



ESPR, Digital Product Passports and PPWR for Cosmetics

Strategic implications, sustainability data, product transparency and packaging compliance for the cosmetics sector

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Version	2026 white paper edition
Scope	EU ESPR, Digital Product Passport, PPWR, Cosmetics Regulation and related sustainability obligations
Audience	Cosmetics manufacturers, brand owners, formulators, importers, responsible persons, packaging teams, sustainability leaders, regulatory affairs, quality, procurement, digital and board-level decision-makers

Core thesis

For cosmetics companies, ESPR, Digital Product Passports and PPWR will not replace the established Cosmetics Regulation. They will add a new sustainability, circularity, data and packaging layer to an already demanding product-safety framework. The strategic challenge is to connect formulation safety, responsible-person obligations, sustainability metrics, packaging evidence and digital product information into one governed operating model.

Legal note: This white paper is for strategic orientation and does not constitute legal advice. Company obligations depend on the applicable legal texts, delegated acts, product category, formulation, packaging, claims, market role, national enforcement practice and company-specific facts.



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1. Executive Summary

The EU cosmetics sector already operates under a mature product-safety framework. Regulation (EC) No 1223/2009 harmonises the rules for cosmetic products in the Union, aims to ensure a high level of human-health protection and includes obligations relating to responsible persons, safety assessment, product information files, notification, labelling and ingredient restrictions. [4]

The next regulatory wave adds a broader sustainability and transparency dimension. Regulation (EU) 2024/1781, the Ecodesign for Sustainable Products Regulation, establishes a framework for setting ecodesign requirements for sustainable products and provides the legal basis for future Digital Product Passports. The European Commission describes the Digital Product Passport as a digital identity card for products, components and materials that supports sustainability, circularity and legal compliance. [1][2]

In parallel, Regulation (EU) 2025/40 on packaging and packaging waste applies to packaging placed on the EU market and introduces lifecycle requirements for packaging design, waste prevention, recyclability, reuse, recycled content, labelling and technical documentation. For cosmetics companies, this affects primary, secondary, e-commerce, refill and transport packaging. [3]

Executive insight

The cosmetics industry will need to manage two compliance systems at once: a safety-led cosmetic

product framework and a sustainability-led product and packaging transparency framework. The most resilient companies will integrate both across formulation, claims, packaging, supplier governance and digital data systems.

2. Why Cosmetics Companies Should Prepare Now

Cosmetic products are consumer-facing, brand-sensitive and frequently innovation-driven. Formulations, packaging formats, claims and marketing launches can change quickly. This makes cosmetics particularly exposed to regulatory convergence: new packaging and product-data obligations must be absorbed without disrupting safety assessment, responsible-person approval, product notification, claims governance or launch timelines.

- Consumers and retailers increasingly expect transparent information on sustainability, packaging recyclability, refillability, responsible sourcing and product composition.
- Responsible Persons must continue to ensure cosmetic safety and compliance while sustainability teams build PCF, LCA, plastics, refill and circularity data.
- Packaging formats such as bottles, jars, tubes, pumps, caps, labels, cartons, e-commerce packs and refill systems will require PPWR evidence and supplier data.
- The Digital Product Passport model increases the importance of structured, role-based and validated product information across formulation, packaging and supply chains.
- Chemical sustainability is already visible through restrictions such as the EU microplastics restriction under REACH, which began applying on 17 October 2023. [6]

Strategic message

For cosmetics companies, regulatory readiness is not only about avoiding market-access disruption. It is also a route to stronger brand trust, more defensible sustainability claims, better supplier control and faster digital product disclosure.

3. Regulatory Architecture: Cosmetics Regulation, ESPR, DPP and PPWR

Regulatory pillar	What it changes	Relevance for cosmetics
Cosmetics Regulation	Regulation (EC) No 1223/2009 creates a harmonised EU framework for cosmetic product safety, responsible-person duties, product information files, notification and labelling. [4]	Remains the core market-access framework for cosmetic products and must be integrated with sustainability and digital disclosure requirements.
CPNP	The Cosmetic Products Notification Portal is a free online notification system for	CPNP remains a separate notification system and should not be confused with

	products placed on the EU market; information is made available to competent authorities and poison centres. [5]	future DPP publication or passport registry processes.
ESPR	Regulation (EU) 2024/1781 establishes the framework for future sustainable-product requirements and product-specific delegated acts. [1]	May influence cosmetic products or adjacent product categories through sustainability, information, durability, substance and circularity expectations.
Digital Product Passport	The DPP is intended to provide lifecycle product information in a standardised digital way and will be introduced progressively for selected product groups. [2]	Cosmetics companies should prepare data models for composition, safety, environmental performance, packaging, recycling and restricted-data access.
PPWR	Regulation (EU) 2025/40 introduces packaging lifecycle obligations across the EU market. [3]	Applies directly to cosmetic packaging, including primary, secondary, refill, e-commerce and transport packaging.
REACH microplastics restriction	Commission Regulation (EU) 2023/2055 restricts synthetic polymer microparticles intentionally added to products and began applying on 17 October 2023. [6]	Relevant to formulation governance, reformulation, supplier evidence, environmental claims and product safety documentation.

