



PPWR COMPLIANCE COUNTDOWN:

WHAT MANUFACTURERS AND THEIR SUPPLY CHAINS MUST DO NOW

WEBINAR HOUSEKEEPING



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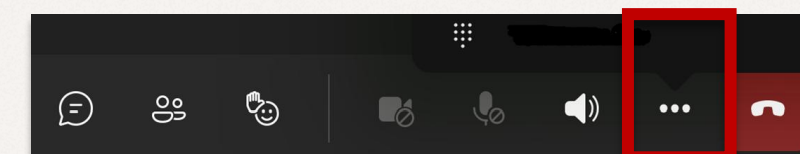
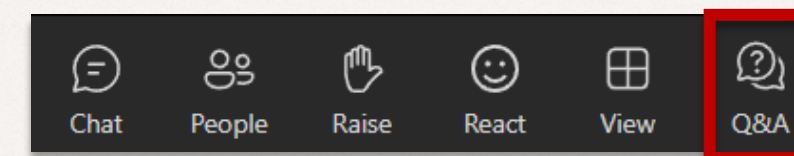
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Speaker Introduction

CHUCK LEPARD



**EXECUTIVE CONSULTANT,
IMDS & CDX AMERICAS REPRESENTATIVE**

CHUCK.LEPARD@DXC.COM

[LINKEDIN PROFILE](#)

- Degrees in Electrical & Computer Engineering and Computer Science
- Honorable Discharge, United States Navy
- 40+ Years EDS/General Motors/Hewlett Packard / HPE / EntServ / DXC
- Decades of plant floor and engineering experience in related areas
- Advisor to multiple manufacturing industry groups
 - Automotive Industry Action Group, International Aerospace Environmental Group,
 - Association of Equipment Manufacturers, Responsible Materials Initiative
- Leader in Standards Development organizations
 - American National Standards Institute (ANSI), International Standards Organization (ISO) Technical Committee TC-111 on Environmental Sustainability Data Exchange
 - IPC 2-18 175x family for Product Declaration and Compliance reporting

Speaker Introduction

MONIKA E. KOTKOWSKA

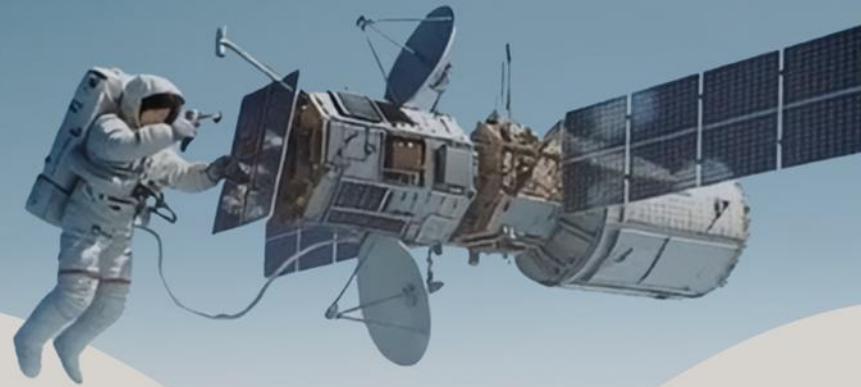


**SENIOR CDX CONSULTANT / REGULATORY
PRODUCT COMPLIANCE EXPERT**

MONIKA.KOTKOWSKA@DXC.COM

[LINKEDIN PROFILE](#)

- Specializes in Regulatory Product Compliance, ESG, and Chemical Management Solutions
- MBA with thesis on Digital Product Passport for sustainable sourcing and monitoring of critical raw materials in EV battery production
- Master's degree in Chemistry and Engineering from University of Technology in Wroclaw, Poland
- 10+ years in global regulatory product compliance, ESG and chemical management
- Certified Agile, SCRUM, PRINCE Project Manager
- Active member of automotive, aerospace environmental, and equipment manufacturing industry groups



115,000+
Employees

60+
Years of innovation

70+
Countries

DXC'S ECOSYSTEM FOR MATERIAL COMPLIANCE

INTERNATIONAL
MATERIAL DATA
SYSTEM

CDX



Material Collector System

IMDS / CDX / MaCS

enables companies to

- **collect,**
- **validate,**
- **and manage**

material compliance data across global supply chains - supporting regulatory & sustainability goals.

Whether used standalone or fully integrated into internal systems, our solutions ensure

- **secure,**
- **efficient,**
- **and transparent compliance operations.**

Learn more on mdsystem.com and cdxsystem.com



**A LEADING PLATFORM FOR
SUSTAINABLE SUPPLY CHAIN
COMMUNICATION & ANALYTICS**

2011

Developed

17K+

Registered
Companies

64K+

Registered
Users

89+

Countries where
CDX is used

2M+

Material Data
Sheets (MDS)

66K+

Conflict & Extended
Materials Declarations

As active members of international associations, CDX work closely with industries to shape standards and develop solutions that drive compliance forward.





Material Compliance

Collect, validate, and manage product material declarations across global supply chains.



Responsible Sourcing

Mineral due diligence platform for CMRT and EMRT supply chain reporting.



BPO Services

Managed compliance support for supplier engagement and reporting execution.



AGENDA

- 1 From Directive to Regulation — What Changed
- 2 Substances of Concern & Heavy Metals (Articles 5)
- 3 Recyclability Grades & Market Access (Article 6)
- 4 Recycled Content & Packaging Minimisation (Articles 7, 10)
- 5 Labelling & Digital Data Carriers (Article 12)
- 6 EPR, Conformity & Documentation (Articles 16, 38–39, 44)
- 7 Before You Can Comply, You Need to Know Your Business
- 8 How CDX Supports Compliance: System demo & Q&A

THE LEGAL SHIFT: FROM DIRECTIVE TO REGULATION

This isn't a new topic. Packaging rules existed since 1994. What changed is *how* they apply and *who* is responsible.

