



The EU Digital Product Passport: What your business needs to know

- Essential information for the DPP
- Key dates for implementation
- Next steps you need to take

product
intelligence

Table of contents

About our contributors	2
Chapter 1: What is the EU Digital Product Passport?.....	3
Chapter 2: What information is included in the DPP?	5
Chapter 3: Digital Product Passport formats	8
Chapter 4: Key sectors requiring DPPs	9
Chapter 5: How has industry addressed DPPs so far?.....	13
Chapter 6: Timeline of key dates	14
Chapter 7: Importance of the DPP	16
Chapter 8: Implications of non-compliance	18
Chapter 9: Step-by-step guide to prepare your business for compliance	19
Chapter 10: Ensure DPP compliance with Enhesa's targeted solutions.....	21
Links to useful references	23

Introduction

It's a stark forecast that in terms of consumption, we will need the equivalent of three Earths to fulfil the demand of resources by the year 2050. This shows the urgency to adopt sustainable practices and rethink – even revolutionize – the way we create and use products in every part of society. Finite resources cannot, by definition, last and so the EU is changing the traditional resource-draining, 'take-make-dispose' model, in favor of promoting the longevity of manufactured goods. The EU is ushering in a new era of sustainability and transparency, spearheaded with the introduction of the Digital Product Passport (DPP).

The EU's Ecodesign for Sustainable Products Regulations (ESPR) serves as a framework law that enables the EU to develop detailed requirements for specific product groups or categories with shared characteristics. This process began with a prioritization exercise to identify which products should be regulated first. In April 2025, the Commission adopted the first ESPR and Energy Labelling Working Plan, which outlines the initial set of product groups to be addressed under the new rules – including Digital Product Passport (DPP) obligations – through a process involving stakeholder engagement, impact assessments, and consultations within the Ecodesign Forum.

The key requirements for the DPP are laid out in the ESPR, which encompasses performance and information requirements, both of which are integral to the DPP. Together with the Energy Labelling Framework Regulation (ELFR) it facilitates consumer choice and encourages the take-up of more sustainable and energy-efficient products.

The DPP provides a way to make sure a product's component parts are identified so they can be reused while the transparency drives product manufacturers to promote sustainable materials.

Compliance professionals for a range of manufacturers need to understand that the DPP is an important requirement in the EU. In this informative eBook by Enhesa Product Intelligence, you'll learn everything you need to know about the DPP, including which sectors it affects first, its significance, key dates, the implications of non-compliance and more.

About our expert contributors

Kimberley de Miguel | Managing Analyst, Europe, Middle East and Africa, Enhesa Product Intelligence

Kimberley De Miguel joined Enhesa Product in June 2023 as the Managing Analyst for the Europe, Middle East and Africa (EMEA) regions. Kimberley holds a BEng in Materials Science and Engineering and an MSc in Sustainability and Environmental Management, and specializes in regulatory and product compliance and value chain transparency.



The crucial part of Kimberley's role is to extract the most critical aspects of upcoming regulations and utilize her understanding of the industry's day-to-day challenges to find the best solutions.

Stacey Bowers | Global Product Compliance Manager, Enhesa Product Intelligence

Stacey Bowers, MILS, is a Global Product Compliance Manager within Enhesa Product Intelligence's Expert Services Team. Stacey has expertise in a wide range of specialist subjects including product compliance requirements, products in scope, chemicals, waste, packaging, electrical and electronic equipment (EEE), cosmetics, medical devices and textiles. Stacey has been part of Enhesa since November 2023, but within the wider global product compliance industry for over 20 years, at companies such as Compliance & Risks and Bureau Veritas.



A librarian by training, she has a Master's Degree in Information and Library Science and considerable experience delivering bespoke research and analysis to the world's biggest companies. Stacey has been at the helm when launching our compliance products geared towards a wide range of sectors, such as the Global Battery Compliance Tool which breaks down regulatory requirements for batteries, covering design, restricted substances, labeling, extended producer responsibility (EPR), and more. Our range of comparison tools help companies find synergies and inform their strategies.

1. What is the EU Digital Product Passport?



The EU Digital Product Passport is a record containing a unique product identifier, compliance documentation and information on substances of concern within the product, providing safety instructions and guidance on product disposal. DPPs are key to improving supply chain management and to ensure regulatory compliance, so companies can mitigate risks related to authenticity and environmental impact. It enables stakeholders across the supply chain including manufacturers, consumers and recyclers to make informed decisions while promoting sustainable practices.

The [working plan](#) is the first step in applying the broader scope of the ESPR to specific product groups, including those subject to DPP requirements. It seeks to balance environmental ambition with practical implementation, ensuring the regulation delivers meaningful impact without creating excessive administrative burdens – especially for SMEs. In line with this, the DPP will be accessible in digital form, such as via a quick response (QR) code, to streamline information sharing and support efficient compliance and decision-making across the supply chain.