4. Cosmetics as Formulated Consumer Products

Cosmetic products are complex formulated consumer products. A single stock-keeping unit may combine a formulation, fragrance, colour system, UV filter, preservative system, packaging format, dispensing mechanism, label, claims package, e-commerce presentation and national-language requirements. This makes regulatory readiness more complex than for a simple article or bulk chemical product.

Characteristic	Why it matters	Readiness implication
Formulation sensitivity	Ingredient substitutions can affect safety assessment, stability, preservative efficacy, claims and consumer performance.	Integrate sustainability and microplastics screening into formulation stage gates.
Claims intensity	Cosmetics frequently use natural, clean, vegan, refillable, recyclable, recycled-content, carbon and responsible-sourcing claims.	Create evidence standards for all sustainability and regulatory claims.
Packaging diversity	Tubes, jars, pumps, aerosols, sachets, cartons, refills and e-commerce packs have different recyclability and material profiles.	Build packaging-family PPWR technical files and design-for-recycling scorecards.
Responsible Person model	The EU Responsible Person remains	Ensure DPP and PPWR workflows align

	accountable for placed-on-market compliance.	with Responsible Person approval and PIF governance.
Digital disclosure tension	DPP-style transparency can conflict with confidential formulation and fragrance information.	Define public, customer, authority and confidential access layers.

5. Digital Product Passport Readiness for Cosmetics

The DPP should be treated as a product-data architecture and governance model, not merely as a QR code. For cosmetics, future passport-style information may need to connect formulation, safety, packaging, sustainability, supply-chain and regulatory data without exposing confidential information beyond appropriate access levels.

Data domain	Illustrative cosmetic data	Source systems	Governance question
Product identity	Product name, SKU, variant, language, market, Responsible Person, launch date	ERP, PLM, PIM, artwork systems	Who owns product master-data quality?
Cosmetic compliance	PIF status, CPSR status, CPNP reference, labelling approval, nanomaterial status	Regulatory systems, PIF repository, CPNP process	How are DPP disclosures aligned with approved compliance documentation?
Ingredient and chemical data	INCI, restricted substances, allergens, microplastics assessment, supplier declarations	Formula systems, SDS/raw material databases, supplier portals	Which details are public and which remain confidential?
Sustainability	PCF, LCA, water use, renewable content, sourcing certifications, biodegradability evidence	LCA tools, ESG systems, supplier data	How are claims substantiated and updated?
Packaging	Material composition, recyclability, recycled content, refillability, sorting information	Packaging BOM, supplier declarations, artwork	How does packaging evidence feed both PPWR and customer sustainability data?
End-of-life	Sorting instructions, refill instructions, disposal guidance and recycling stream compatibility	Packaging, marketing, waste-management guidance	How are country-specific instructions managed?

Board takeaway

The strategic DPP question is not whether to add a QR code to packaging. The strategic question is whether the company can create controlled, validated, auditable and access-managed product information at scale.

6. PPWR Implications for Cosmetic Packaging

Cosmetics packaging is highly diverse and brand-critical. PPWR implementation will require companies to balance premium design, product protection, consumer experience, hygiene, refillability, recyclability, recycled content and documentation. Packaging that supports brand differentiation must also demonstrate compliance evidence.

Packaging family	Examples	Primary PPWR assessment focus
Primary rigid packaging	Bottles, jars, pots, compacts, deodorant packs	Material choice, recyclability, recycled content, design minimisation
Dispensing systems	Pumps, sprayers, droppers, airless systems, caps	Material complexity, separability, recyclability, supplier evidence
Flexible packaging	Sachets, pouches, refill packs, sample packs	Recyclability, multilayer structures, waste prevention and refill claims
Secondary packaging	Cartons, inserts, sleeves, gift boxes	Packaging minimisation, recycled content, paper/carton recyclability, claim evidence
E-commerce packaging	Mailers, cushioning, transport cartons, protective wrap	Empty-space reduction, reuse/recycling, logistics damage prevention
Refill and reuse systems	Refill pouches, refill stations, reusable jars, return systems	Hygiene, durability, traceability, consumer instructions and lifecycle benefit evidence

7. Sustainability, Chemical and Claims Risk Areas

Microplastics and polymer ingredients

The EU restriction on intentionally added synthetic polymer microparticles under Commission Regulation (EU) 2023/2055 creates formulation, supplier-data and reformulation risk. Cosmetics companies should map potentially in-scope polymers, derogations, transition periods, labelling and reporting obligations. [6] [7]

Green claims and substantiation

Claims such as sustainable, recyclable, refillable, biodegradable, plastic-free, microplastic-free, low-carbon or natural require defensible evidence and governance. DPP-style disclosure increases the risk of inconsistency between marketing, PIF data, supplier declarations and packaging files.

Packaging complexity

Premium cosmetic packaging often combines mixed materials, metallisation, pumps, mirrors, adhesives, labels and coatings. These design features can create recyclability and separation challenges.

Confidential formulation information

Cosmetics companies must prepare transparency models that inform consumers, customers and authorities without disclosing trade secrets beyond what is legally required.

