lacquer (Inner and external lacquer) (Other Image: Components Minor components Valuable material Auminium X Glass Image: Components Plastic X Plastic X Non-ferrous metal, other X Steel, chrome-plated X Other X Plastic X Other X Other X Paper Image: Components Adhesive application Adhesive Plastic Paper Image: Components Other material Image: Components Decoration Foll stamping Lacquer Image: Componenters Other design parameters PFAS	Х	
Steel, chrome-plated X Printing, lacque and coatings Direct printing N Lacquer (inner and external lacquer) Image: Components Minor components Valuable material Closure/ unctional head Aluminium X Glass Image: Components Non-ferrous metal, other X Material Aluminium X Image: Components Steel, chrome-plated X Image: Components Image: Components Lacquer (inner and external lacquer) X Image: Components Image: Components Lacquer (inner and external lacquer) X X Image: Components Image: Consume / Junctional head Aluminium X Image: Components Image: Components Material Aluminium X Image: Components Image: Components Image: Components Label Material Aluminium X Image: Components Image: Components Label Material Paper Image: Components X Image: Components Label Adhesive Adhesive Adhesive Image: Componenters </td <td></td> <td></td>		
Printing, lacquer and coatings Direct printing Lacquer (inner and external lacquer) Other Image: Components Minor components Valuable material Incompatibility es Closure/ unctional head Aluminium X Incompatibility es Glass Image: Compatibility es Image: Compatibility es Image: Compatibility es Material Aluminium X Image: Compatibility es Image: Compatibility es Material Aluminium X Image: Compatibility es Image: Compatibility es Label Material Material Plastic Image: Compatibility Steel, chrome-plated X Label Material Paper Image: Compatibility Steel, Chrome-plated X Image: Compatibility Steel, Chrome-plated Label Adhesive application placation Adhesive Foil stamping Lacquer Image: Compatibility Steel, Compatibilit		
Printing, lacquer and coatings Lacquer (inner and external lacquer) Other Image: Components Minor components Valuable material Incompatibility es Aluminium X Glass 1 Plastic 1 Non-ferrous metal, other X Steel X Steel X Steel, chrome-plated X Steel, throme-plated X Other 1 Plastic 1 Other 1 Plastic 1 Steel, throme-plated X Steel, throme-plated X Other 1 Plastic 1 Paper 1 Other material 1 Adhesive 1 application 2 Plastic 1 Decoration 1 Plastic 1 Other material 1 Other material 1 Itaquer 1 Other material 1 Itaquer 1		
and coatings Lacquer (inner and external lacquer) incompatibility Other Minor components Incompatibility Image: State	х	
Closure/ unctional head Aluminium X Material Aluminium X Steel Steel X Steel X X Steel, chrome-plated X X Steel, chrome-plated X X Other X X Plastic X X Steel, chrome-plated X X Steel, chrome-plated X X Other X X Plastic X X Steel, chrome-plated X X Steel, chrome-plated X X Other X X Plastic X X Other material X X Other material X X Other material X X Decoration Foil stamping X Icquer X X Decoration Foil stamping X Icquer X X Decoration Foil stamping X Icquer	х	
Closure/ unctional head Aluminium X Incompatibility es Material Aluminium X Plastic Non-ferrous metal, other X Steel X Steel, chrome-plated X Steel, chrome-plated X Steel, tim-plated X Steel, tim-plated X Other A Paper Other material Adhesive Adhesive Adhesive Decoration Foil stamping Lacquer Other design parameters PFAS PFAS share in food-contact packaging 2 limit value according to Article 5, paragraph 5 PPWR X X Examination of design-related losses of valuable material	Х	
Closure/ unctional head Aluminium Glass X X Plastic Non-ferrous metal, other X X Steel X X X Steel, chrome-plated X X X Steel, chrome-plated X X X Other X X X Paper X X X Other material Other material X X Paper Adhesive X X Other material Adhesive X X Paper Inclasses Inclasses Inclasses Other material Inclasses Inclasses Inclasses		
Closure/ unctional head Glass Image: Closure/ Plastic Non-ferrous metal, other X Non-ferrous metal, other X Image: Closure/ Stailess steel X Stailess steel X Image: Closure/ Steel, timeplated X Steel, timeplated X Image: Closure/ Steel, timeplated X Material Plastic Image: Closure/ Other Image: Closure/ Paper Image: Closure/ Other Image: Closure/ Closure/ Other material Image: Closure/ Closure/ Other material Image: Closure/ Closure/ Other material Image: Closure/ Closure/ Other material Image: Closure/ Closure/ Closure/ Decoration Image: Closure/ Plastic Image: Closure/ Closure/ Closure/ Distampling Image: Closure/ Closure/ Closure/ Distampling Image: Closure/ Closure/ Closure/ Closure/ Closure/ Closure/ Distampling Image: Closure/ C	ti Separable or conditionally compatible	Examination of design-related losses of valuab material
Closure/ unctional head Plastic Image: Closure/ Non-ferrous metal, other X Material Non-ferrous metal, other X Image: Closure/ Steel X Steel X Image: Closure/ Steel, chrome-plated X Image: Closure/ Steel, chrome-plated X Steel, chrome-plated X Image: Closure/ Steel, chrome-plated X Image: Closure/ Steel, chrome-plated Image: Closure/ Steel, chrome-plated<		
Non-ferrous metal, other X Stainless steel X Steel, chrome-plated X Steel, chrome-plated X Steel, chrome-plated X Other X Plastic X Paper X Other material X Paper X Other material X Printing ink X Foil stamping X Lacquer X Other design parameters PFAS PFAS PPWR Examination of design-related losses of valuable material X	Х	
Losure/ unctional head Material Stainless steel X Steel, chrome-plated X X Steel, thr-plated X X Other Other X Plastic Paper X Other material X X Paper X X Other material X X Paper X X Other material X X Printing ink X X Foil stamping X X Lacquer X X Other design parameters PFAS Share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR X Examination of design-related losses of valuable material	Х	
Material Stainless steel X Steel X Steel, throme-plated X Other X Other material Paper Other material C Adhesive application Adhesive foil stamping Lacquer Image: Constant of the sign parameters Other design parameters PFAS PFAS PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR X		
Steel X Steel, chrome-plated X Steel, thr-plated X Other Image: Contemplated Adhesive Plastic Other material Image: Contemplated Adhesive Plastic Other material Image: Contemplated Adhesive Image: Contemplated Decoration Printing ink Foil stamping Image: Contemplated Lacquer Image: Contemplated Other design parameters PFAS PFAS PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR		
Steel, tin-plated X Other Other Plastic Paper Paper Other Other material Other Adhesive Other application Printing ink Pecoration Foil stamping Lacquer Image: Constraint of the sign parameters Other design parameters PFAS PFAS PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR Examination of design-related losses of valuable material		
Label Plastic Image: Content of the paper Material Plastic Image: Content of the paper Adhesive Image: Content of the paper Image: Content of the paper Adhesive Adhesive Image: Content of the paper Adhesive Adhesive Image: Content of the paper Decoration Printing ink Image: Content of the paper Decoration Printing ink Image: Content of the paper Cother design parameters PFAS Press share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR Cother design - related losses of valuable material X		
Other Other Initial Paper Paper Initial Other material Paper Initial Adhesive Other material Initial Adhesive Printing ink Initial Decoration Foil stamping Lacquer Initial Other design parameters PFAS PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR X		
Material Paper Other material Label Adhesive application Adhesive Image: Constraint of the sign parameters Decoration Foil stamping Lacquer Image: Constraint of the sign parameters Other design parameters PFAS PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR X Examination of design-related losses of valuable material	х	
Label Adhesive application Adhesive Image: Constraint of the sign parameters Decoration Printing ink Foil stamping Lacquer Image: Constraint of the sign parameters Image: Constraint of the sign parameters Other design parameters PFAS PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR X Examination of design-related losses of valuable material	х	
Label Adhesive application Adhesive Decoration Printing ink Foil stamping Lacquer Image: Constraint of the sign parameters Other design parameters Other design parameters PFAS PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR X Examination of design-related losses of valuable material	х	
Label application Adhesive application Printing ink Image: Constraint of the sign parameters Decoration Foil stamping Image: Constraint of the sign parameters Other design prameters PFAS PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR Decoration PFAS PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR Examination of design-related losses of valuable material	х	
Printing ink Image: Constraint of the sign parameters PFAS PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR Examination of design-related losses of valuable material	x	
Decoration Foil stamping Lacquer Image: Constraint of the sign parameters Other design parameters PFAS PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR X Barameters PFAS PFAS X	x	
Lacquer Image: Control of the contr	х	
Other design parameters PFAS PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR X Examination of design-related losses of valuable material Examination of design-related losses of valuable material X	х	
parameters PFAS paragraph 5 PPWR X Examination of design-related losses of valuable material		•
parameters paragraph 5 PPWR parameters paragraph 5 PPWR Examination of design-related losses of valuable material		
Examination of effective electrical conductivity (eddy current separator test): Non-sortable packaging is to be assessed with a		
	recyclability = 0 %	%.
Scope of application of the design parameters categorised as P		

A 2.7 Bottles made of PET-A – rigid (transparent clear/coloured)

a. Scope of application

The following assessment principles, criteria and requirements apply to transparent PET bottles.

b. Classification of design features incl. examination and test requirements

The most common design features of transparent PET bottles are listed below in a table, assigned to the columns 'valuable material, 'incompatibilities', 'separable or conditionally compatible', and 'examination of design-related losses of valuable materials'. The latter assignment may also be additive and refers to the corresponding examination or assessment regulation in the lower section of the table at the end of the chapter.

c. Calculation of recyclability

- 1. If no parameter is classified as 'incompatible', the recyclability corresponds numerically to the sum of the shares of the materials or formulations that are classified as 'valuable material'. This scenario represents the standard case.
- 2. If one or more design features are categorised as 'requiring examination, it must be determined whether they result in design-related valuable material losses. If such losses can be ruled out through examination, the feature has no impact on the calculation in accordance with section 1. Otherwise, design-related losses must be determined and deducted.
- 3. If one or more design features are categorised under 'incompatibilities', the recyclability is 0%.
- d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

		Main body				
		PET-A	Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material
	Material		Х	× ×		
	wateria	PET-G rPET PET(REC)	х	Х		
			~	V		
		EVOH layer		X		
		PA layer		X		
	Material in multilayer, density < 1 g/cm ³	Multilayer structure, density < 1 g/cm³			х	P5
	Structure	Multilayer structure				P2
	Masterbatch or	Masterbatch, colour batch	х			
	colour batch	Dyeing using soot-carbon-based pigments (also when used for internal layers)				P2
		AA-blocker	х			
Main body		Anti-block	Х			
		Nanocomposite	Х			
	Additives	Oxygen scavenger (PA free)	х			
		PA additivation		Х		
		UV stabilizers	х			
		Other blended barriers		Х		
		AlOx			х	
		Antifog coating			х	
	Coating	EVOH coating		Х		
	Coating	PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR		х		
		SiOx			Х	
	Decoration	Direct printing (excluding production codes, 'best before' dates and UFI codes)		x		
		Minor components				
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material
		rigid HDPE, rHDPE from closures and functional elements	Х			
		rigid PP, rPP from closures and functional elements	Х			
		PA (e.g. in applicators)		х		
		PEF from closures and functional elements	х			
Closure/		Aluminium		Х		
functional head	Material	Glass			Х	
unenonarneau		High-alloy steels, non-ferromagnetic		Х		
		Steel, ferromagnetic			Х	P0.2
		Silicone components, density > 1 g/cm ³		Х		
		Silicone components, density > 1 g/cm ³ Elastomer components, density > 1 g/cm ³		х		
		Silicone components, density > 1 g/cm ³ Elastomer components, density > 1 g/cm ³ Other polymer components, density > 1 g/cm ³ (except PET-A)		X X		P8
		Silicone components, density > 1 g/cm ³ Elastomer components, density > 1 g/cm ³ Other polymer components, density > 1 g/cm ³ (except PET-A) Mono/multilayer film incl. print and lacquer, density > 1 g/cm ³		х		P8
	Material	Silicone components, density > 1 g/cm ³ Elastomer components, density > 1 g/cm ³ Other polymer components, density > 1 g/cm ³ (except PET-A) Mono/multilayer film incl. print and lacquer, density > 1 g/cm ³ Mono/multilayer film incl. print and varnish, density < 1 g/cm ³		X X	X	P8
	Material	Silicone components, density > 1 g/cm ³ Elastomer components, density > 1 g/cm ³ Other polymer components, density > 1 g/cm ³ (except PET-A) Mono/multilayer film incl. print and lacquer, density > 1 g/cm ³ Mono/multilayer film incl. print and varnish, density < 1 g/cm ³ Paper label (not wet-strength / wet-strength equipped)		X X	X X	P8
Label/sleeve	Material	Silicone components, density > 1 g/cm ³ Elastomer components, density > 1 g/cm ³ Other polymer components, density > 1 g/cm ³ (except PET-A) Mono/multilayer film incl. print and lacquer, density > 1 g/cm ³ Mono/multilayer film incl. print and varnish, density < 1 g/cm ³ Paper label (not wet-strength / wet-strength equipped) Large labels (taking up > 50% of the projected surface) made from foreign		X X		
Label/sleeve		Silicone components, density > 1 g/cm ³ Elastomer components, density > 1 g/cm ³ Other polymer components, density > 1 g/cm ³ (except PET-A) Mono/multilayer film incl. print and lacquer, density > 1 g/cm ³ Mono/multilayer film incl. print and varnish, density < 1 g/cm ³ Paper label (not wet-strength / wet-strength equipped) Large labels (taking up > 50% of the projected surface) made from foreign material		X X		P8
Label/sleeve	Material	Silicone components, density > 1 g/cm ³ Elastomer components, density > 1 g/cm ³ Other polymer components, density > 1 g/cm ³ (except PET-A) Mono/multilayer film incl. print and lacquer, density > 1 g/cm ³ Mono/multilayer film incl. print and varnish, density < 1 g/cm ³ Paper label (not wet-strength / wet-strength equipped) Large labels (taking up > 50% of the projected surface) made from foreign material Full sleeve labels (excluding full sleeves of PET hollow bodies without a		X X		P2
Label/sleeve		Silicone components, density > 1 g/cm ³ Elastomer components, density > 1 g/cm ³ Other polymer components, density > 1 g/cm ³ (except PET-A) Mono/multilayer film incl. print and lacquer, density > 1 g/cm ³ Mono/multilayer film incl. print and varnish, density < 1 g/cm ³ Paper label (not wet-strength / wet-strength equipped) Large labels (taking up > 50% of the projected surface) made from foreign material Full sleeve labels (excluding full sleeves of PET hollow bodies without a light barrier – clear or light blue – where OPS PET or PO sleeves are used)		X X X		
Label/sleeve Label		Silicone components, density > 1 g/cm ³ Elastomer components, density > 1 g/cm ³ Other polymer components, density > 1 g/cm ³ (except PET-A) Mono/multilayer film incl. print and lacquer, density > 1 g/cm ³ Mono/multilayer film incl. print and varnish, density < 1 g/cm ³ Paper label (not wet-strength / wet-strength equipped) Large labels (taking up > 50% of the projected surface) made from foreign material Full sleeve labels (excluding full sleeves of PET hollow bodies without a		X X		P2