Directive 94/62/EC

- Required national transposition - each EU member state wrote its own law
- Result: 27 different national interpretations of the same rules
- Vague structural requirements - no clear substance thresholds
- Industrial/B2B packaging largely excluded from scope
- No harmonized technical file or declaration requirement
- Compliance monitoring: fragmented, national authorities only

Regulation (EU) 2025/40

- No transposition needed - same rules in all 27 member states from day one
- Precise, quantified requirements: thresholds, percentages, dates
- Industrial & B2B packaging fully in scope - no exceptions
- Mandatory EU Declaration of Conformity + technical documentation
- Level playing field: your competitor in France faces identical requirements
- Market surveillance: coordinated EU-wide enforcement

Why this change was needed:

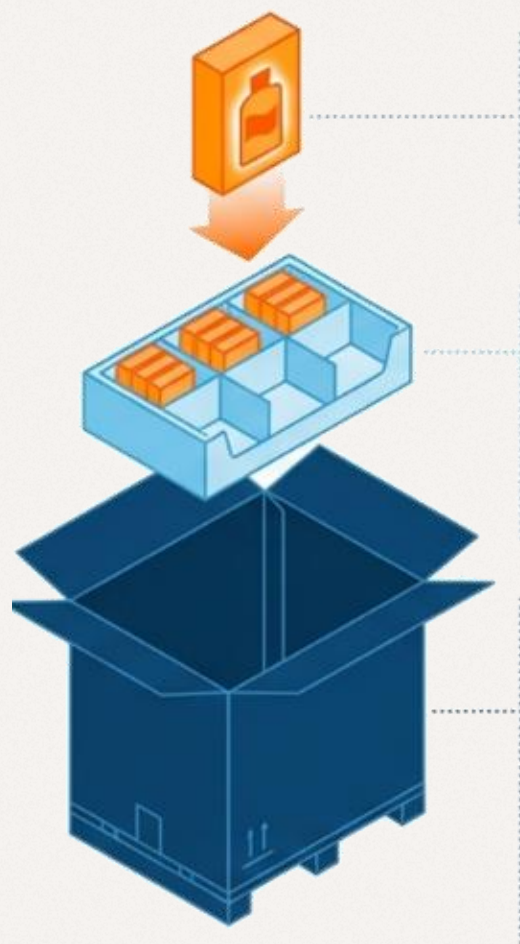
Packaging waste is now 36% of all municipal waste in the EU (Eurostat 2010–2021 data).
The Directive could not stop this growth, this is why a stronger, binding law was necessary.

WHERE ARE WE NOW ?



KNOW YOUR PACKAGING — KNOW YOUR OBLIGATIONS

PPWR applies to all packaging placed on the EU market. Understanding what you have is the first step.



How packaging is layered

- ▶ **Sales Packaging (Primary)**
Direct contact with product; unit picked off shelf. Constitutes a sales unit to the end user at the point of sale.
- ▶ **Grouped Packaging (Secondary)**
Groups multiple sales units; removable without affecting product. Used to facilitate shelf restocking or create a stock-keeping unit.
- ▶ **Transport & E-commerce Packaging (Tertiary)**
Pallets, outer boxes, e-commerce mailers. Facilitates handling and transport; prevents damage; excludes shipping containers.

Specific Categories

Based on how packaging is used

Service Packaging

Filled at point of sale (bags, cups).

Take-away Packaging

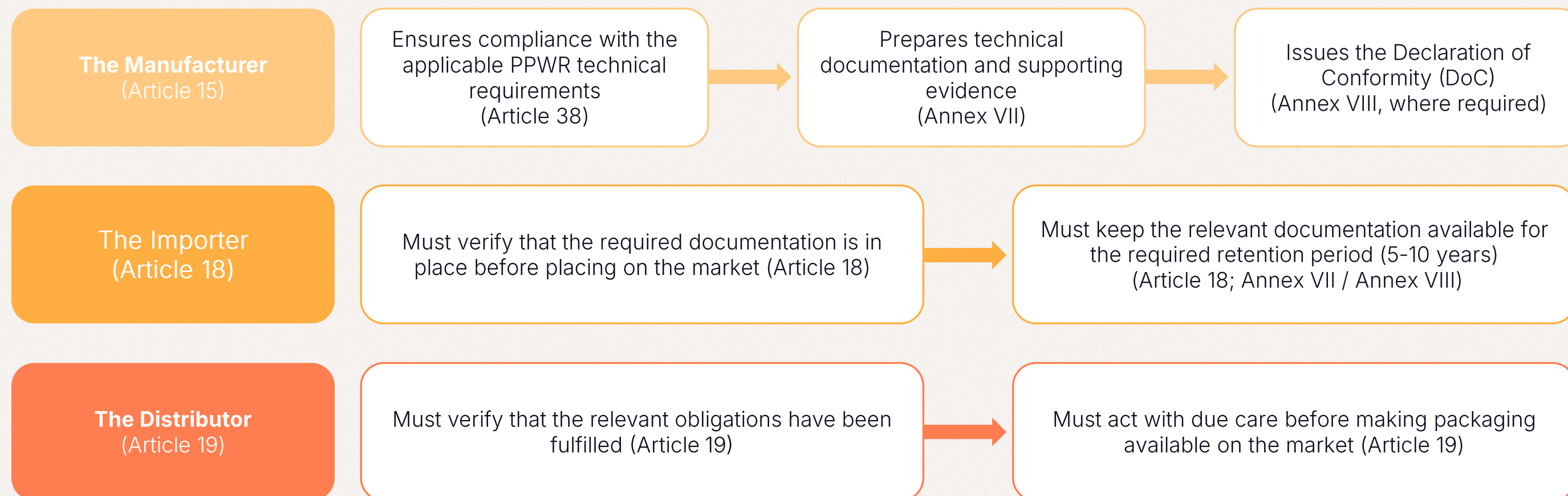
For immediate consumption elsewhere. Filled at attended points of sale with beverages or ready-prepared food; no further preparation needed.