Global brand consistency

Global product launches must reconcile EU-specific DPP, PPWR and cosmetics obligations with other regional cosmetics, packaging and sustainability regimes.

8. Integrated Data and Governance Model

A successful operating model should connect Responsible Person governance, formula approval, PIF maintenance, CPNP notification, packaging development, sustainability analytics, supplier evidence and digital disclosure. This requires clear data ownership and controlled change management.

Function	Typical responsibility	Data contribution	Governance role
Regulatory affairs / Responsible Person	Regulation 1223/2009 compliance, CPSR/PIF, CPNP, label review	Compliance status, product safety, notification and approved claims boundaries	Ensures DPP and PPWR disclosures do not undermine cosmetic compliance
R&D / formulation	Formula development, stability, efficacy and preservation	Formula attributes, ingredient alternatives, microplastics screening	Integrates sustainability into development stage gates
Packaging development	Pack design, materials, specifications and artwork support	Packaging BOM, recyclability, refillability, recycled content	Builds PPWR technical file inputs
Sustainability	PCF, LCA, circularity, ESG and claims methodology	Environmental metrics, sourcing evidence, dashboards	Defines claims standards and sustainability evidence hierarchy
Procurement	Supplier qualification and contract mechanisms	Supplier declarations, certifications, raw material and packaging evidence	Embeds data provision into supplier governance
IT / data	Systems, integration, DPP architecture and access control	APIs, data model, workflow and publication layers	Enables scalable passport and evidence management

9. Technical File and Evidence Architecture

Cosmetics companies should avoid creating separate evidence islands for product safety, sustainability, packaging and digital disclosure. A better approach is an integrated evidence architecture that keeps the legally required Product Information File intact while linking it to sustainability and packaging files.

Evidence area	Typical content	Owner
Cosmetic product file	PIF, CPSR, formula, specifications, stability, microbiology, packaging compatibility, claims support	Responsible Person / regulatory
Notification evidence	CPNP submission data, Article 13 records, nanomaterial module where relevant	Responsible Person / regulatory
Ingredient evidence	Supplier documentation, restricted substance screening, allergens, microplastics assessment, natural or bio-based evidence	R&D / regulatory / procurement
Sustainability file	PCF, LCA, sourcing certifications, water or biodiversity data, claim substantiation	Sustainability
Packaging technical file	Material specification, BOM, recyclability assessment, recycled content, minimisation rationale, supplier certificates, PPWR Declaration of Conformity	Packaging / regulatory
DPP publication layer	Public data, customer data, authority data and confidential-data mapping with approval workflow	DPP governance team

Best practice

Start with the top product families by EU sales and the highest-risk packaging formats. A practical pilot might include a shampoo bottle, a skincare jar, a refill pouch, a pump pack, a fragrance carton and an e-commerce packaging configuration.

10. Readiness Roadmap

Phase	Objective	Key activities	Outputs
1. Discover	Understand exposure and maturity	Product and packaging portfolio mapping, data-system inventory, supplier evidence review, claims scan	ESPR/DPP/PPWR cosmetics readiness heat map
2. Design	Define target operating model	DPP data model, governance roles, disclosure layers, PPWR file template, claims evidence standard	Target operating model and implementation roadmap

3. Build	Create data and evidence capabilities	Supplier templates, microplastics screening, packaging technical files, PCF/LCA method, DPP pilot architecture	Pilot evidence repository and product dashboard
4. Deploy	Scale across priority categories	Roll out to key brands, onboarding suppliers, packaging scorecards, product-data workflows	DPP-ready and PPWR-ready priority portfolio
5. Operate	Maintain continuous compliance	Change control, regulatory monitoring, claims review, supplier updates, periodic audits	Ongoing compliance assurance and board reporting

11. Board-Level Priorities

- Appoint executive sponsorship for an integrated ESPR, DPP and PPWR readiness program.
- Map product families, formulation risk areas, packaging families and data systems across the EU portfolio.
- Separate CPNP/PIF compliance workflows from future DPP publication workflows while ensuring data consistency.
- Build a DPP data architecture with public, customer, authority and confidential information layers.
- Create PPWR technical file templates for priority packaging families.
- Screen cosmetic formulations and raw materials for microplastics and other sustainability-relevant chemical risks.
- Define sustainability claim governance before scaling consumer-facing claims.
- Integrate supplier evidence obligations into procurement contracts and product-development stage gates.

12. Outlook and Conclusion

Cosmetics companies are entering a new phase of regulatory convergence. Product safety will remain the foundation of market access, but sustainability performance, circular packaging, ingredient transparency, digital information and credible evidence will increasingly shape market credibility and customer trust.

The companies that prepare earliest will be able to commercialise sustainability with greater confidence. They will know which claims can be supported, which packaging formats require redesign, which ingredients create transition risks, which suppliers can provide reliable evidence and which systems can support future digital product information.

Final message

The future cosmetics compliance model will be built on safety, transparency, circularity and evidence. Companies that connect these disciplines now will be better positioned for future regulation, retailer requirements and consumer expectations.

References

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