		Other design parameters			•			
	Structure	Different types of plastic used on front and back sides				P2		
Other design	Decoration	> 50% fully printed black (including background) using soot-carbon-based pigments				P2		
parameters	Decoration	Metal pigments applied on a large scale (taking up > 50% of the projected surface) (lacquering, coating or embossing))				P2		
	PFAS	PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR		x				
		Examination of design-related losses of valuable	material					
P0.2		Presence of ferromagnetic components ≥ 5% by weight in relation to the object of assessment; examination required (test if necessary) whether the design causes sorting into ferrous metal fraction. If so, a complete loss of valuable material for packaging category 7 has to be factored.						
P2		Requirement to test whether identifiability, including targeted separability, is given in sensor-based sorting. Restrictions must be taken into account as proportionate losses of valuable materials.						
Ρ5	printing inks) shall Shares of PO-valua	-valuable material with a verified density of larger than 1 g/cm ³ (including add be counted towards available valuable material share. Ible material with a verified density of less than 1 g/cm ³ (including additives, r ted towards available valuable material share.	,					
P8		letermination in the sense that incompatible substances do not negatively aff testing must be provided. Requirements for the implementation and docume		•				
	-	Scope of application of the design parameters categ	orised as P					
P2		cable to large-format transport packaging and to plastic packaging for which able packaging in deposit systems, etc.).	a separate plas	stic-type-only mo	no-collection is	a prerequisite for		
P5		cable to large-format transport packaging or reusable packaging such as crate which no density separation is carried out in the recycling process.	es for drinks bo	ttles, which are r	ecycled via a ser	parate mono-		

A 2.8a Thermoformed packaging made of PET-A, PET-C – rigid (transparent clear/coloured, opaque)

a. Scope of application

The following assessment principles, criteria and requirements apply to packaging with PET as the main material. These are, for example: trays, snap-on cap, cups, blisters and other thermoforms.

b. Classification of design features incl. examination and test requirements

The most common design features of PET thermoformed packaging are listed below in a table, assigned to the columns 'valuable material, 'incompatibilities', 'separable or conditionally compatible', and 'examination of design-related losses of valuable materials'. The latter assignment may also be additive and refers to the corresponding examination or assessment regulation in the lower section of the table at the end of the chapter.

c. Calculation of recyclability

- 1. If no parameter is classified as 'incompatible', the recyclability corresponds numerically to the sum of the shares of the materials or formulations that are classified as 'valuable material'. This scenario represents the standard case.
- 2. If one or more design features are categorised as 'requiring examination, it must be determined whether they result in design-related valuable material losses. If such losses can be ruled out through examination, the feature has no impact on the calculation in accordance with section 1. Otherwise, design-related losses must be determined and deducted.
- 3. If one or more design features are categorised under 'incompatibilities', the recyclability is 0%.

d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

		Main body				
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination o design-related losses of valuab material
		PET-A	х			
		PET-A opaque	Х			
		PET-C	х			
	Material	PET-G		х		
		rPET PET(REC)	x			
		PEF	X			
		PBT	х			
		Aluminium layer		Х		P0.1
		EVOH layer		X		
		Ionomer layer		X		
		PA layer		х		
		PBT layer	Х			
	Material in	PE layer			Х	
	multilayer,	PE-X layer		X		
	density > 1 g/cm ³	PE peel layer (non-specific)		Х		
		PEF layer	Х			
		PP layer		X		
		PP Peel layer (non-specific)		X		
		PVDC layer		X		
		PVOH layer		Х		
	Material in				м	
	multilayer,	Multilayer structure, density < 1 g/cm ³			Х	P5
	density < 1 g/cm ³	NALVE BUILD OF BUILD	×			
	Masterbatch or colour batch	Masterbatch, colour batch	Х			
/lain body		Dyeing using soot-carbon-based pigments (also when used for internal layers)				P2
		Absorber (mineral)	х			P5
	Fillers, mineral	Lime, Chalk	X			P5
	additives and	Talc	X			P5
	absorbers	Titanium dioxide	X			P5
		AA-blocker	x			
		Anti-block	X			
		Bio-/oxo-/photodegradable additives	~	х	_	
		Nanocomposite	Х	~		
	Additives	Oxygen scavenger (PA free)	x			
		PA additivation	~	Х		
		UV stabilizers	х			
		Other blended barriers		х		
		Acrylic-based coating		x		
		AlOx		~	х	
		EVOH coating		х		
		PVOH coating		x		
	Coating	Sealing edge coating (wash-off capable in hot wash, 80 °C)	1		Х	
		Sealing edge coating (wash off capable in hot wash, 80 °C)		х	- •	
		SiOx	1		Х	
		Other coatings	1	х	~	P8
	Adhesive		1			
	application	Adhesive		х		
			1			

		Minor components				
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material
		Monolayer film/coextruded multilayer film made of PET (except PET-G),	х			
		density > 1 g/cm ³ , unprinted and not lacquered Multilayer film made of PET, adhesive-laminated, density > 1 g/cm ³ , unprinted and not lacquered		x		P8
		Coextruded multilayer film made of PET (except PET-G)/PO, unprinted and				
	Material	not lacquered			Х	
Label/ sealing film		Mono/multilayer film incl. print and lacquer, density > 1 g/cm ³ Mono/multilayer film incl. print and lacquer, density < 1 g/cm ³ ,		X	Х	
		removable without residue in alkaline hot wash, 80 °C			~	
		Mono/multilayer film incl. print and lacquer, density < 1 g/cm ³ ,		х		
		not removable without residue in alkaline hot wash, 80 °C			v	
		Paper label (not wet-strength / wet-strength equipped)			Х	
	Coverage	Large labels (taking up > 50% of the projected surface) made from foreign material				P2
		AA-blocker	Х			
		Anti-block	X X			
		Nanocomposite	x X			
	Additives	Oxygen scavenger (PA free)	X			
		PA additivation		х		
		UV stabilizers	Х			
Sealing film		Other blended barriers		Х		
	Coating	Acrylic-based coating		Х		
		AlOx			Х	
		PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR		x		
		SiOx			Х	
		Other coatings		Х		P8
	Material	Absorbent			Х	
Absorbent		PE, density < 1 g/cm ³			Х	
ad/bubble pad		PP, density < 1 g/cm ³			X	
		XPS, density < 1 g/cm ³			<u>X</u>	
		Cellulose		×	Х	
abel/absorbent	Adhesive	Adhesive application (wash-off capability unknown)		Х	V	P8
ad/bubble pad	application	Adhesive application (wash-off capable in alkaline hot wash, 80 °C) Adhesive application (not wash-off capable in alkaline hot wash, 80 °C)		Х	Х	
		· ·		^		
		Other design parameters				1
	Structure	Different types of plastic used on front and back sides				P2
Other design	Decoration	> 50% fully printed black (including background) using soot-carbon-based pigments				P2
parameters		Metal pigments applied on a large scale (taking up > 50% of the projected surface) (lacquering, coating or embossing))				P2
	PFAS	PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR		x		
		Examination of design-related losses of valuable	material			
0.1		minium foil layer; examination required (test if necessary) whether the design for packaging category 8 has to be factored.	causes sortin	g into aluminium f	raction. If so, a	complete loss of
2		st whether identifiability, including targeted separability, is given in sensor-bas ses of valuable materials.	ed sorting. Re	strictions must be	taken into acco	ount as
5		-valuable material with a verified density of larger than 1 g/cm ³ (including add	litives, master	batches, fillers, or	in multilayer str	ructures as well as
		be counted towards available valuable material share. determination in the sense that incompatible substances do not negatively aff	ect recyclabili	ty in individual cas	es, individual ev	idence produced
8	through analytical	testing must be provided. Requirements for the implementation and documer	ntation of an	individual evidence	e are specified i	n Annex 3.1.
		Scope of application of the design parameters catego	orised as P			
0.1		citly does not apply to metallized packaging.				
2		cable to large-format transport packaging.				
5		cable to large-format transport packaging, which is recycled via a separate mo	ono-collection	and in whose no	density separati	ion is carried out in
	the recycling proc					

A 2.8b Other packaging made of PET-A, PET-C – rigid (transparent clear/coloured, opaque)

a. Scope of application

The following assessment principles, criteria and requirements apply to packaging with PET as the main material. These are, for example: cans and jars.

b. Classification of design features incl. examination and test requirements

The most common design features of other PET packaging are listed below in a table, assigned to the columns 'valuable material, 'incompatibilities', 'separable or conditionally compatible', and 'examination of design-related losses of valuable materials'. The latter assignment may also be additive and refers to the corresponding examination or assessment regulation in the lower section of the table at the end of the chapter.

c. Calculation of recyclability

- 1. If no parameter is classified as 'incompatible', the recyclability corresponds numerically to the sum of the shares of the materials or formulations that are classified as 'valuable material'. This scenario represents the standard case.
- 2. If one or more design features are categorised as 'requiring examination, it must be determined whether they result in design-related valuable material losses. If such losses can be ruled out through examination, the feature has no impact on the calculation in accordance with section 1. Otherwise, design-related losses must be determined and deducted.
- 3. If one or more design features are categorised under 'incompatibilities', the recyclability is 0%.
- d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

		Main body				
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material
		PET-A	х			
		PET-A opaque	Х			
		PET-C not additionally nucleated	х			
	Material	PET-G		Х		
		r-PET PET(REC)	Х			
		PEF	Х			
		PBT	х			
		Aluminium layer		х		P0.1
		EVOH layer			Х	
		PA layer			х	
		PBT layer	Х			
	Material in	PE layer			х	
	multilayer,	PE-X layer		Х		
	density > 1 g/cm ³	PE peel layer (non-specific)		х		
		PEF layer	Х			
		PP Peel layer (non-specific)		х		
		PVDC layer		х		
		PVOH layer		х		
	Material in multilayer, density < 1 g/cm ³	Multilayer structure, density < 1 g/cm³			х	P5
	Structure	Multilayer structure				P2
		Masterbatch, colour batch	х			
Main body	Masterbatch or colour batch	Dyeing using soot-carbon-based pigments (also when used for internal layers)				P2
		Absorber (mineral)	Х			P5
	Fillers, mineral	Lime, Chalk	Х			P5
	additives and	Talc	Х			P5
	absorbers	Titanium dioxide	Х			P5
		Other fillers		Х		P5
		AA-blocker	Х			
		Anti-block	Х			
		Bio-/oxo-/photodegradable additives		Х		
	Additives	Nanocomposite	Х			
	Additives	Oxygen scavenger (PA free)	Х			
		PA additivation			Х	
		UV stabilizers	Х			
		Other blended barriers		Х		
		Acrylic-based coating		Х		
		AlOx			х	
	Coating	Antifog coating			х	
		SiOx			х	
		Other coatings		Х		P8
	Decoration	Direct printing (excluding production codes, 'best before' dates and UFI		x		