Packaging for Primary Production

For unprocessed farming products.

OPERATOR OBLIGATIONS: DEFINING THE LEGAL MANUFACTURER

Under PPWR, there is only one legal manufacturer in the supply chain. This may be an EU-based or non-EU entity placing packaging or packaged products on the market under its own name or trademark.



ARTICLE 5: REQUIREMENTS FOR SUBSTANCES IN PACKAGING

From **12 August 2026**, Article 5(4) applies to all packaging and combines an existing heavy metals limit with a broader requirement to minimise Substances of Concern (SoC) in packaging materials and components.



SPECIFIC RESTRICTION

Heavy Metals

The sum of concentration levels of the following heavy metals must not exceed 100 mg/kg (0.01%):

- Lead,
- Cadmium,
- Mercury, and
- Hexavalent Chromium
- This threshold already existed under the previous Packaging Directive.
- Compliance must be documented in the technical file and supported by supplier information.

Reference: Article 5(4), Annex VII



GENERAL REQUIREMENT

SoC Minimisation

- Packaging must be manufactured so that substances of concern are minimised in packaging materials and packaging components.
- Manufacturers need sufficient data and supporting documentation to demonstrate compliance and prepare the declaration of conformity.
- This goes beyond the listed heavy metals restriction and requires broader substance visibility.

Reference: Article 5(4)

DEFINING 'SUBSTANCES OF CONCERN' (SOC) UNDER PPWR & ESPR

PPWR applies the ESPR definition of "Substances of Concern" (Article 2(27)) and introduces a strict obligation to minimize their presence and concentration in packaging materials and components.



~3,250 Entries

Harmonised CLP
Classifications

Part 3 of Annex VI of the CLP Regulation (1272/2008):

Toxicity and mutagenicity (Carc. 1A/1B, Muta. 1A/1B, Repr. 1A/1B, STOT RE/SE 1-2)

Endocrine disruption and sensitisation (ED HH 1/2, Skin Sens. 1, Resp. Sens. 1)

Environmental hazards and persistence (ED ENV 1/2, PBT/vPvB, PMT/vPvM, Aquatic Chronic 1-4, Ozone layer)



253 Entries

REACH SVHCs

REACH Regulation (1907/2006)

Substances of Very High Concern (SVHC) per the Candidate List.

Highlight: 253 entries as of February 2026.

Automatically classified as SoCs regardless of inclusion in the CLP hazard classes.



34 Entries

EU POPs

POPs Regulation (2019/1021)

Persistent Organic Pollutants.

Highlight: 34 entries currently regulated.

Subject to strict elimination and restriction of production / use.



The 'Open List'

Circularity Impediments

Negative Recycling Impacts

Substances that negatively affect the re-use and recycling of materials in the packaging in which they are present.

Highlight: To be explicitly defined in upcoming product-group specific Delegated Acts.

ARTICLE 5: REQUIREMENTS FOR SUBSTANCES IN FOOD CONTACT PACKAGING

Beyond the all-packaging requirements, Article 5 also introduces specific restrictions for food contact packaging.



FOOD CONTACT MATERIALS

BPA (Bisphenol A) Ban

Full ban on BPA in food contact materials.

- Separate act: Regulation (EU) 2024/3190.
- Some transitional arrangements apply for specific categories - reusable FCMs until July 2027, select categories until January 2028.

Applies: 20 July 2026

Reference: Regulation (EU) 2024/3190



TARGET LIMITS

PFAS Restrictions

- ≤ 25 ppb - any single PFAS (non-polymeric)
- ≤ 250 ppb - sum of targeted PFAS (non-polymeric + precursors)
- ≤ 50 ppm - total fluorine from PFAS (including polymeric)
- FAQ clarification: limits apply to intentionally added and unintentionally present PFAS.
- Definition note: PFAS is defined broadly, covering substances with at least one fully fluorinated methyl or methylene carbon atom, subject to specific structural exceptions.

Applies: 12 August 2026

Reference: Article 5(5)

ARTICLE 6: RECYCLABILITY — FROM DESIGN RULES TO MARKET ACCESS

Article 6 makes recyclability a mandatory market requirement and introduces a phased framework based on design for recycling, recycled at scale, and performance grades.

MARKET REQUIREMENT



What Article 6 requires

All packaging placed on the market shall be recyclable.

Packaging is recyclable only if it is:

- designed for material recycling; and
- when it becomes waste, separately collected, sorted and recycled at scale.



PHASED TIMELINE

Timeline

- From 1 January 2030: design for recycling requirement applies.
- From 1 January 2035: recycled-at-scale requirement applies.
- From 1 January 2038: packaging may be placed on the market only if it achieves grade A or B.



PERFORMANCE GRADES

Recyclability assessment

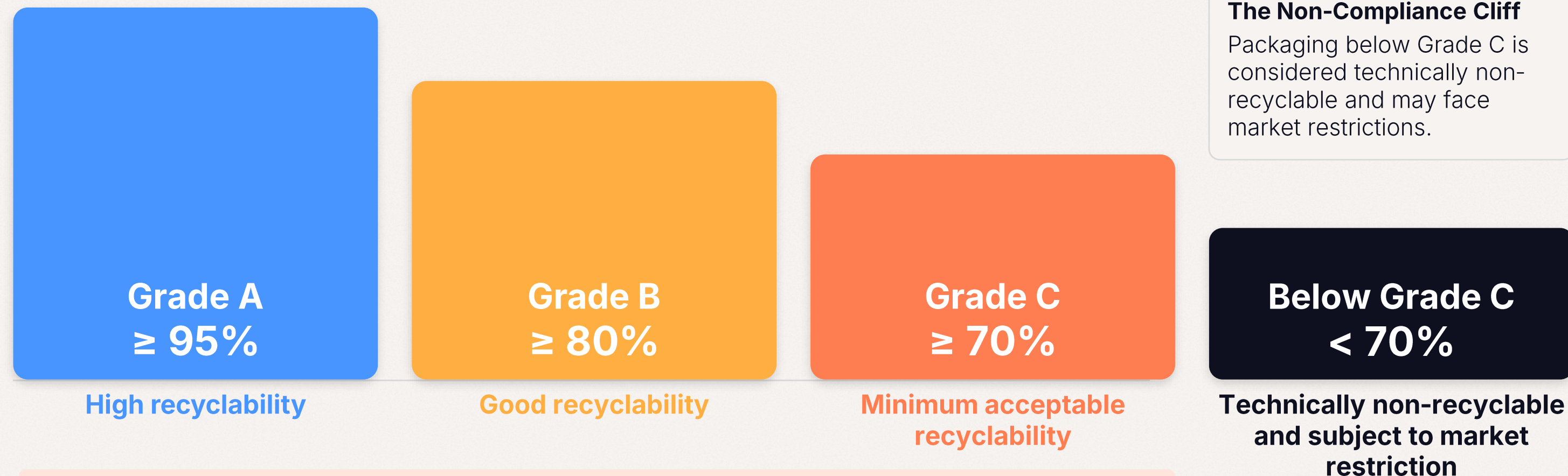
Recyclability is expressed in grades A, B or C.