The DPP is pivotal in enhancing product traceability, sustainability, and efficiency across various industries.



DPPs are key to improving supply chain management and to ensure regulatory compliance, so companies can mitigate risks related to authenticity and environmental impact.



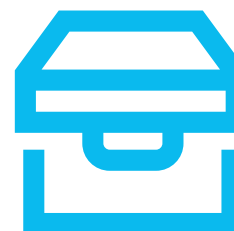
The content of a DPP varies depending on the product category and regulatory requirements. Ecodesign requirements are central to the ESPR and are established through European Commission delegated acts for specific product groups, unless horizontal rules apply across multiple categories. These requirements aim to improve product durability, reliability and circularity, while reducing environmental impacts across the lifecycle. Requirements may include both performance (eg recycled content thresholds or substance restrictions) and information obligations, such as those relating to the DPP and substances of concern. Social aspects may be considered in future but are currently addressed under the [Corporate Sustainability Due Diligence Directive \(EU\) 2024/1760](#).



2. What information is included in the DPP?



Generally, the DPP may include the following key information:



1. Product identification:

- unique identifiers, such as serial numbers or QR codes;
- product name, model and brand; and
- manufacturing date and location.



2. Material composition:

- details on raw materials and components;
- hazardous substances and compliance with chemical regulations like REACH; and
- recyclable and non-recyclable components.



Definitions information

Under the ESPR, substances of concern (SoCs) are broadly defined in Article 2(27) and fall into four categories:

- REACH-based (SVHCs on the Candidate List);
- CLP-based (substances with certain hazard classifications);
- POPs regulated under Regulation (EU) 2019/1021; and
- substances that hinder reuse or recycling (circularity-based), identified case-by-case by the Commission.

While SoCs form a core part of information requirements, exemptions are possible, and restrictions for circularity can also apply to substances outside this definition – meaning substance regulation under ESPR will be tailored to specific product groups.

3. Environmental impact:

- carbon footprint and energy consumption during production;
- information on the product's durability and lifecycle; and
- reparability and recyclability scores.



Definitions information

While the ESPR does not provide a formal definition of environmental sustainability, it frames the concept through 16 product aspects listed in Article 5 (1), which collectively define the scope of sustainability requirements. These aspects cover the entire lifecycle of a product, including durability, reparability, energy and resource efficiency, presence of SoCs, recyclability, and the expected generation of waste – effectively addressing “all aspects of circularity,” as highlighted in Recital 119.

4. Supply chain transparency:

- sources of raw materials and supply chain partners; and
- ethical considerations, including labor practices and conflict-free sourcing.

5. Maintenance and repair information:

- instructions for repair and maintenance;
- availability of spare parts and tools; and
- warranty details.

6. End of life Information:

- guidelines for recycling and disposal; and
- information on take-back schemes or reverse logistics.

7. Regulatory compliance:

- conformance with EU directives and standards, such as the Ecodesign Directive or Waste Electrical and Electronic Equipment (WEEE) Directive; and
- certifications and labels, such as CE marking or energy efficiency ratings.

The aim is to provide comprehensive, standardized information that is easily accessible and interpretable by all stakeholders in the product's value chain.



3. Digital Product Passport formats



The format of a Product Passport is typically digital and can be implemented through various technologies to ensure accessibility and interoperability.



QR codes or barcodes

A scannable code printed on the product or packaging that links to a digital platform containing the product's information.



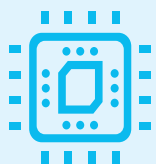
Blockchain technology

A decentralized ledger to securely store and track information about the product's lifecycle, ensuring data integrity and transparency.



Cloud-based platforms

Centralized or decentralized platforms accessible via the internet, where manufacturers, retailers and consumers can upload or retrieve product data.



Embedded chips or tags

RFID or NFC tags embedded in the product, enabling near-field communication for data access.

Regardless of the specific format, the DPP must be designed to ensure data security, user-friendliness and compatibility across different systems and devices. This interoperability is crucial for achieving the EU's vision of a seamless digital ecosystem.

4. Key sectors requiring DPPs



The initiative aims at many sectors and will roll out across a range of industries, starting with batteries.

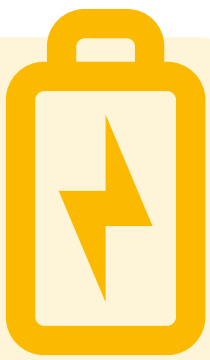
Requirements for batteries

The EU's 2023 [Batteries Regulation](#) repealed its 2006 Batteries Directive and established new requirements on sustainability, safety, labeling, marking and information to allow batteries to be placed on the market or put into service within the EU.