		Minor components				
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material
		rigid HDPE, rHDPE from closures and functional elements	Х			P5
		rigid PP, rPP from closures and functional elements	Х			P5
		PA (e.g. in applicators)		Х		
Closure/		Aluminium		Х		
functional head	Material	Glass			Х	
		High-alloy steels, non-ferromagnetic		Х	×.	50.0
		Steel, ferromagnetic		Y	Х	P0.2
		Silicone components, density > 1 g/cm ³ Elastomer components, density > 1 g/cm ³		X X		
		Monolayer film/coextruded multilayer film made of PET (except PET-G),		^		
		density > 1 g/cm ³ , unprinted and not lacquered	х			
		Multilayer film made of PET, adhesive-laminated, density > 1 g/cm ³ ,				
		unprinted and not lacquered		х		
	Material	Coextruded multilayer film made of PET (except PET-G)/PO, unprinted and				
		not lacquered			х	
Label/sleeve/		Mono/multilayer film incl. print and lacquer, density > 1 g/cm ³		х		
sealing film		Mono/multilayer film incl. print and lacquer, density < 1 g/cm ³			х	
		Paper label (not wet-strength / wet-strength equipped)			X	
		Large labels (taking up > 50% of the projected surface) made from foreign				
		material				P2
	Coverage	Full sleeve labels (excluding full sleeves of PET hollow bodies without a				
		light barrier – clear or light blue – where OPS PET or PO sleeves are used)				P2
		AA-blocker	Х			
		Anti-block	х			
	Additive	Bio-/oxo-/photodegradable additives		Х		
		Nanocomposite	х			
		Oxygen scavenger (PA free)	х			
		PA additivation			Х	
6		UV stabilizers	х			
Sealing film		Other blended barriers		Х		
-		Acrylic-based coating		Х		
		AlOx			Х	
	Castina	Metallisation			х	
	Coating	PVOH coating		Х		
		SiOx			Х	
		Other coatings		Х		P8
	Adhesive	Adhesive application (wash-off capability unknown)		Х		
Label	application	Adhesive application (wash-off capable in alkaline hot wash, 80 °C)			Х	
	application	Adhesive application (not wash-off capable in alkaline hot wash, 80 °C)		Х		
		Other design parameters				
	Structure	Different types of plastic used on front and back sides				P2
		> 50% fully printed black (including background) using soot-carbon-based				
O		pigments				P2
Other design	Decoration	Metal pigments applied on a large scale (taking up > 50% of the projected				62
parameters		surface) (lacquering, coating or embossing))				P2
		PFAS share in food-contact packaging ≥ limit value according to Article 5,		×		
	PFAS	paragraph 5 PPWR		x		
		Examination of design-related losses of valuable	material			
	Presence of an alu	minium foil layer; examination required (test if necessary) whether the design	causes sortin	z into aluminium f	raction. If so, a	complete loss of
20.1		or packaging category 8 has to be factored.				
		hagnetic components \geq 5% by weight in relation to the object of assessment;	examination r	equired (test if ne	ressary) whethe	r the design causes
90.2		s metal fraction. If so, a complete loss of valuable material for packaging cate				in the design educes
		st whether identifiability, including targeted separability, is given in sensor-bas			taken into acco	unt as
2		es of valuable materials.	icu sorting. ne		taken nito deee	une us
		-valuable material with a verified density of larger than 1 g/cm ³ (including add	litivos mastar	atchos fillors or	in multilayor str	uctures as well as
		be counted towards available valuable material share.	intives, master	bateries, rillers, or	in multilayer sti	uctures as well as
5		ble material with a verified density of less than 1 g/cm^3 (including additives, n	nasterbatches	fillers or in multi	laver structures	as well as printing
		ed towards available valuable material share.	ind ster butteries,		ayer structures	as men as printing
	inksy shan be count					
8		etermination in the sense that incompatible substances do not negatively aff				
0	through analytical	testing must be provided. Requirements for the implementation and docume	ntation of an i	ndividual evidence	e are specified i	n Annex 3.1.
	<u>.</u>	Scone of application of the design records	orised as D			
		Scope of application of the design parameters categ	onseu as P			
0.1		itly does not apply to metallized packaging.				
	Explicitly not applic	cable to large-format transport packaging and to plastic packaging for which a	a separate plas	stic-type-only mor	no-collection is a	a prerequisite for
'2		and a second				
2	recycling (e.g. reus	able packaging in deposit systems, etc.).				
2	recycling (e.g. reus Explicitly not applie	able packaging in deposit systems, etc.). able to large-format transport packaging or reusable packaging, which are re ed out in the recycling process.	cycled via a se	parate mono-coll	ection and for v	vhich no density

A 2.9 PET – flexible (natural/coloured)

a. Scope of application

The following assessment principles, criteria and requirements apply to flexible packaging with PET as the main material. These are, for example: films, pouches, foams, stand-up pouches, carrier bags and wrapping films.

b. Classification of design features incl. examination and test requirements

Recycling paths do not exist for PET flexible plastic packaging subject to system participation obligations. Consequently, no requirements for recycling-compatible design can be derived as assessment regulation.

c. Calculation of recyclability

The recyclability is 0 %, unless individual evidence is provided.

d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

Individual evidence in accordance with Section 4 and Annex 3.3 is required for the declaration of recyclability. Based on the verified recycling path, the criteria for recycling-compatible design must be derived and applied to the object of assessment.

A 2.10 PE – rigid (natural/coloured)

a. Scope of application

The following assessment principles, criteria and requirements apply to packaging with PE as the main material. These are, for example: bottles < 5 litres, cups, trays, blisters, tubes, cans, buckets \leq 5 litres, canisters \leq 5 litres, buckets \geq 5 litres, canisters \geq 5 litres.

b. Classification of design features incl. examination and test requirements

The most common design features of rigid plastic packaging made of PE are listed below in a table, assigned to the columns 'valuable material, 'incompatibilities', 'separable or conditionally compatible', and 'examination of design-related losses of valuable materials'. The latter assignment may also be additive and refers to the corresponding examination or assessment regulation in the lower section of the table at the end of the chapter.

c. Calculation of recyclability

- 1. If no parameter is classified as 'incompatible', the recyclability corresponds numerically to the sum of the shares of the materials or formulations that are classified as 'valuable material'. This scenario represents the standard case.
- 2. If one or more design features are categorised as 'requiring examination, it must be determined whether they result in design-related valuable material losses. If such losses can be ruled out through examination, the feature has no impact on the calculation in accordance with section 1. Otherwise, design-related losses must be determined and deducted.
- 3. If one or more design features are categorised under 'incompatibilities', the recyclability is 0%.
- d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

		Main body				
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination o design-related losses of valuab material
		HDPE	Х			
		MDPE	Х			
		LDPE	Х			
	Material	LLDPE	х			
		rPE PE(REC)	х			
		rPO PO(REC)	Х			
		PE-PP blend	Х			
		PE-X		Х		
		PE peel (non-specific)		Х		
		PE-PB peel	Х			
		PS-PE blend			Х	
		Aluminium layer			Х	P0.1, P5
		Biodegradable and compostable materials as a layer		Х		
		COC layer	X			
		EVOH layer			Х	
		Ionomer layer			х	
		PA layer		Х		
		PAN layer		Х		P8
	Material in	PB layer	X			
	density < 1 g/cm ³	mPE (Metallocen) layer	Х			
		PEN layer		Х		P8
		PET layer		Х		P8
		rPET layer		Х		P8
		Plastomer (PE) layer	X			
		PP layer	X			
		PP-ethylene copolymer layer	Х			
Main body		rPP PP(REC) layer	Х			
indin 200)		PP peel layer (non-specific)		Х		
		PP-PB peel layer	X			
		PVC layer		х		
		PVDC layer		Х		
		PVOH layer		Х		
	Material in					
	multilayer,	Multilayer structure, density > 1 g/cm ³			х	P5
	density > 1 g/cm ³					
	Structure	Multilayer structure				P2
	Masterbatch or	Masterbatch, colour batch	Х	-		
	colour batch	Dyeing using soot-carbon-based pigments (also when used for internal				P2
		layers)				
	Fillers, mineral	Absorber (mineral)	X	-		P5
	additives and	Lime, Chalk	X	-		P5
	absorbers	Talc	X			P5
	A	Titanium dioxide	X			P5
	Additives	Additive	Х		Y	
		AlOx Matallication	-		X X	
	Coating	Metallisation		Y	Х	
	coating	PVOH coating		Х	V	
		SiOx Other contings	+	v	Х	50
		Other coatings		Х		P8
	Tie layer, adhesive	MAH grafted LDPE or LLDPE	x			
	application	Adhesive and other tie layer			х	
	Decoration	Direct printing with non-PVC-based binder			<u>х</u> х	

		Minor components						
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material		
		HDPE, MDPE, LDPE, LLDPE, rPE PE(REC)	Х	X				
		Elastomer, Rubber (non thermoplastic), density < 1 g/cm ³ Elastomer (thermoplastic), density < 1 g/cm ³		X	Х			
		lonomer			x			
		PA in applicators with density < 1 g/cm ³		Х				
		РВ	Х					
		PET			Х			
		PET (foamed, density < 1 g/cm ³) rPET		X	Х	P8		
		PP	Х		~			
Closure/		PP-ethylene copolymers	X					
unctional head/	Material	rPP PP(REC)	Х					
valve		PS			X			
		rPS			XX			
		PS-PE blend PU, density < 1 g/cm ³		Х	Х			
		PVC		^	Х			
		Silicone, density < 1 g/cm ³		х	~			
		Non-PO plastics, density < 1 g/cm ³		Х				
		Aluminium			Х			
		Stainless steel			х			
		Glass			<u>X</u>			
		Steel PE	V		Х	P0.2		
		PE PET (foamed, density < 1 g/cm ³)	Х	Х				
	Material	PP		~	Х			
		Fibre-based labels if the cellulose share can be removed by means of cold						
		washing			х			
		Fibre-based labels if the cellulose share cannot be removed by means of		x				
		cold washing						
Label/sleeve	Demeitu	Other materials		Classification an		body		
	Density Adhesive	Label/sleeve, density > 1 g/cm ³			Х			
	application	Adhesive			х			
		Printing ink with non-PVC-based binder			х			
	Decoration	Lacquer			х			
		Large labels (taking up > 50% of the projected surface) made from foreign				P2		
	Coverage	material						
		Full sleeve labels			v	P2		
	Material	Aluminium (sealing) lid, aluminium membrane X Other materials Classification analogue to main body						
	Density	Sealing film, density > 1 g/cm ³						
	Additives	Additive X F						
		AlOx			х			
	Coating	Metallisation			х			
Sealing film		SiOx		X	Х	50		
		Other coatings		X		P8		
	Tie layer, adhesive	MAH grafted LDPE or LLDPE	Х					
	application	Adhesive and other tie layer			х			
		Printing ink with non-PVC-based binder			х			
	Decoration	Lacquer			x x	1		
		Other design parameters			~			
	Chanada					00		
	Structure	Different types of plastic used on front and back sides > 50% fully printed black (including background) using soot-carbon-based				P2		
		pigments				P2		
Other design	Decoration	Metal pigments applied on a large scale (taking up > 50% of the projected				02		
parameters		surface) (lacquering, coating or embossing))				P2		
	PFAS	PFAS share in food-contact packaging ≥ limit value according to Article 5,		х				
		paragraph 5 PPWR						
	Sealant cartridges			Х				
		Examination of design-related losses of valuable						
0.1		ninium foil layer; examination required (test if necessary) whether the design	causes sorting	g into aluminium f	raction. If so, a	complete loss of		
		r packaging category 10 has to be factored.						
0.2		agnetic components \geq 5% by weight in relation to the object of assessment;			cessary) whethe	r the design cause		
	-	metal fraction. If so, a complete loss of valuable material for packaging cate			takan into acco	upt ac		
2		whether identifiability, including targeted separability, is given in sensor-bas s of valuable materials.	seu sorting. Re	SUICIONS MUST DE	Laken INto acco	uill dS		
		s or valuable materials.	than 1 g/cm ³	(including additive	s masterbatcho	s fillers or in		
			-		.,	-,		
5	multilayer structures as well as printing inks) shall be counted towards available valuable material share.							
5	For any deviating do	termination in the sense that incomnatible substances do not negatively aff		, in mainiaual cdS	cs, maiviauai ev	acrice produced		
8		termination in the sense that incompatible substances do not negatively aff esting must be provided. Requirements for the implementation and docume		individual evidence	e are specified in	n Annex 3.1.		
8	through analytical te	esting must be provided. Requirements for the implementation and documen Scope of application of the design parameters categ	ntation of an	individual evidenco	e are specified in	n Annex 3.1.		
	through analytical te	esting must be provided. Requirements for the implementation and documen Scope of application of the design parameters catege tly does not apply to metallized packaging.	ntation of an i					
3	through analytical te The criterion explici Explicitly not applice	esting must be provided. Requirements for the implementation and documents for the design parameters catege of application of the design parameters catege the does not apply to metallized packaging. able to large-format transport packaging and to plastic packaging for which a	ntation of an i					
).1	through analytical to The criterion explici Explicitly not applica recycling (e.g. PPWR	esting must be provided. Requirements for the implementation and documen Scope of application of the design parameters catege tly does not apply to metallized packaging.	ntation of an i orised as P a separate plas	stic-type-only mor	o-collection is a	a prerequisite for		