Packaging below grade C is considered technically non-recyclable.

Detailed criteria will be set through delegated and implementing acts.

ARTICLE 6: WHY RECYCLABILITY GRADES MATTER

Recyclability grades determine market access and create a direct compliance obligation for manufacturers.



Compliance implication: recyclability performance must be evidenced in technical documentation, making packaging data a core regulatory capability.

ARTICLE 7: MINIMUM RECYCLED CONTENT IN PLASTIC PACKAGING

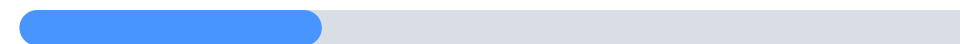
Key compliance conditions

- **Scope:** Minimum recycled-content targets apply to plastic packaging and are calculated per packaging type and format, as an average per manufacturing plant and year.
- **Main exceptions:** Medicinal immediate packaging, certain medical and diagnostic contact-sensitive packaging, compostable plastic packaging, dangerous-goods packaging, certain infant/special medical food packaging, and plastic parts below 5% of total packaging weight.
- **Compliance:** Requirements must be demonstrated in Annex VII technical documentation; calculation, verification and documentation format will be further specified by Commission implementing acts by 31 December 2026.

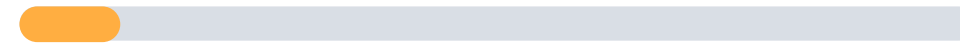
2030 Target Highlights

30%

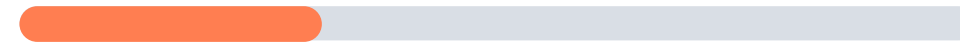
Contact-sensitive PET

**10%**

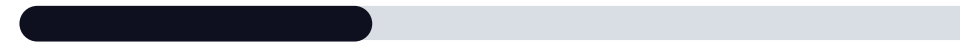
Contact-sensitive non-PET

**30%**

Single-use beverage bottles

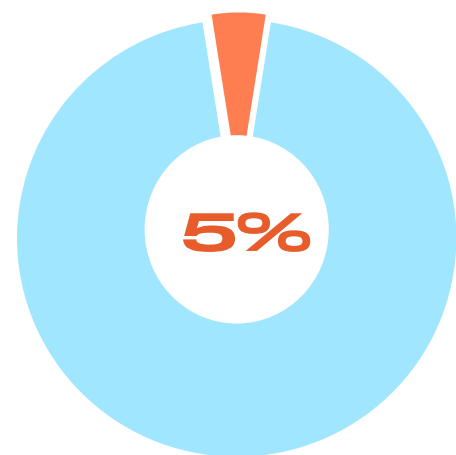
**35%**

Other plastic packaging

**2040 targets: 50% | 25% | 65% | 65%**

ARTICLE 7(1): THE HIDDEN 5% PLASTIC RULE

The 5% Rule Alert - Article 7(1)



- 95% Paper / fibre
- 5% Plastic coating/liner

≥ 5% plastic by weight

Classified as single-use plastic.

- Labels, varnishes, inks and adhesives are excluded.
- Subject to Annex V format restrictions and single-use plastic compliance obligations from 2030.

< 5% plastic by weight

Stays exempt from the single-use plastic bans.

The trap: Paper packaging that crosses the 5% threshold loses the moisture barrier exemptions previously permitted under the Single-Use Plastics Directive and faces Annex V market restrictions from 2030.