A 2.11 PE – flexible (natural/coloured)

a. Scope of application

The following assessment principles, criteria and requirements apply to packaging with PEflex as the main material. These are, for example: flowpacks, films, bags, nets, foams, tubular bags, shrink films, stand-up pouches, carrier bags, bags, wrapping films, bubble wrap, pouches.

b. Classification of design features incl. examination and test requirements

The most common design features for flexible plastic packaging made of PE are listed below in a table, assigned to the columns 'valuable material, 'incompatibilities', 'separable or conditionally compatible', and 'examination of design-related losses of valuable materials'. The latter assignment may also be additive and refers to the corresponding examination or assessment regulation in the lower section of the table at the end of the chapter.

c. Calculation of recyclability

- 1. If no parameter is classified as 'incompatible', the recyclability corresponds numerically to the sum of the shares of the materials or formulations that are classified as 'valuable material'. This scenario represents the standard case.
- 2. If one or more design features are categorised as 'requiring examination, it must be determined whether they result in design-related valuable material losses. If such losses can be ruled out through examination, the feature has no impact on the calculation in accordance with section 1. Otherwise, design-related losses must be determined and deducted.
- 3. If one or more design features are categorised under 'incompatibilities', the recyclability is 0%.
- d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

		Main body				
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material
		HDPE	X			
		MDPE LDPE	x x			
		LLDPE	x X			
	Material	rPE PE(REC)	Х			
		PE-PP blend	Х			
		PE-X (non-specific) PE-X (\leq 50 kGy)	х	X		
		PE-X (> 50 kGy)	~	х		
		PE peel (non-specific)		Х		
		PE-PB peel	Х	×		50.4
		Aluminium layer Biodegradable and compostable materials as a layer		X X		P0.1
		COC layer	Х	~		
		EVA layer (VA ≤ 15 %)	Х			
		EVOH layer			X	
		lonomer layer PA layer		Х	Х	
		Nylon 6 or co-polyamide 6-66 in coextruded PE/PA films (with or without		^		
		EVOH), combined with MAH-grafted PE as an adhesion promoter at a			х	
		ratio of at least 0.5g of adhesive per 1g of PA (+EVOH)				
		Nylon 6 in laminated PE/PA films, combined with MAH-grafted PE as a			х	
		compatibiliser at a ratio of at least 0.15g of compatibiliser per 1g of PA PAN layer		Х		
		PB layer	Х	~		
	Material in	PBT layer		Х		
	multilayer,	PC layer		X		
	density < 1 g/cm ³	PEN layer PET layer		X X		
		rPET layer		X		
		PLA layer		X		
		PMMA layer		Х		
		POM layer		Х	V	
		PP layer PP-ethylene copolymer layer	х		X	
Main body		PP terpolymer layer	~	Х		
		rPP PP(REC) layer			Х	
		PP Peel layer (non-specific)		X		
		PS layer rPS layer		X X		
		PVC layer		X		
		PVDC layer		Х		
		PVOH layer		X		
		Other non-PE polymer layer Other non-polymer layer		X X		
	Material in multilayer,	Multilayer structure, density > 1 g/cm ³			х	P5
	density > 1 g/cm ³ Structure	Multilayer structure				P2
		Masterbatch, colour batch	Х			12
	Masterbatch or colour batch	Dyeing using soot-carbon-based pigments (also when used for internal				P2
		layers)				
	Fillers, mineral	Absorber (mineral)	x x			P5
	additives and	Lime, Chalk Talc	x x			P5 P5
	absorbers	Titanium dioxide	x			P5
	Additives	Additive	Х			
		AlOx			X	
	Coating	Metallisation PVOH coating		Х	Х	
	coating	SiOx		~	Х	
		Other coatings		Х		P8
	Tie layer, adhesive	MAH grafted LDPE or LLDPE	Х			
	application	Adhesive and other tie layer			х	
		NC-, PU-, PVB-based binders in frontal printing			Х	
	Decoration	PU-, PVB-based binders in interlayer printing		v	Х	
		NC-based binders in interlayer printing Lacquer		Х	Х	

		Minor components				
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material
		HDPE, MDPE, LDPE, LLDPE, rPE PE(REC)	Х			
		Elastomer, Rubber (non thermoplastic), density < 1 g/cm ³		Х		
		Elastomer (thermoplastic), density < 1 g/cm ³ EVA (VA \leq 15 %)	х		Х	
		PB	X			
		lonomer	Λ		Х	
		PA in applicators with density < 1 g/cm ³		Х		
		PET			х	
		PET (foamed, density < 1 g/cm ³)		Х		
		rPET PP			X X	
Closure/		PP-ethylene copolymers	Х		~	
functional head/	Material	PP terpolymers	X	Х		
valve		rPP PP(REC)			х	
		PS			х	
		PU, density < 1 g/cm ³		х		
		PVC			X	
		PVDC Silicone, density < 1 g/cm ³		х	Х	
		Other polymer components, density < 1 g/cm ³		X		P8
		Aluminium		~	х	10
		Stainless steel			X	
		Glass			Х	
		Steel			х	P0.2
		PE	Х			
		PP Fibre-based labels if the cellulose share can be removed by means of cold			Х	
	Material	washing			х	
	Wateria	Fibre-based labels if the cellulose share cannot be removed by means of				
		cold washing		х		
		Other materials		Classification an	alogue to main	body
Label	Density	Label, density > 1 g/cm ³			х	P5
	Adhesive application	Adhesive			х	
	Decoration	NC-, PU-, PVB-based binders in frontal printing			х	
		PU-, PVB-based binders in interlayer printing			х	
		NC-based binders in interlayer printing		Х		
		Lacquer			Х	
	Coverage	Large labels (taking up > 50% of the projected surface) made from foreign material				P2
		Other design parameters				
	Structure	Different types of plastic used on front and back sides				P2
		> 50% fully printed black (including background) using soot-carbon-based				
	r					P2
Other design	Decoration	pigments				
Other design parameters	Decoration					P2 P2
Other design parameters		pigments Metal pigments applied on a large scale (taking up > 50% of the projected				P2
•	Decoration Nets	pigments Metal pigments applied on a large scale (taking up > 50% of the projected surface) (lacquering, coating or embossing))				
•		pigments Metal pigments applied on a large scale (taking up > 50% of the projected		x		P2
0	Nets	pigments Metal pigments applied on a large scale (taking up > 50% of the projected surface) (lacquering, coating or embossing)) PFAS share in food-contact packaging ≥ limit value according to Article 5,	material	X		P2
parameters	Nets PFAS Presence of an alu	pigments Metal pigments applied on a large scale (taking up > 50% of the projected surface) (lacquering, coating or embossing)) PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR Examination of design-related losses of valuable minium foil layer; examination required (test if necessary) whether the design			raction. If so, a	P2 P2
parameters	Nets PFAS Presence of an alu valuable material f	pigments Metal pigments applied on a large scale (taking up > 50% of the projected surface) (lacquering, coating or embossing)) PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR Examination of design-related losses of valuable minium foil layer; examination required (test if necessary) whether the design or packaging category 11 has to be factored.	causes sortin	g into aluminium f		P2 P2 complete loss of
parameters 0.1	Nets PFAS Presence of an alu valuable material f Presence of ferror	pigments Metal pigments applied on a large scale (taking up > 50% of the projected surface) (lacquering, coating or embossing)) PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR Examination of design-related losses of valuable minium foil layer; examination required (test if necessary) whether the design	causes sorting	g into aluminium f equired (test if neo		P2 P2 complete loss of
parameters 20.1 20.2	Nets PFAS Presence of an alu valuable material f Presence of ferror sorting into ferrou	pigments Metal pigments applied on a large scale (taking up > 50% of the projected surface) (lacquering, coating or embossing)) PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR Examination of design-related losses of valuable minium foil layer; examination required (test if necessary) whether the design or packaging category 11 has to be factored. agnetic components ≥ 5% by weight in relation to the object of assessment;	examination r	g into aluminium f equired (test if neo b be factored.	cessary) whethe	P2 P2 complete loss of er the design causes
parameters 0.1 0.2	Nets PFAS Presence of an alu valuable material f Presence of ferror sorting into ferrou Requirement to te	pigments Metal pigments applied on a large scale (taking up > 50% of the projected surface) (lacquering, coating or embossing)) PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR Examination of design-related losses of valuable minium foil layer; examination required (test if necessary) whether the design or packaging category 11 has to be factored. nagnetic components ≥ 5% by weight in relation to the object of assessment; s metal fraction. If so, a complete loss of valuable material for packaging category	examination r	g into aluminium f equired (test if neo b be factored.	cessary) whethe	P2 P2 complete loss of er the design causes
parameters 20.1 22	Nets PFAS Presence of an aluvaluable material 1 Presence of ferrors Sorting into ferroru Requirement to te proportionate loss Only the packaging	pigments Metal pigments applied on a large scale (taking up > 50% of the projected surface) (lacquering, coating or embossing)) PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR Examination of design-related losses of valuable minium foil layer; examination required (test if necessary) whether the design or packaging category 11 has to be factored. nagnetic components ≥ 5% by weight in relation to the object of assessment; s metal fraction. If so, a complete loss of valuable material for packaging category st whether identifiability, including targeted separability, is given in sensor-base es of valuable materials. components containing valuable material that have a verified density of less	examination r egory 11 has to ed sorting. Re than 1 g/cm ³	g into aluminium f equired (test if new o be factored. strictions must be	cessary) whethe	P2 P2 complete loss of er the design causes
parameters 20.1 22	Nets PFAS Presence of an alu valuable material f Presence of ferror sorting into ferrou Requirement to te proportionate loss Only the packaging multilayer structur	pigments Metal pigments applied on a large scale (taking up > 50% of the projected surface) (lacquering, coating or embossing)) PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR Examination of design-related losses of valuable minium foil layer; examination required (test if necessary) whether the design or packaging category 11 has to be factored. agnetic components ≥ 5% by weight in relation to the object of assessment; smetal fraction. If so, a complete loss of valuable material for packaging cate so f valuable materials. components containing valuable material that have a verified density of less es as well as printing inks) shall be counted towards available valuable material	examination r egory 11 has to eed sorting. Re than 1 g/cm ³	g into aluminium f equired (test if new be factored. strictions must be including additive	cessary) whethe taken into acco s, masterbatche	P2 P2 complete loss of er the design causes punt as es, fillers, or in
parameters 0.1 0.2 22 25	Nets PFAS Presence of an aluvaluable material f Presence of ferror sorting into ferror Requirement to te proportionate loss Only the packaging multilayer structur For any deviating co	pigments Metal pigments applied on a large scale (taking up > 50% of the projected surface) (lacquering, coating or embossing)) PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR Examination of design-related losses of valuable minium foil layer; examination required (test if necessary) whether the design or packaging category 11 has to be factored. nagnetic components ≥ 5% by weight in relation to the object of assessment; s metal fraction. If so, a complete loss of valuable material for packaging category st whether identifiability, including targeted separability, is given in sensor-base es of valuable materials. components containing valuable material that have a verified density of less	examination r examination r egory 11 has to eed sorting. Re than 1 g/cm ³ al share. ect recyclabilit	g into aluminium f equired (test if net b be factored. strictions must be including additive cy in individual cas	cessary) whethe taken into acco s, masterbatche es, individual ev	P2 P2 complete loss of er the design causes punt as ss, fillers, or in idence produced
parameters 0.1 0.2 2 5	Nets PFAS Presence of an aluvaluable material f Presence of ferror sorting into ferror Requirement to te proportionate loss Only the packaging multilayer structur For any deviating co	pigments Metal pigments applied on a large scale (taking up > 50% of the projected surface) (lacquering, coating or embossing)) PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR Examination of design-related losses of valuable iminium foil layer; examination required (test if necessary) whether the design or packaging category 11 has to be factored. nagnetic components ≥ 5% by weight in relation to the object of assessment; is metal fraction. If so, a complete loss of valuable material for packaging categor y aluable materials. components containing valuable material that have a verified density of less es as well as printing inks) shall be counted towards available valuable material termination in the sense that incompatible substances do not negatively aff	causes sortin examination r egory 11 has to ed sorting. Re than 1 g/cm ³ al share. ect recyclabilit ntation of an i	g into aluminium f equired (test if net b be factored. strictions must be including additive cy in individual cas	cessary) whethe taken into acco s, masterbatche es, individual ev	P2 P2 complete loss of er the design causes punt as ss, fillers, or in idence produced
parameters 0.1 0.2 2 5 8	Nets PFAS Presence of an alu valuable material 1 Presence of ferror sorting into ferrou Requirement to te proportionate loss Only the packaging multilayer structur For any deviating of through analytical	pigments Metal pigments applied on a large scale (taking up > 50% of the projected surface) (lacquering, coating or embossing)) PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR Examination of design-related losses of valuable minium foil layer; examination required (test if necessary) whether the design or packaging category 11 has to be factored. agnetic components ≥ 5% by weight in relation to the object of assessment; s metal fraction. If so, a complete loss of valuable material for packaging cate so is of valuable materials. components containing valuable material that have a verified density of less es as well as printing inks) shall be counted towards available valuable material tetermination in the sense that incompatible substances do not negatively aff testing must be provided. Requirements for the implementation and documents	causes sortin examination r egory 11 has to ed sorting. Re than 1 g/cm ³ al share. ect recyclabilit ntation of an i	g into aluminium f equired (test if net b be factored. strictions must be including additive cy in individual cas	cessary) whethe taken into acco s, masterbatche es, individual ev	P2 P2 complete loss of er the design causes punt as ss, fillers, or in idence produced
parameters 20.1 20.2 25 28 20.1 20.1 20.1 20.2 20.1 20.1 20.1 20.1	Nets PFAS Presence of an alu valuable material f Presence of ferror sorting into ferrou Requirement to te proportionate loss Only the packaging multilayer structur For any deviating c through analytical The criterion explicit	pigments Metal pigments applied on a large scale (taking up > 50% of the projected surface) (lacquering, coating or embossing)) PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR Examination of design-related losses of valuable minium foil layer; examination required (test if necessary) whether the design or packaging category 11 has to be factored. agnetic components ≥ 5% by weight in relation to the object of assessment; s metal fraction. If so, a complete loss of valuable material for packaging cate st whether identifiability, including targeted separability, is given in sensor-base so of valuable materials. components containing valuable material that have a verified density of less es as well as printing inks) shall be counted towards available valuable material tetermination in the sense that incompatible substances do not negatively aff testing must be provided. Requirements for the implementation and documents Scope of application of the design parameters catego	causes sortin examination r gory 11 has to ed sorting. Re than 1 g/cm ³ al share. ect recyclabilit ntation of an orised as P	g into aluminium f equired (test if new o be factored. strictions must be including additive y in individual cas ndividual evidence	cessary) whether taken into accc s, masterbatcher es, individual ev e are specified i	P2 P2 complete loss of er the design causes punt as es, fillers, or in idence produced n Annex 3.1.
parameters 20.1 20.2 25 28 28	Nets PFAS Presence of an alu valuable material f Presence of ferror sorting into ferrou Requirement to te proportionate loss Only the packaging multilayer structur For any deviating of through analytical The criterion explii Explicitly not appli recycling (e.g. stre	pigments Metal pigments applied on a large scale (taking up > 50% of the projected surface) (lacquering, coating or embossing)) PFAS share in food-contact packaging ≥ limit value according to Article 5, paragraph 5 PPWR Examination of design-related losses of valuable minium foil layer; examination required (test if necessary) whether the design or packaging category 11 has to be factored. agnetic components ≥ 5% by weight in relation to the object of assessment; is metal fraction. If so, a complete loss of valuable material for packaging cates es of valuable materials. components containing valuable material that have a verified density of less es as well as printing inks) shall be counted towards available valuable material itetermination in the sense that incompatible substances do not negatively aff testing must be provided. Requirements for the implementation and documents Scope of application of the design parameters catego citty does not apply to metallized packaging.	causes sortin examination r egory 11 has to ed sorting. Re than 1 g/cm ³ al share. ect recyclabilit ntation of an i orised as P	g into aluminium f equired (test if new be factored. strictions must be including additive cy in individual cas ndividual evidence stic-type-only mor	cessary) whether taken into accco s, masterbatche es, individual ev e are specified i no-collection is a	P2 P2 complete loss of er the design causes punt as es, fillers, or in idence produced n Annex 3.1.

A 2.12 PP – rigid (natural/coloured)

a. Scope of application

The following assessment principles, criteria and requirements apply to packaging with PP as the main material. These are, for example: bottles < 5 litres, cups, trays, blisters, tubes, cans, buckets \leq 5 litres, canisters \leq 5 litres, buckets \geq 5 litres, canisters \geq 5 litres.

b. Classification of design features incl. examination and test requirements

The most common design features for rigid plastic packaging made of PP are listed below in a table, assigned to the columns 'valuable material, 'incompatibilities', 'separable or conditionally compatible', and 'examination of design-related losses of valuable materials'. The latter assignment may also be additive and refers to the corresponding examination or assessment regulation in the lower section of the table at the end of the chapter.

c. Calculation of recyclability

- 1. If no parameter is classified as 'incompatible', the recyclability corresponds numerically to the sum of the shares of the materials or formulations that are classified as 'valuable material'. This scenario represents the standard case.
- 2. If one or more design features are categorised as 'requiring examination, it must be determined whether they result in design-related valuable material losses. If such losses can be ruled out through examination, the feature has no impact on the calculation in accordance with section 1. Otherwise, design-related losses must be determined and deducted.
- 3. If one or more design features are categorised under 'incompatibilities', the recyclability is 0%.
- d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

Main body								
		Main bouy	Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuab material		
		PP	Х					
	Material	PP-ethylene copolymer	х					
		rPP PP(REC)	х					
		PP peel (non-specific)		Х				
		PP-PB peel	Х					
		Aluminium layer			Х	P0.1, P5		
		Biodegradable and compostable materials as a layer		Х				
		COC layer	х					
		EVOH layer			Х			
		Ionomer layer			Х			
		PA layer		Х				
		PAN layer		Х		P8		
		PB layer	х					
		HDPE layer	Х					
	Material in	MDPE layer	Х					
		LDPE layer	Х					
	multilayer, density < 1 g/cm ³	LLDPE layer	Х					
	density < 1 g/cm ²	rPE PE(REC) layer	Х					
		PE-PP blend layer	Х					
		PE peel layer (non-specific)		Х				
		PE-PB peel layer	Х					
		PEN layer		Х		P8		
		PET layer		Х		P8		
		rPET layer		Х		P8		
		PS layer			Х			
Main body		rPS layer			х			
-		PVC layer		Х				
		PVDC layer		Х				
		PVOH layer		X				
	Material in							
	multilayer,	Multilayer structure, density > 1 g/cm ³				P5		
	density > 1 g/cm ³	, , , , ,						
		Masterbatch, colour batch	х					
	Masterbatch or	Dyeing using soot-carbon-based pigments (also when used for internal						
	colour batch	layers)				P2		
		Absorber (mineral)	х			P5		
	Fillers, mineral	Lime, Chalk	X			P5		
	additives and	Talc	X			P5		
	absorbers	Titanium dioxide	X			P5		
	405010015	Other fillers	~	х		P5		
	Additives	Additive	Х	~		15		
	Auditives	Allox	~		Х			
		Metallisation			× ×			
	Coating	PVOH coating	1	Х	~			
	coating	SiOx			Х			
		Other coatings	1	Х	^	P8		
			×	X		Põ		
	Tie layer, adhesive	PE-based tie layer PP-based tie layer	X X					
	application		X		V			
		Adhesive			X X			
	Decoration	Direct printing with non-PVC-based binder Lacquer		+	x x			

		Minor components						
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material		
		PP, PP-ethylene copolymer, rPP PP(REC)	Х					
		Elastomer, Rubber (non thermoplastic), density < 1 g/cm ³ Elastomer (thermoplastic), density < 1 g/cm ³		Х	х			
		lonomer			x			
		PA in applicators with density < 1 g/cm ³		Х				
		PB	Х					
		HDPE	Х			-		
		MDPE LDPE	<u>х</u> х					
		LLDPE	X					
		rPE PE(REC)	X					
Closure/		PE-PP blend	Х					
unctional head/	Material	РЕТ		_	х			
valve		PET (foamed, density < 1 g/cm ³)		Х	Y	P8		
		rPET PS			<u>х</u> х			
		PU, density < 1 g/cm ³		х	~			
		PVC		x				
		PVDC		х				
		Silicone, density < 1 g/cm ³		х				
		Non-PO plastics, density < 1 g/cm ³ Aluminium		Х	Х			
		Stainless steel			x			
		Glass			x x			
		Steel			Х	P0.2		
		PE	Х					
		PET (foamed, density < 1 g/cm ³)		х		P8		
		PP Fibre based labels if the collulose share can be removed by means of cold			Х			
	Material	Fibre-based labels if the cellulose share can be removed by means of cold washing			х			
		Fibre-based labels if the cellulose share cannot be removed by means of						
		cold washing		х				
Label/sleeve		Other materials		Classification an	alogue to main	· ·		
• • • •	Density	Label/sleeve, density > 1 g/cm ³			Х	P5		
	Adhesive application	Adhesive			х			
		Printing ink with non-PVC-based binder			х			
	Decoration	Lacquer			Х			
		Large labels (taking up > 50% of the projected surface) made from foreign				P2		
		material						
		Full sleeve labels Aluminium (sealing) lid*, aluminium membrane*	х			P2		
	Material	Other materials	X	Classification an	alogue to main	body		
	Density	Sealing film, density > 1 g/cm ³						
	Additives	Additive	Х			P5		
		AlOx			X			
	Coating	Metallisation PVOH coating		х	Х			
Sealing film	coating	SiOx		~	Х			
		Other coatings		Х		P8		
	Tie layer, adhesive	PE-based tie layer	Х					
	application	PP-based tie layer	Х					
		Adhesive			X			
	Decoration	Printing ink with non-PVC-based binder Lacquer			<u>х</u> х			
	1	Other design parameters		-	<u></u>			
	Churchard			1		D 2		
	Structure	Different types of plastic used on front and back sides > 50% fully printed black (including background) using soot-carbon-based		+		P2		
	Descrit	pigments				P2		
Other design	Decoration	Metal pigments applied on a large scale (taking up > 50% of the projected				P2		
parameters		surface) (lacquering, coating or embossing))				F2		
	PFAS	PFAS share in food-contact packaging ≥ limit value according to Article 5,		x				
	Sealant cartridges	paragraph 5 PPWR		х				
Credit as valuable		ndividual evidence in accordance with Annex 3.3		A .		l		
		Examination of design-related losses of valuable	material					
	Presence of an alum	inium foil layer; examination required (test if necessary) whether the design		g into aluminium f	raction If so a	complete loss of		
0.1		r packaging category 12 has to be factored.	SUUJES SUI UII			complete 1055 UI		
		agnetic components \geq 5% by weight in relation to the object of assessment;	examination r	equired (test if neo	cessary) whethe	r the design cause		
).2		metal fraction. If so, a complete loss of valuable material for packaging cate						
2		whether identifiability, including targeted separability, is given in sensor-base	ed sorting. Re	strictions must be	taken into acco	ount as		
-		s of valuable materials.				6.U		
5		components containing valuable material that have a verified density of less		(including additive	s, masterbatche	s, fillers, or in		
8	For any deviating de	s as well as printing inks) shall be counted towards available valuable materi- termination in the sense that incompatible substances do not negatively aff	ect recyclabili					
	unrough analytical to	esting must be provided. Requirements for the implementation and documents	itation of an	maiviaual evidence	e are specified in	n Annex 3.1.		
		Scope of application of the design parameters categ	orised as P					
0.1	The criterion explici	tly does not apply to metallized packaging.						
		ble to large-format transport packaging and to plastic packaging for which a	a separate pla:	stic-type-only mor	o-collection is a	a prerequisite for		
		category 14 packaging, EPS, reusable packaging in deposit systems, etc.).						
2	recycling (e.g. PPWF	category 1 - packaging, 21 of reasonic packaging in deposit systems, etc.						
5	Explicitly not applica	ble to large-format transport packaging or reusable packaging such as crate hich no density separation is carried out in the recycling process.	s for drinks bo	ottles, which are re	cycled via a sep	arate mono-		

A 2.13 PP – flexible (natural/coloured)

a. Scope of application

The following assessment principles, criteria and requirements apply to packaging with PP-flex as the main material. These are, for example: flowpacks, films, bags, nets, foams, tubular bags, shrink films, stand-up pouches, carrier bags, bags, wrapping films, bubble wrap, pouches.

b. Classification of design features incl. examination and test requirements

The most common design features for flexible plastic packaging made of PP are listed below in a table, assigned to the columns 'valuable material, 'incompatibilities', 'separable or conditionally compatible', and 'examination of design-related losses of valuable materials'. The latter assignment may also be additive and refers to the corresponding examination or assessment regulation in the lower section of the table at the end of the chapter.

c. Calculation of recyclability

- 1. If no parameter is classified as 'incompatible', the recyclability corresponds numerically to the sum of the shares of the materials or formulations that are classified as 'valuable material'. This scenario represents the standard case.
- 2. If one or more design features are categorised as 'requiring examination, it must be determined whether they result in design-related valuable material losses. If such losses can be ruled out through examination, the feature has no impact on the calculation in accordance with section 1. Otherwise, design-related losses must be determined and deducted.
- 3. If one or more design features are categorised under 'incompatibilities', the recyclability is 0%.
- d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

No individual evidence of the existence of a recycling infrastructure is required for the declaration of recyclability; however, this is recommended.