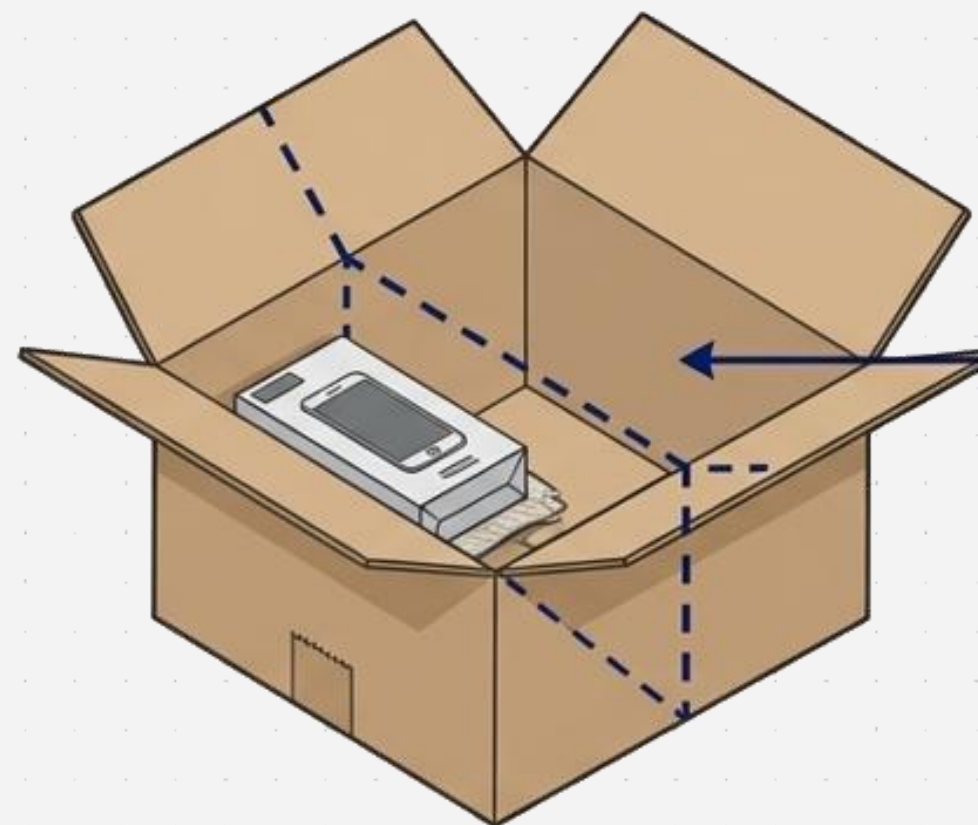
ARTICLE 10 & 24: PACKAGING MINIMIZATION

The regulation does not focus only on recyclability; it also requires packaging to be no larger and no heavier than necessary for its function.

Minimization Requirements

- From 1 January 2030, packaging must be reduced to the minimum necessary in weight and volume.
- For grouped, transport and e-commerce packaging, empty space may not exceed 50% of total volume.
- Double walls, false bottoms, unnecessary layers and void-fill materials are not accepted as justification for larger packs. Filling materials such as bubble wrap, paper cuttings and air cushions count as empty space.
- Compliance must be documented through a minimisation assessment and supporting technical documentation

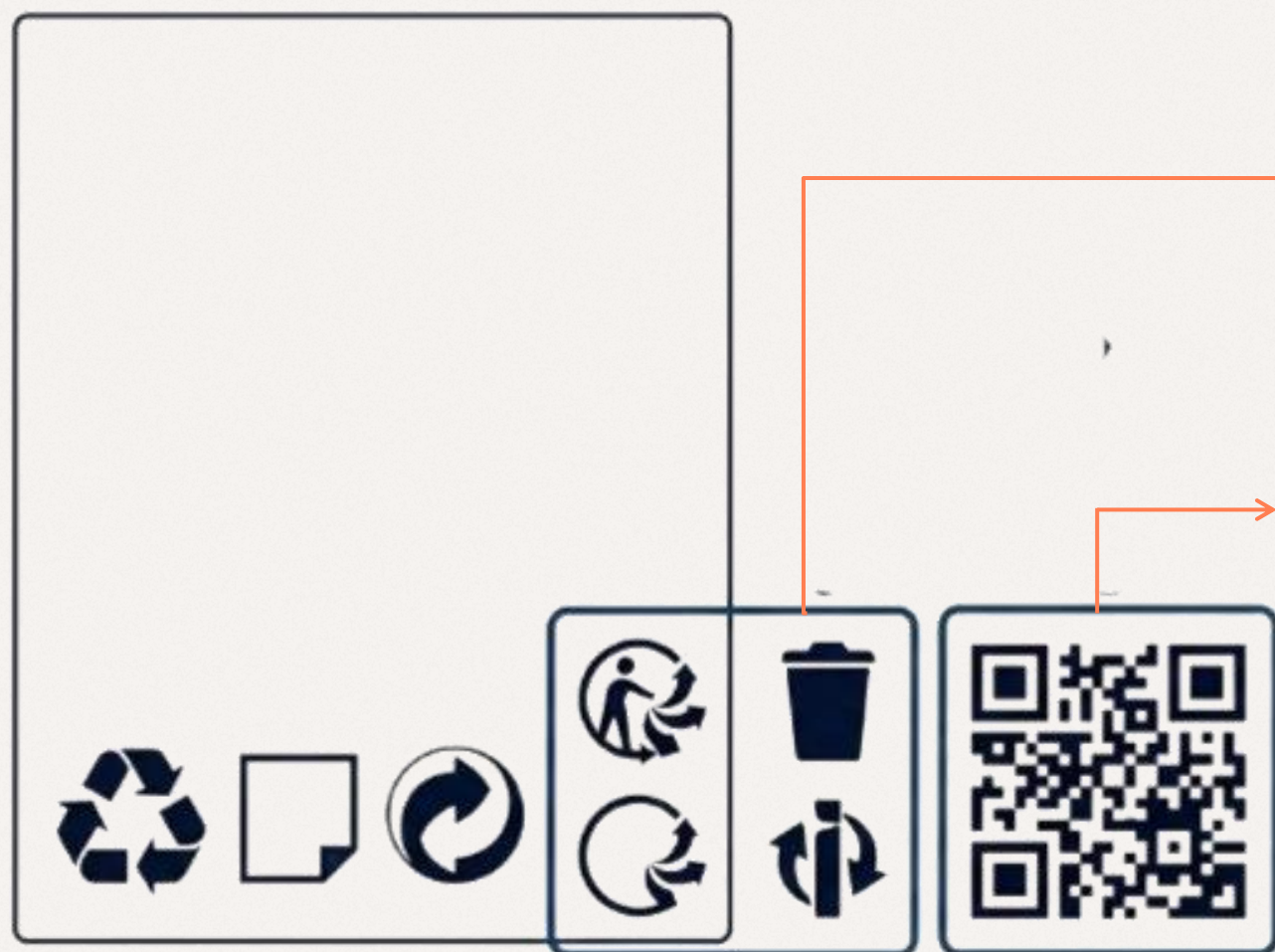
The 50% Void Space Rule



By 2030,
empty space
(void) cannot
exceed 50% of
total volume

ARTICLE 12: WHAT MUST BE ON THE PACKAGING

Article 12 requires two elements on every packaging unit: a harmonized sorting pictogram and a digital data carrier.



Harmonised Sorting Pictograms

- EU-wide symbol showing how to sort the packaging
- Replaces contradictory national recycling logos
- Applies to sales & e-commerce packaging
- Deadline: 12 August 2028

Digital Data Carrier (QR code)

- Mandatory QR code or equivalent
- Links to: material composition, SoC data, end-of-life instructions
- One QR code may also serve as a Digital Product Passport (ESPR)

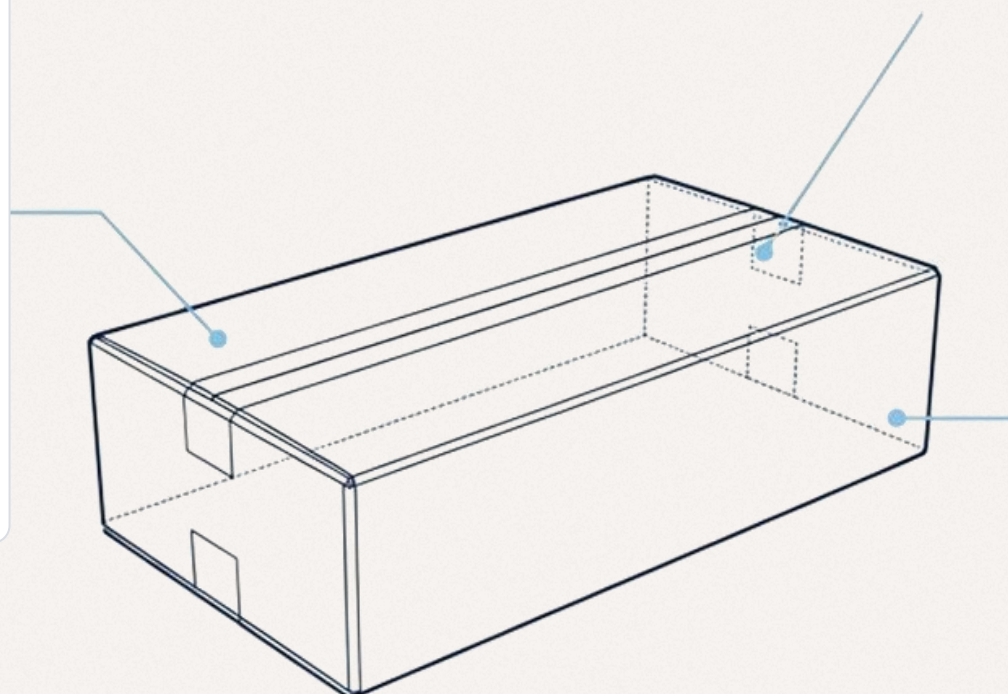
Not exhaustive

ARTICLE 12: LABELLING — EXEMPTIONS AND COMPLIANCE OBLIGATIONS

Transport and industrial B2B packaging is exempt from labelling — but exemption must be formally documented.

Who Is Exempt

- Transport & industrial B2B packaging: no sorting label required
- ⚠ E-commerce packaging: NOT exempt — deadline 12 August 2028
- Implementing act on pictogram format: Commission deadline 12 August 2026 — pending publication



What Exemption Requires

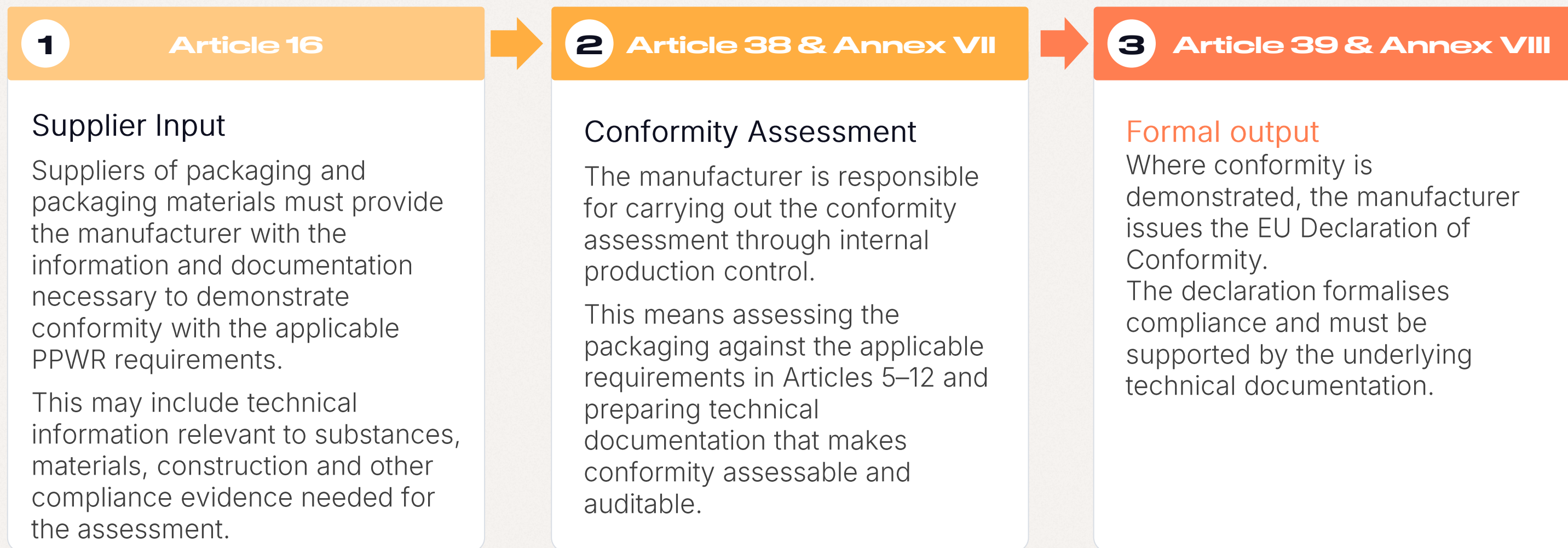
- Exemption basis must be documented in Annex VII technical file
- Packaging category must be formally assessed and recorded

From Label to Documentation

- Exempt packaging shifts compliance obligation to technical documentation.
- Annex VII documentation: required from 12 August 2026

THE CHAIN OF CUSTODY: PROVING CONFORMITY

Under the PPWR, conformity is built through a documented chain: suppliers provide the necessary input, the manufacturer performs the conformity assessment under Annex VII, and the process ends with the EU Declaration of Conformity under Annex VIII.