	PP – fle	xible (natural / coloured) Reference application: Injection mou	Iding produ	cts or thermofo	orms	
		Main body				
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material
		PP	х			
	Material	PP-ethylene copolymer	х			
		rPP PP(REC)	х			
		PP peel (non-specific)		х		
		PP-PB peel	Х			
		Aluminium layer			х	P0.1, P5
		Biodegradable and compostable materials as a layer		Х		- , -
		COC layer	х			
		EVA layer (VA ≤ 15 %)	Х			
		EVOH layer			х	
		lonomer layer			X	
		PA layer		Х		
		PAN layer		x		P8
		PB layer	Х	~		
		HDPE layer	X			
	Material in	MDPE layer	X			
	multilayer,	LDPE layer	X			
	density < 1 g/cm ³	LLDPE layer	X			
		rPE PE(REC) layer	X			
		PE-PP blend layer	X			
		PE peel layer (non-specific)	~	х		
		PE-PB peel layer	х	^		
		PEN layer	~	х		P8
		PET layer		x		P8
		rPET layer	-	x		P8
Main body		PS layer	-	^	Х	Po
wall bouy		PVC layer		Х	^	
			-	X		
		PVDC layer		X		
	Material in	PVOH layer		Χ.		
					v	P5
	multilayer,	Multilayer structure, density > 1 g/cm ³			Х	P5
	density > 1 g/cm ³					
	Structure	Multilayer structure	X			P2
	Masterbatch or	Masterbatch, colour batch	Х			
	colour batch	Dyeing using soot-carbon-based pigments (also when used for internal				P2
		layers)				25
	Fillers, mineral	Absorber (mineral)	Х			P5
	additives and	Lime, Chalk	Х			P5
	absorbers	Talc	Х			P5
		Titanium dioxide	Х			P5
	Additives	Additive	Х			
		AlOx			Х	
		Metallisation			Х	
	Coating	PVOH coating			Х	
		SiOx	-	Х		
		Other coatings		х		P8
	Tie layer, adhesive	PE-based tie layer (halogen-free)	Х			
	application	PP-based tie layer (halogen-free)	Х			
	application	Adhesive			х	
	Descention	Direct printing with non-PVC-based binder			х	
	Decoration	Lacquer			х	

		Minor components				
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material
		PP, PP-ethylene copolymer, rPP PP(REC)	Х			
		Elastomer, Rubber (non thermoplastic), density < 1 g/cm ³		Х		
		Elastomer (thermoplastic), density < 1 g/cm ³			Х	
		EVA (VA ≤ 15 %)	Х			
		lonomer			Х	
		PB	X			
		HDPE MDPE	X X			
		LDPE	X	-		
		LLDPE	X			
		rPE PE(REC)	X			
Closure/		PE-PP blend	X			
functional head/	Material	PET (foamed, density < 1 g/cm ³)	~	х		P8
valve	indicitat	rPET		~	Х	10
		PS			x	
		rPS			x	
		PU, density < 1 g/cm ³		х		
		PVC			х	
		PVDC			X	
		Silicone, density < 1 g/cm ³		Х		
		Other polymer components, density < 1 g/cm ³		х		P8
		Aluminium			Х	
		Stainless steel			Х	
		Glass			Х	
		Steel			Х	P0.2
		PE	Х			
		PET (foamed, density < 1 g/cm ³)		Х		P8
	Material	PP			х	
		Other foamed non-polyolefin components		Х		
		Fibre-based labels if the cellulose share can be removed by means of cold			х	
		washing			^	
		Fibre-based labels if the cellulose share cannot be removed by means of		x		
		cold washing				
Label		Other materials		Classification a	nalogue to maii	
Luber	Density	Label, density > 1 g/cm ³			Х	P5
	Metallisation	Metallisation			Х	P2
	Adhesive	Adhesive			х	
	application					
		Printing ink with non-PVC-based binder			Х	
	Decoration	Printing ink with PVC-based binder		Х		
		Lacquer			Х	
	Coverage	Large labels (taking up > 50% of the projected surface) made from foreign			х	
		material				I
		Other design parameters				
	Structure	Different types of plastic used on front and back sides				P2
		> 50% fully printed black (including background) using soot-carbon-based				
	Descritter	pigments				P2
Othor design	Decoration	Metal pigments applied on a large scale (taking up > 50% of the projected				52
Other design	1	surface) (lacquering, coating or embossing))				P2
-						P2
other design parameters	Nets					
-	Nets	PEAS share in food-contact packaging > limit value according to Article F				
-	Nets PFAS	PFAS share in food-contact packaging ≥ limit value according to Article 5,		x		
-		paragraph 5 PPWR		x		
-			naterial	X		
parameters	PFAS	paragraph 5 PPWR			n fraction. If so,	, a complete loss of
parameters	PFAS Presence of an alu valuable material f	paragraph 5 PPWR Examination of design-related losses of valuable n minium foil layer; examination required (test if necessary) whether the design or packaging category 13 has to be factored.	n causes sorti	ing into aluminiun		
parameters	PFAS Presence of an alu valuable material f	paragraph 5 PPWR Examination of design-related losses of valuable n minium foil layer; examination required (test if necessary) whether the design	n causes sorti	ing into aluminiun		· · · · · · · · · · · · · · · · · · ·
parameters	PFAS Presence of an alu valuable material f Presence of ferron	paragraph 5 PPWR Examination of design-related losses of valuable n minium foil layer; examination required (test if necessary) whether the design or packaging category 13 has to be factored.	n causes sorti examination	ing into aluminiun n required (test if i	necessary) whet	· · · · · · · · · · · · · · · · · · ·
parameters 0.1 0.2	PFAS Presence of an alu valuable material f Presence of ferron causes sorting into Requirement to te:	paragraph 5 PPWR Examination of design-related losses of valuable n minium foil layer; examination required (test if necessary) whether the design or packaging category 13 has to be factored. magnetic components ≥ 5% by weight in relation to the object of assessment; ferrous metal fraction. If so, a complete loss of valuable material for package; twhether identifiability, including targeted separability, is given in sensor-base.	n causes sorti examination ging category	ing into aluminiun required (test if i 13 has to be fact	necessary) when	ther the design
parameters	PFAS Presence of an alu valuable material f Presence of ferron causes sorting into Requirement to te:	paragraph 5 PPWR Examination of design-related losses of valuable n minium foil layer; examination required (test if necessary) whether the design or packaging category 13 has to be factored. nagnetic components ≥ 5% by weight in relation to the object of assessment; ferrous metal fraction. If so, a complete loss of valuable material for package	n causes sorti examination ging category	ing into aluminiun required (test if i 13 has to be fact	necessary) when	ther the design
parameters 0.1 0.2 2	PFAS Presence of an alu valuable material f Presence of ferron causes sorting into Requirement to te proportionate loss	paragraph 5 PPWR Examination of design-related losses of valuable n minium foil layer; examination required (test if necessary) whether the design or packaging category 13 has to be factored. magnetic components ≥ 5% by weight in relation to the object of assessment; ferrous metal fraction. If so, a complete loss of valuable material for package; twhether identifiability, including targeted separability, is given in sensor-base.	n causes sorti examination ging category sed sorting. F	ing into aluminiur n required (test if n 13 has to be fact Restrictions must	necessary) when cored. be taken into ac	ther the design
parameters 0.1 0.2 2	PFAS Presence of an alu valuable material f Presence of ferron causes sorting into Requirement to te proportionate loss Only the packaging	paragraph 5 PPWR Examination of design-related losses of valuable n minium foil layer; examination required (test if necessary) whether the design or packaging category 13 has to be factored. nagnetic components > 5% by weight in relation to the object of assessment; ferrous metal fraction. If so, a complete loss of valuable material for package st whether identifiability, including targeted separability, is given in sensor-bases of valuable materials.	examination ging category sed sorting. F	ing into aluminiur n required (test if n 13 has to be fact Restrictions must	necessary) when cored. be taken into ac	ther the design
parameters 0.1 0.2 2	PFAS Presence of an alu valuable material f Presence of ferron causes sorting into Requirement to te proportionate loss Only the packaging multilayer structur	paragraph 5 PPWR Examination of design-related losses of valuable n minium foil layer; examination required (test if necessary) whether the design or packaging category 13 has to be factored. magnetic components ≥ 5% by weight in relation to the object of assessment; ferrous metal fraction. If so, a complete loss of valuable material for package st whether identifiability, including targeted separability, is given in sensor-bases of valuable materials. components containing valuable material that have a verified density of less as as well as printing inks) shall be counted towards available valuable material	examination ging category sed sorting. F s than 1 g/cm ial share.	ing into aluminiun required (test if r 13 has to be fact Restrictions must ³ (including additi	necessary) when cored. be taken into ac ves, masterbato	ther the design
-	PFAS Presence of an alu valuable material f Presence of ferron causes sorting into Requirement to te proportionate loss Only the packaging multilayer structur For any deviating d	paragraph 5 PPWR Examination of design-related losses of valuable n minium foil layer; examination required (test if necessary) whether the design or packaging category 13 has to be factored. magnetic components ≥ 5% by weight in relation to the object of assessment; ferrous metal fraction. If so, a complete loss of valuable material for package at whether identifiability, including targeted separability, is given in sensor-bases of valuable materials. components containing valuable material that have a verified density of less es as well as printing inks) shall be counted towards available valuable materie etermination in the sense that incompatible substances do not negatively affected.	examination ging category sed sorting. F than 1 g/cm ial share. fect recyclabi	ing into aluminiun n required (test if n 13 has to be fact Restrictions must ³ (including additi ility in individual c	necessary) when ored. be taken into ad ves, masterbato cases, individual	ther the design count as thes, fillers, or in evidence produced
parameters 0.1 0.2 2 5	PFAS Presence of an alu valuable material f Presence of ferron causes sorting into Requirement to te proportionate loss Only the packaging multilayer structur For any deviating d	paragraph 5 PPWR Examination of design-related losses of valuable n minium foil layer; examination required (test if necessary) whether the design or packaging category 13 has to be factored. magnetic components ≥ 5% by weight in relation to the object of assessment; ferrous metal fraction. If so, a complete loss of valuable material for package st whether identifiability, including targeted separability, is given in sensor-bases of valuable materials. components containing valuable material that have a verified density of less as as well as printing inks) shall be counted towards available valuable material	examination ging category sed sorting. F than 1 g/cm ial share. fect recyclabi	ing into aluminiun n required (test if n 13 has to be fact Restrictions must ³ (including additi ility in individual c	necessary) when ored. be taken into ad ves, masterbato cases, individual	ther the design count as thes, fillers, or in evidence produced
parameters 0.1 0.2 2 5	PFAS Presence of an alu valuable material f Presence of ferron causes sorting into Requirement to te proportionate loss Only the packaging multilayer structur For any deviating d	paragraph 5 PPWR Examination of design-related losses of valuable m minium foil layer; examination required (test if necessary) whether the design or packaging category 13 has to be factored. agnetic components ≥ 5% by weight in relation to the object of assessment; ferrous metal fraction. If so, a complete loss of valuable material for packag st whether identifiability, including targeted separability, is given in sensor-bases of valuable materials. components containing valuable material that have a verified density of less as well as printing inks) shall be counted towards available valuable material testing must be provided. Requirements for the implementation and docume	examination ging category sed sorting. F s than 1 g/cm ial share. fect recyclabi ntation of ar	ing into aluminiun n required (test if n 13 has to be fact Restrictions must ³ (including additi ility in individual c	necessary) when ored. be taken into ad ves, masterbato cases, individual	ther the design count as thes, fillers, or in evidence produced
parameters 0.1 0.2 2 5 8	PFAS Presence of an alu valuable material f Presence of ferron causes sorting into Requirement to te- proportionate loss Only the packaging multilayer structur For any deviating d through analytical	Paragraph 5 PPWR Examination of design-related losses of valuable m minium foil layer; examination required (test if necessary) whether the design or packaging category 13 has to be factored. aggnetic components ≥ 5% by weight in relation to the object of assessment; ferrous metal fraction. If so, a complete loss of valuable material for packag st whether identifiability, including targeted separability, is given in sensor-bases of valuable materials. components containing valuable material that have a verified density of less es as well as printing inks) shall be counted towards available valuable material testing must be provided. Requirements for the implementation and docume Scope of application of the design parameters category	examination ging category sed sorting. F s than 1 g/cm ial share. fect recyclabi ntation of ar	ing into aluminiun n required (test if n 13 has to be fact Restrictions must ³ (including additi ility in individual c	necessary) when ored. be taken into ad ves, masterbato cases, individual	ther the design count as thes, fillers, or in evidence produced
parameters 20.1 20.2 25	PFAS Presence of an alu valuable material f Presence of ferron causes sorting into Requirement to te proportionate logitory only the packaging multilayer structur For any deviating of through analytical The criterion explice	paragraph 5 PPWR Examination of design-related losses of valuable m minium foil layer; examination required (test if necessary) whether the design or packaging category 13 has to be factored. agnetic components ≥ 5% by weight in relation to the object of assessment; ferrous metal fraction. If so, a complete loss of valuable material for packag st whether identifiability, including targeted separability, is given in sensor-bases of valuable materials. components containing valuable material that have a verified density of less as a well as printing inks) shall be counted towards available valuable material testing must be provided. Requirements for the implementation and docume Scope of application of the design parameters categor itly does not apply to metallized packaging.	n causes sorti examination ging category sed sorting. F is than 1 g/cm ial share. fect recyclabi ntation of ar prised as P	ing into aluminium 1 required (test if i 13 has to be fact Restrictions must ³ (including additi ility in individual c i individual evide	necessary) when cored. be taken into ac ves, masterbato cases, individual nce are specifie	ther the design count as thes, fillers, or in evidence produced d in Annex 3.1.
parameters 0.1 0.2 2 5 8	PFAS Presence of an alu valuable material f Presence of ferron causes sorting into Requirement to te: proportionate loss Only the packaging multilayer structur For any deviating d through analytical The criterion explid Explicitly not applie	Examination of design-related losses of valuable m Examination required (test if necessary) whether the design or packaging category 13 has to be factored. nagnetic components ≥ 5% by weight in relation to the object of assessment; ferrous metal fraction. If so, a complete loss of valuable material for packagi st whether identifiability, including targeted separability, is given in sensor-bases of valuable materials. components containing valuable material that have a verified density of less es as well as printing inks) shall be counted towards available valuable material testing must be provided. Requirements for the implementation and docume Scope of application of the design parameters categor ity does not apply to metallized packaging. cable to large-format transport packaging and to plastic packaging for which	n causes sorti examination ging category sed sorting. F is than 1 g/cm ial share. fect recyclabi ntation of ar prised as P	ing into aluminium 1 required (test if i 13 has to be fact Restrictions must ³ (including additi ility in individual c i individual evide	necessary) when cored. be taken into ac ves, masterbato cases, individual nce are specifie	ther the design count as thes, fillers, or in evidence produced d in Annex 3.1.
parameters 0.1 0.2 2 5 8 0.1 0.1	PFAS Presence of an alu valuable material f Presence of ferron causes sorting into Requirement to te proportionate loss Only the packaging multilayer structur For any deviating of through analytical The criterion explice Explicitly not applice recycling (e.g. EPS,	paragraph 5 PPWR Examination of design-related losses of valuable m minium foil layer; examination required (test if necessary) whether the design or packaging category 13 has to be factored. agnetic components ≥ 5% by weight in relation to the object of assessment; ferrous metal fraction. If so, a complete loss of valuable material for packag st whether identifiability, including targeted separability, is given in sensor-bases of valuable materials. components containing valuable material that have a verified density of less as a well as printing inks) shall be counted towards available valuable material testing must be provided. Requirements for the implementation and docume Scope of application of the design parameters categor itly does not apply to metallized packaging.	n causes sorti examination ging category sed sorting. F a than 1 g/cm ial share. fect recyclabi ntation of ar prised as P a separate pl	ing into aluminium 1 required (test if i 13 has to be fact Restrictions must ³ (including additi ility in individual c in individual eviden lastic-type-only m	necessary) whet cored. be taken into ac ves, masterbate cases, individual nce are specifie	ther the design count as thes, fillers, or in evidence produced d in Annex 3.1. is a prerequisite for