TECHNICAL FILE AND DECLARATION: WHAT PROVES COMPLIANCE

The declaration is only the visible outcome; the real compliance evidence sits in the technical file prepared under Annex VII and kept available for authorities.



Article 39 / Annex VIII

- **Technical file content:** The documentation should, where relevant, cover the packaging design, materials, manufacturing information, applied harmonised standards or other technical specifications, the qualitative description of assessments, and test reports.
- **Manufacturer responsibility:** The conformity assessment and the declaration are issued under the manufacturer's sole responsibility, even where information is provided by suppliers.
- **Identification and accessibility:** Manufacturers must ensure that the packaging bears a type, batch or serial number, or another element allowing identification, and must provide documentation to authorities upon request.
- **Retention and maintenance:** The technical documentation and DoC must be kept for 5 years for single-use packaging and 10 years for reusable packaging, and the assessment must be revisited where changes could affect conformity.

Not exhaustive

ARTICLE 44: EXTENDED PRODUCER RESPONSIBILITY

Article 44 PPWR shifts the financial and organisational responsibility for end-of-life packaging management to the producer — harmonizing obligations previously fragmented across 27 national EPR schemes.

EPR SCOPE



Who Is the Producer

- The producer is the manufacturer, importer or distributor who first makes packaged products available on the territory of a given EU Member State
- B2B and industrial packaging is in scope, not only consumer packaging
- One producer per packaging unit must be identified



PRODUCER OBLIGATIONS

Core Obligations

- Register in the national producer register of each EU Member State where packaging is placed on the market
- Report annually by 1 June: volumes by material type, recovery and recycling performance, consumer sorting information
- Finance waste collection, sorting and recycling costs proportionally



KEY DATES

Key Timeline

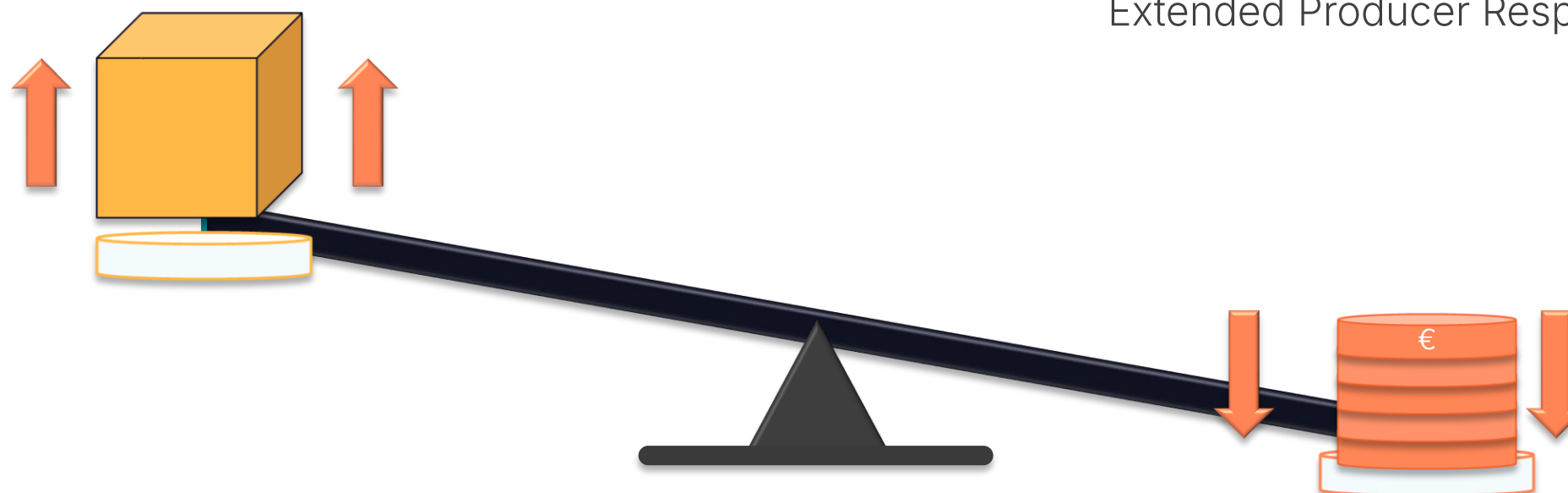
- National EPR laws under Directive 94/62/EC apply until 12 August 2027
- From 12 August 2026: PPWR EPR framework takes effect
- Commission implementing act on registration format (Article 44): not yet published as of June 2026 - under preparation

FINANCIAL IMPACTS: EPR ECO-MODULATION

Recyclability Grade (A, B, C) & Recycled Content Percentage

EPR Financial Contribution

Extended Producer Responsibility (EPR) Fees



The Insight

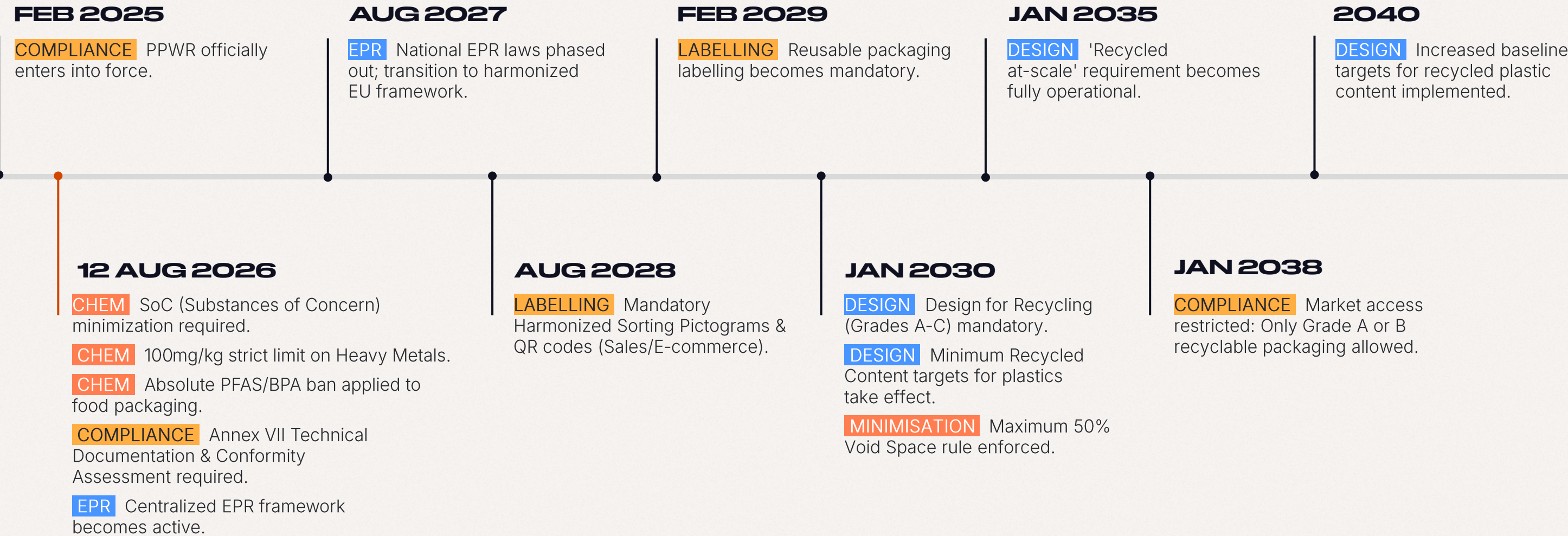
Better design equals lower financial burden.
Harmonised eco-modulation criteria to be established by delegated acts — replacing fragmented national fee structures.

Micro-Enterprise Note

Member States may invoke lower administrative fees for producers placing < 10 tonnes/year on the market.

PPWR COMPLIANCE TIMELINE: 2025-2040

PPWR introduces obligations in waves, not everything applies at once. Understanding which deadline applies to which requirement is critical for planning your compliance roadmap.



Not exhaustive

WHAT DATA DOES PPWR REQUIRE YOU TO COLLECT?

PPWR is not just a design regulation — it is a data obligation. Every requirement in Articles 5–12 translates into specific data points that must be collected, documented and retained.



Substance Data

Required for: Annex VII technical file, Declaration of Conformity

- Identity and concentration of all substances in packaging materials
- Heavy metals content per component
- PFAS content and BPA status (food contact packaging)



Packaging Design & Performance Data

Required for: Annex VII technical file, Declaration of Conformity

- Material composition per packaging layer (type, weight %)
- Recyclability grade (A / B / C)
- Recycled content % per packaging type per year
- Packaging weight and volume, including void space ratio)



Documentation & Identification Data

Required for: Annex VII technical file, Declaration of Conformity, market surveillance

- Unique identifier per packaging unit
- Technical file: design, materials, manufacturing, applied standards
- Retention period: 5 years (single-use) / 10 years (reusable)

BEFORE YOU CAN COMPLY, YOU NEED TO KNOW YOUR BUSINESS

Before you leave today, here are five questions to take back to your organization. If you cannot answer all five, that is your compliance gap.



Who are you in the supply chain?

Not just legally, also operationally.
Do you manufacture under your own brand? Do you import? Do you distribute?
One company can be all three simultaneously, and each role carries different obligations.



What packaging do you have and how much of it?

By format (boxes, grouped, transport), by material (plastic, paper, metal, glass), by volume, by market.
Most companies discover they don't have a clean answer to this question.



Where do you sell?

Which EU Member States, which channels (B2C, B2B, e-commerce). This determines your EPR registration footprint and labeling requirements.



How deep is your supply chain?

Do you know what your packaging is made of at material level?
Do your suppliers share substance data with you? If not, you cannot complete an Annex VII technical file.



Do you have a system of record?

Where does your substance data, material declarations, and compliance documentation live today? Spreadsheets, ERP, PLM, or nowhere?

DEMO EXAMPLE: NON-COMPLIANT PACKAGING

CDX

COMPLIANCE
DATA EXCHANGE
by DXC Technology

MDS ▾ Functions ▾ Administration ▾ Help ▾

Component Search

Ingredients

Supplier data

Recipient data

Analysis

MDS Request

+

-

✕

Filter

Common Regulations ▾

Packaging and Packaging Waste Regulation ▾

🔍

🔍

🔍

🔍

🔍

🔍

🔍

RESS Shipping Packaging

1x Waterproof wood pallet

10.0kg Waterproof Pallet Wood

92.0% wood

3.0% Lead, Isononanoate Naphthenate complexes e%

3.0% 2-Propenoic acid, polymer with 2-(ethyl((1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluorooctyl)sulfo

2.0% Diboron Tricadmium Hexaoxide e%

2.5kg UV Resistant PE Overwrap

100.0% Cobalt blue UV Overwrap

94.0% C.I. Pigment Blue 28

4.0% Cobalt-dichloride

2.0% Cobalt Dichromium Tetraoxide e

Details

Expand all

Collapse all

Common Information

Type

Component (own MDS)

ID / Version

219093453 / 1

Node ID

219093453

Node Count

12

MDS Supplier

CDX Service Team (US)

100% declaration

☐

SCIP Compliance

☐

External SCIP number

Brand

Type



IMPOSSIBLE. DELIVERED.