A 2.14 HDPE and PP – rigid (natural/coloured)

According to the current status, packaging category no. 14 does not include any packaging subject to system participation. If any packaging subject to system participation falls under packaging category no. 14 in the future, its recyclability must be assessed according to the main material in accordance with Annex A 2.10 for HDPE and Annex A 2.12 for PP.

A 2.15 PS – rigid (natural/coloured)

a. Scope of application

The following assessment principles, criteria and requirements apply to packaging with PS as the main material. These are, for example: bottles < 5 litres, cups, trays, blisters, cans, jars.

b. Classification of design features incl. examination and test requirements

The most common design features for rigid plastic packaging made of PS are listed below in a table, assigned to the columns 'valuable material, 'incompatibilities', 'separable or conditionally compatible', and 'examination of design-related losses of valuable materials'. The latter assignment may also be additive and refers to the corresponding examination or assessment regulation in the lower section of the table at the end of the chapter.

c. Calculation of recyclability

- 1. If no parameter is classified as 'incompatible', the recyclability corresponds numerically to the sum of the shares of the materials or formulations that are classified as 'valuable material'. This scenario represents the standard case.
- 2. If one or more design features are categorised as 'requiring examination, it must be determined whether they result in design-related valuable material losses. If such losses can be ruled out through examination, the feature has no impact on the calculation in accordance with section 1. Otherwise, design-related losses must be determined and deducted.
- 3. If one or more design features are categorised under 'incompatibilities', the recyclability is 0%.
- d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

No individual evidence of the existence of a recycling infrastructure is required for the declaration of recyclability; however, this is recommended.

		Main hadu				
		Main body	Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuab material
		PS	х			
		HIPS	х			
	Material	GPPS	Х			
		SBS	Х			
		rPS	х			
		COC layer		Х		
		EAA, EEA, EMA, EMAA layer		х		
		EVA layer		х		
		EVOH layer		Х		
		PA layer		х		
		HDPE layer		Х		
		MDPE layer		x		
		LDPE layer		Х		
		LLDPE layer		х		
	Materials in	rPE PE(REC) layer		х		
	multilayer,	PE-PP blend layer		х		
	density ≥ 1 g/cm ³	PE-X layer		х		
	or ≤ 1.08 g/cm ³	PE peel layer (non-specific)		Х		
		PET layer		х		
		rPET layer		х		
		PP layer		Х		
		PP-ethylene copolymer layer		х		
		rPP PP(REC) layer		Х		
		PP Peel layer (non-specific)		х		
		PVDC layer		х		
Main body		PVOH layer		х		
		Other non-PS polymer layer		х		
	Materials in multilayer, density < 1 g/cm ³ or > 1.08 g/cm ³	Multilayer structure, density < 1 g/cm ³ or > 1.08 g/cm ³			х	Р5
	Structure	Multilayer structure				P2
	Masterbatch or	Masterbatch, colour batch	х			
	colour batch	Dyeing using soot-carbon-based pigments (also when used for internal layers)				P2
	Fillers, mineral	Absorber (mineral)	Х			P5
	additives and	Lime, Chalk	Х			P5
	absorbers	Talc	Х			P5
	405010615	Titanium dioxide	Х			P5
	Additives	Additive	Х			
		Acrylic-based coating		Х		
		AlOx			Х	
	Coating	Metallisation			Х	
	coating	PVOH coating		х		
		SiOx			х	
		Other coatings		Х		P8
	Tie layer, adhesive	Tie layer		х		
	application	Adhesive			х	
	Decoration	Direct printing with non-PVC-based binder	1	1	х	

		Minor components					
			Valuable material	Incompatibiliti es	Separable or conditionally compatible	Examination of design-related losses of valuable material	
		rigid HDPE, rHDPE from closures and functional elements	Х				
		rigid PP, rPP from closures and functional elements	Х				
		PA in applicators, 1 g/cm ³ ≤ density ≤ 1.08 g/cm ³		х			
		SBS	Х				
Closure/ functional head	Material	Aluminium			x x	P0.1	
Tunctional neau		Stainless steel Glass			x x		
		Steel			X	P0.2	
		Non-PS plastic, foamed or filled, density > 1.08 g/cm ³			x		
		Other polymer components, 1 g/cm ³ ≤ density ≤ 1.08 g/cm ³		Х			
		Monolayer film made of PS, 1 g/cm ³ ≤ density (incl. print and lacquer) ≤ 1.08 g/cm ³	х				
		Mono/multilayer film incl. print and lacquer, density < 1 g/cm ³ or > 1.08 g/cm ³			х	Р5	
		Mono (not PS)/multilayer film, 1 g/cm³ ≤ density (incl. printing and		x			
	Material	lacquer) ≤ 1.08 g/cm^3 Fibre-based labels if the cellulose share can be removed by means of cold		~			
Label/sleeve/		washing			Х		
sealing film		Fibre-based labels if the cellulose share cannot be removed by means of cold washing		х			
		Aluminium (sealing) lid*, aluminium membrane*	х				
		Printing ink with non-PVC-based binder	^		Х		
	Decoration				x		
		Large labels (taking up > 50% of the projected surface) made from foreign				P2	
	Coverage	material Full sleeve labels				P2	
Label	Adhesive	Adhesive			х		
	application Additives	Additive	х				
	Additives	Acrylic-based coating	^	Х			
	Coating	Alox		X	Х		
Sealing film		Metallisation			х		
		PVOH coating		х			
		SiOx			Х		
		Other coatings		Х		P8	
	Structure	Other design parameters Different types of plastic used on front and back sides				P2	
	ottattate	> 50% fully printed black (including background) using soot-carbon-based					
		pigments				P2	
Other design parameters	Decoration	Metal pigments applied on a large scale (taking up > 50% of the projected surface) (lacquering, coating or embossing))				P2	
	PFAS	PFAS share in food-contact packaging ≥ limit value according to Article 5,		x			
*Credit as valuable		paragraph 5 PPWR individual evidence in accordance with Annex 3.3		~			
	,	Examination of design-related losses of valuable	material				
20.1		minium foil layer; examination required (test if necessary) whether the design or packaging category 15 has to be factored.	causes sorting	g into aluminium f	raction. If so, a	complete loss of	
90.2	Presence of ferror	nagnetic components ≥ 5% by weight in relation to the object of assessment; s metal fraction. If so, a complete loss of valuable material for packaging cate			cessary) whethe	r the design causes	
2		st whether identifiability, including targeted separability, is given in sensor-bas es of valuable materials.	ed sorting. Re	strictions must be	taken into acco	ount as	
	Only PS componer	ts and shares with a density of > 1 g/cm ³ and a verified density of < 1.08 g/cm	³ (including ad	lditives, masterbat	ch, fillers or in r	nultilayer and	
25	Shares of PO-valua	hs) shall be counted towards available valuable material share. ble material with a verified density of less than 1 g/cm ³ (including additives, n ted towards available valuable material share.	nasterbatches,	, fillers, or in multil	ayer structures	as well as printing	
28		letermination in the sense that incompatible substances do not negatively aff testing must be provided. Requirements for the implementation and document	-	•			
	·	Scope of application of the design parameters categ	orised as P				
		ith share and each the matellined sector inc					
20.1	The criterion explicitly does not apply to metallized packaging. Explicitly not applicable to large-format transport packaging and to plastic packaging for which a separate plastic-type-only mono-collection is a prerequisite for						
20.1	Explicitly not appli		a separate plas	stic-type-only mor	o-collection is a	a prerequisite for	

A 2.16 EPS and XPS – rigid (natural/coloured)

a. Scope of application

The following assessment principles, criteria and requirements apply to packaging made of expanded polystyrene (EPS). These are, for example: cool boxes, edge protectors and other impact protection for electronic items. These are also applicable to packaging made of extruded polystyrene (XPS), such as trays.

b. Classification of design features incl. examination and test requirements

Packaging subject to system participation made of EPS or XPS can only be recycled in Germany if it is collected as mono-material (white and coarse-grained) through bring systems at recycling centres. Packaging that is separately collected in this form by the end consumer must therefore be classified as 100% valuable material.

c. Calculation of recyclability

The recyclability is 0 %, unless individual evidence is provided.

d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

Individual evidence in accordance with Section 4 and Annex 3.3 is required for the declaration of recyclability. A prerequisite that must currently be verified is that the respective quantities have been collected in a mono collection outside the usual collection of lightweight packaging via the collection system. This is possible, for example, through bring systems at recycling centres, provided that the collection is sorted as mono-material (white and coarse-grained) (fraction number 340).

A 2.17 Other rigid plastics (e.g. PVC, PC) including multi- materials – rigid

a. Scope of application

The following assessment principles, criteria and requirements apply to rigid plastic packaging such as barrels and large containers (unless they belong to packaging categories 7, 8, 10, 12, 14, 15, 16 and 19).

b. Classification of design features incl. examination and test requirements

Recycling paths do not exist for sales packaging subject to system participation, such as rigid packaging like barrels and large containers (unless they belong to packaging categories 7, 8, 10, 12, 14, 15, 16, and 19). Consequently, no requirements for recycling-compatible design can be derived as assessment regulation.

c. Calculation of recyclability

The recyclability is 0 %, unless individual evidence is provided.

d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

For rigid sales packaging such as barrels and large containers (unless they belong to packaging categories 7, 8, 10, 12, 14, 15, 16 and 19), individual evidence in accordance with Section 4 and Annex 3.3 is required for the declaration of recyclability. Based on the verified recycling path, the criteria for recycling-compatible design must be derived and applied to the object of assessment.

A 2.18 Other flexible plastics including multi-materials – flexible

a. Scope of application

The following assessment principles, criteria and requirements apply to flexible plastic packaging such as bags, blisters, thermoformed packaging, vacuum packaging, big bags and stretch films (unless they belong to packaging categories 9, 11, 13, 18 and 19).

b. Classification of design features incl. examination and test requirements

Recycling paths do not exist for flexible plastic packaging subject to system participation, such as bags, blisters, thermoformed packaging, vacuum packaging, big bags and stretch films (unless they belong to packaging categories 9, 11, 13, 18 and 19). Consequently, no requirements for recycling-compatible design can be derived as assessment regulation.

c. Calculation of recyclability

The recyclability is 0 %, unless individual evidence is provided.

d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

For flexible plastic packaging such as bags, blisters, thermoformed packaging, vacuum packaging, big bags and stretch films (unless they belong to packaging categories 9, 11, 13, 18 and 19), individual evidence in accordance with Section 4 and Annex 3.3 is required for the declaration of recyclability. Based on the verified recycling path, the criteria for recycling-compatible design must be derived and applied to the object of assessment.

A 2.19 (e.g. PLA) Biodegradable plastics – rigid (e.g. PLA, PHB) and flexible (e.g. PLA)

a. Scope of application

The following assessment principles, criteria and requirements apply to packaging, rigid and flexible, made of biodegradable plastics such as PLA and PHB.

b. Classification of design features incl. examination and test requirements

Recycling paths do not exist for sales packaging made of biodegradable plastics subject to system participation obligations. Consequently, no requirements for recycling-compatible design can be derived as assessment regulation.

c. Calculation of recyclability

The recyclability is 0 %, unless individual evidence is provided.

d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

Individual evidence in accordance with Section 4 and Annex 3.3 is required for the declaration of recyclability. Based on the verified recycling path, the criteria for recycling-compatible design must be derived and applied to the object of assessment.

A 2.20 Wooden packaging, including cork

a. Scope of application

The following assessment principles, criteria and requirements apply to packaging made of wood, including cork, such as pallets, crates and boxes.

b. Classification of design features incl. examination and test requirements

Recycling paths do not exist for sales packaging made of wood, including cork subject to system participation obligations. Consequently, no requirements for recycling-compatible design can be derived as assessment regulation.

c. Calculation of recyclability

The recyclability is 0 %, unless individual evidence is provided.

d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

Individual evidence in accordance with Section 4 and Annex 3.3 is required for the declaration of recyclability. Based on the verified recycling path, the criteria for recycling-compatible design must be derived and applied to the object of assessment.

A 2.21 Natural and synthetic textile fibres

a. Scope of application

The following assessment principles, criteria and requirements apply to packaging made of natural/synthetic textile fibres, such as bags, pouches and cords.

b. Classification of design features incl. examination and test requirements

Recycling paths do not exist for textile sales packaging subject to system participation obligations. Consequently, no requirements for recycling-compatible design can be derived as assessment regulation.

c. Calculation of recyclability

The recyclability is 0 %, unless individual evidence is provided.

d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

Individual evidence in accordance with Section 4 and Annex 3.3 is required for the declaration of recyclability according to the minimum standard. Based on the verified recycling path, the criteria for recycling-compatible design must be derived and applied to the object of assessment.

A 2.22 Clay, stone, ceramics, porcelain

a. Scope of application

The following assessment principles, criteria and requirements apply to packaging made of clay, stone, ceramics and porcelain, such as pots, containers, bottles and jugs.

b. Classification of design features incl. examination and test requirements

Recycling paths do not exist for sales packaging made of stoneware and porcelain subject to system participation obligations. Consequently, no requirements for recycling-compatible design can be derived as assessment regulation.

c. Calculation of recyclability

The recyclability is 0 %, unless individual evidence is provided.

d. Requirement for individual evidence regarding the criterion of the existence of a recycling infrastructure

Individual evidence in accordance with Section 4 and Annex 3.3 is required for the declaration of recyclability. Based on the verified recycling path, the criteria for recycling-compatible design must be derived and applied to the object of assessment.

Annex 3: Analyses and individual evidence

Annex 3.1: Requirements for compatibility analyses

- 1. Examining and determining the compatibility of packaging variations in deviation from the classification in Annex 2 requires analyses, measurements or calculations. These analyses, measurements or calculations must be conducted using reliable, exact and reproducible state-of-the-art methods whose results are subject to little uncertainty.
- 2. In the case of empirical analyses in laboratories, pilot plants or operations, the analysis methods, sample preparation and all relevant machine settings must be documented and aligned with the requirements set out in the first paragraph.
- 3. When planning and conducting analyses, it must be ensured (and explained in detail in the analysis report) that the chosen analysis and determination method, i.e. the determination parameters and criteria, is suitable for justifying that a packaging variation has been classified differently from the specification in Annex 2 based on the reference application(s) defined there.
- 4. If the analysis results are used to trigger general exemptions from the classification in Annex 2 for certain substances, materials or recipes, the analysis reports must be published in a suitable manner and in compliance with the requirements specified in the first to third paragraphs; the timing of the publication must enable participation in the minimum standard consultation.

Annex 3.2: Requirements for evidencing sortability and separability

- 1. When evidence is mandatory, examining and determining the sortability and separability of a packaging variation's valuable content requires measurements and calculations. These measurements and calculations must be conducted using reliable, exact and reproducible state-of-the-art methods whose results are subject to little uncertainty.
- 2. In the case of empirical analyses in laboratories, pilot plants or operations, the analysis methods, sample preparation and all relevant machinery and settings parameters must be documented and aligned with the requirements set out in the first paragraph. It is expressly noted that if measurements are conducted in operational plants with individual machinery or units being recognised, the functional integration of this individual machinery or these units into the overall process must also be documented (e.g. roughing stage for particles in the range of 20–140mm, cleaning stage, etc.) and the explicit indication of the maintenance state as per the manufacturer's maintenance requirements is mandatory (e.g. most recent calibration).
- 3. When planning and conducting analyses, it must be ensured (and explained in detail in the analysis report) that the chosen analysis and determination method, i.e. the determination parameters and criteria, is suitable for transferring the results to the practice of sorting and recovery. This particularly refers to the question whether state-of-the-art technology was used.
- 4. Sortability and separability are not binary, but rather an analogously developed packaging property. Design-related packaging losses (and therefore direct proportional losses of valuable materials) in the sorting and separation processes must be quantified. The analysis methods must take into account, for example, that the individual operations for sorting out non-metallic sorting fractions are carried out in several stages and that cleaning stages (RCS processes) can partially compensate for incorrect ejections. Stochastic and systematic measurement errors must also be taken into account so that only design-related losses are quantified.
- 5. If the analysis results are used to trigger general exemptions from the individual evidence obligation for certain packaging variations, packaging components or packaging material variations, the analysis reports must be published in a suitable manner and in compliance with the requirements specified in the first to third paragraphs; the reports must be published prior to the start of the minimum standard consultation.

Annex 3.3: Requirements for evidencing the existence of recycling infrastructure

Individual evidence for the existence of recycling infrastructure is recommended for packaging categories with an application rate below 80%, according to an analysis of the German Environment Agency⁸. Within the scope of the minimum standard, this evidence is mandatory if the application rate for the packaging category falls below 20%. Packaging categories for which individual evidence is recommended or mandatory, as well as the fraction numbers of the sorting fractions through which such evidence can be provided, are listed in the following table.

Packaging category, as defined in table 1 of Annex II PPWR:		Application rate (in %)*	Individual evi- dence recom- mended		Individual evidence by frac- tion numbers	
No	Packaging type					
3	Liquid packaging carton ⁹	PolyAl 24.1 – 38.8	x		323-512 323-503	
3	Composite packaging of which the majority is pa- per/cardboard	42.7 – 46.9	х		550	
8	Thermoforms made of PET- A and PET-C – rigid (transparent, clear/col- oured, opaque)	6.4 - 48.3		x	328-5 328-6	
8	Other packaging made of PET-A and PET-C – rigid (transparent, clear/col- oured, opaque)	6.4 - 48.3		x	328-5 (328-1) (328-2) (328-3)	
9	PET – flexible (Natural/coloured)	0		x	_	
11	PE – flexible (Natural/coloured)	50.8	х		310 (323) 323-2	
13	Flexible packaging made from PP	33.0	Х		324-2 (310) (323) (323-2) (324-1)	
15	Rigid packaging made from PS	64.4	х		331 (351)	

^{8 &}lt;u>https://www.umweltbundesamt.de/publikationen/praxis-der-sortierung-verwertung-von-verpackungen-1</u>

⁹ Individual evidence is recommended for the PO and AI share (polyolefins from PE/PP film and PE/PP caps and closures as well as aluminium foil), as the existence of the recycling infrastructure for polyAI (by-product from the processing of paper grades 5.03.00 as per EN 643 or fraction number 512 consisting of polyolefin-based plastics, plastic-aluminium composites and aluminium, largely fibre-free (< 5% DM) according to technical standards) has been limited to date.</p>

caging category, as defined table 1 of Annex II PPWR:	Application rate (in %)*	Individual evi- dence recom- mended	Individual evi- dence mandatory	Individual evidence by frac- tion numbers
Packaging type		monaca		
Rigid packaging made from EPS and XPS	0		x	340
Other rigid plastic packag- ing (e.g. PVC, PC), includ- ing multi-materials	0		x	_
Other flexible plastic pack- aging, including multi-mate- rials	0		x	_
Biodegradable flexible and rigid plastic packaging [1] (e.g. PLA, PHB)	0		x	_
Wood, cork	0		х	_
Textiles (natural and syn- thetic textile fibres)	0		×	_
Ceramics or porcelain stoneware (clay, stone)	0		x	_
	Packaging type Packaging type Rigid packaging made from EPS and XPS Other rigid plastic packag-ing (e.g. PVC, PC), including multi-materials Other flexible plastic pack-aging, including multi-materials Biodegradable flexible and rigid plastic packaging [1] (e.g. PLA, PHB) Wood, cork Textiles (natural and synthetic textile fibres) Ceramics or porcelain	table 1 of Annex II PPWR: rate (in %)* Packaging type Rigid packaging made from EPS and XPS Other rigid plastic packag-ing (e.g. PVC, PC), including multi-materials Other flexible plastic packaging, including multi-materials Other flexible plastic packaging [1] (e.g. PLA, PHB) Wood, cork Textiles (natural and synthetic textile fibres) Ceramics or porcelain O 	table 1 of Annex II PPWR: rate (in %)* dence recommended Packaging type 0 0 Rigid packaging made from EPS and XPS 0 0 Other rigid plastic packaging (e.g. PVC, PC), including multi-materials 0 0 Other flexible plastic packaging, including multi-materials 0 0 Biodegradable flexible and rigid plastic packaging [1] (e.g. PLA, PHB) 0 0 Wood, cork 0 0 0 Textiles (natural and synthetic textile fibres) 0 0 0	table 1 of Annex II PPWR: rate (in %)* dence recommended dence mandatory Packaging type 0 X Rigid packaging made from EPS and XPS 0 X Other rigid plastic packaging (e.g. PVC, PC), including multi-materials 0 X Other flexible plastic packaging, including multi-materials 0 X Biodegradable flexible and rigid plastic packaging (i.g., PLA, PHB) 0 X Wood, cork 0 X Textiles (natural and synthetic textile fibres) 0 X Ceramics or porcelain 0 X

The application rates are provisional and reflect the current state of progress. Changes and corrections may still be made during the final stages of the work.

Requirements for documenting individual evidence under Section 4, applicable to dual systems

Individual evidence must be produced for each party under participation obligation, packaging type and reference year. The systems should provide the ZSVR with evidence for a given reference year in an aggregated form, i.e. with a report pursuant to section 21 (2) VerpackG. They are required to document recovery volumes and participation volumes, the latter classified as recyclable by individual evidence.

- 1. Evidence of recovery volumes for the reference year includes:
 - (1) Supply volumes received by the system as per the list of weighting notes, broken down by fraction number, showing sender and final recipient facility
 - (2) Evidence of high-quality mechanical recycling under Section 4 (2) for final recipient facilities
 - (3) Eligible shares of the packaging type to be documented as per product specification, broken down by fraction number (based on a Germany-wide analysis, if required)
 - (4) Recovery ratio recommended for the final recipient facilities, as per certificate and broken down by fraction number (for the packaging type to be documented)
 - (5) Subtotals and totals for the volumes of the packaging type that is to be documented and was transferred for high-quality mechanical recycling. Proof used as individual evidence of recovery volumes must be attested by the expert instructed to audit the volume flow report.

- 2. Evidence of participation volumes for the reference year includes:
 - Participation volumes, broken down by packaging type to be documented and party under obligation, including a conclusive indication of individual packaging (EAN, GTIN or internal product code)
 - (2) Information about the recyclability of the packaging included in the individual evidence (recyclability as defined under Section 3.2 et seqq. in this minimum standard)
 - (3) Total participation volumes covered by the individual evidence, broken down by packaging type
 - (4) Note: The sums of specific recovery volumes by packaging type under 1(5) must be equal to or exceed the corresponding volumes under 2 (3).

The following examples serve to clarify the procedure:

Example 1:

A producer of frozen products distributes these goods in large polystyrene (EPS) boxes. It has been determined that the packaging complies with the process-specific criteria under Sections 3.2 and 3.3 of this minimum standard. To fulfil their producer responsibility, the party subject to system participation has agreed that the system will ensure that during the reference year at least the equivalent of the specific EPS participation volume be transferred for high-quality recovery. The system has classified the packaging as recyclable.

Evidence must be produced as follows:

- certificate issued for the EPS recycling plant(s) as the final recipient pursuant to the Verpackungsgesetz, certifying high-quality, mechanical EPS recycling;
- verifiable documentation demonstrating that packaging subject to system participation in a volume in line with the specific participation volume has been collected, as well as verifiable documentation of the corresponding volumes delivered to the certified EPS recycling plant(s).

Example 2:

A producer packages goods in transparent PET-A monolayer trays. All packaging characteristics comply with the process-specific criteria under Sections 3.2 and 3.3, for example labels made from PP have been applied with wash-off adhesives. The participation volume is 600 tonnes p.a. The system has classified the packaging as recyclable. The system has committed to transferring a corresponding volume of PET trays for high-quality mechanical recycling in the reference year. To this end, the system has entered into an agreement with a PET recycling plant that produces PET pellets from these trays and has been certified for the 328-2 fraction with a mechanical recycling rate of 100%.

Evidence must be produced for:

- In the case of the 328-2 fraction, a delivery volume of at least 2,000 tonnes (equivalent to a maximum of 600 tonnes of trays)
- Actual existence of the equivalent in trays
- Transfer for high-quality mechanical recycling (facility certificate)