Importantly, the regulation established a requirement for batteries, such that they must be marked with a QR code which provides access to information including:

- general information on the manufacturer's identity and the battery's category and identification, place of manufacture, date of manufacture, weight, capacity and chemistry;
- the symbol for separate collection of batteries, also known as the crossed-out wheeled bin symbol;

- the chemical symbols for cadmium and lead, if those heavy metals are present above 0.002% cadmium or 0.004% lead;
- the EU declaration of conformity (DoC); and
- evidence of compliance with an EU-recognized due diligence scheme.



For starting, lighting and ignition (SLI) batteries, the passport must detail the amount of the following recovered from waste and present in active materials in the battery:

- cobalt;
- lead;
- lithium; and
- nickel.

For light means of transport (LMT) batteries, industrial batteries with a capacity greater than 2kWh, and electric vehicles batteries, the passport must include:

- the material composition of the battery and critical raw materials present;
- information on responsible sourcing;
- recycled content information;
- the share of renewable content;
- minimal, nominal and maximum voltage; and
- expected battery lifetime expressed in cycles.

The QR code must be printed or engraved visibly, legibly and indelibly on the battery. Where this is not possible or not warranted due to the nature and size of the battery, the QR code may be affixed to the packaging and to the documents accompanying the battery.

These marking requirements will take effect on 18 February 2027.

The Ecodesign for Sustainable Products Regulation

The Ecodesign for Sustainable Products Regulation (ESPR), which entered into force on 18 July 2024, is intended to improve the circularity, energy performance, recyclability and durability of products in the EU, with a focus on products with a significant environmental impact.

The Commission’s working plan 2025-30 for the ESPR and Energy Labelling listed the following four final “priority products” and indicative timelines for adoption:

 Textiles/ Apparel	EUR 78 billion (out of EUR 142 billion of all textiles and footwear in market size, 2019)	High potential to improve product lifetime extension, material efficiency and to reduce impacts on water, waste generation, climate change and energy consumption. Information requirements under the ESPR will work in synergy with the Textile Labelling Regulation currently under review.	2027
 Furniture	EUR 140 billion (2021)	High potential to improve aspects of resource use, with impacts of production and supply of materials often being the main contributor across different environmental impact categories (e.g. climate change, acidification, eutrophication), and waste generation. Positive impact on other categories such as air, soil and biodiversity.	2028
 Tyres	EUR 45 billion (2021)	Though already regulated by other pieces of EU legislation (including the Tyre Labelling Regulation (EU) 2020/740), potential to improve recyclability and recycled content and to mitigate risks related to waste management of end-of-life tyres.	2027
 Mattresses	EUR 10 billion (2022)	High potential to improve waste generation, lifetime extension and material efficiency.	2029



In addition, energy-related products, including those already regulated under the 2009 Ecodesign Directive, will be regulated under the ESPR in the future.

To this end, the working plan covers 35 products, setting a transition period until 31 December 2026, under which the measures continue to be covered by the Ecodesign Directive, while carrying forward and including 16 EEE products under the ESPR, including:

- household dishwashers – 2026;
- household washing machines and washer-dryers – 2026;
- low-temperature emitters – 2026;
- displays – 2027;
- EV chargers – 2028;
- electric motors and variable-speed drives – 2028;
- refrigerating appliances (including household fridges and freezers) – 2028;
- light sources (only for Ecodesign) and separate control gears – 2029;
- mobile phones and tablets – end 2030;
- tumble dryers – end 2030; and
- standby and off mode consumption – end 2030.

The Commission, in consultation with stakeholders, has initiated the standardization process to set rules on data carriers, infrastructure and data interoperability, which are needed to enable the product passport system to develop.



5. How has industry addressed DPPs so far?



Several initiatives are actively developing DPP frameworks tailored to their respective sectors.



CIRPASS (Circular Product Passport) is a collaborative project involving multiple stakeholders aiming to establish cross-sectoral DPP prototypes. It focuses on creating standardized frameworks for product information exchange to support a circular economy. The project has developed roadmaps for DPP implementation across sectors such as batteries, electronics and textiles, promoting transparency and sustainability throughout product lifecycles.



Battery Pass was launched by an industry-led consortium, seeking to advance the implementation of the EU Battery Passport. This project aims to provide detailed information on battery composition, manufacturing processes and end of life management, thereby enhancing sustainability and regulatory compliance within the battery industry.



Catena-X is a German consortium comprising automotive companies, suppliers and technology providers, developing a DPP framework specifically for the automotive industry. With over 60 partners, Catena-X facilitates secure and reliable data sharing across the automotive value chain, encompassing vehicle components' lifecycle from production to end of life.



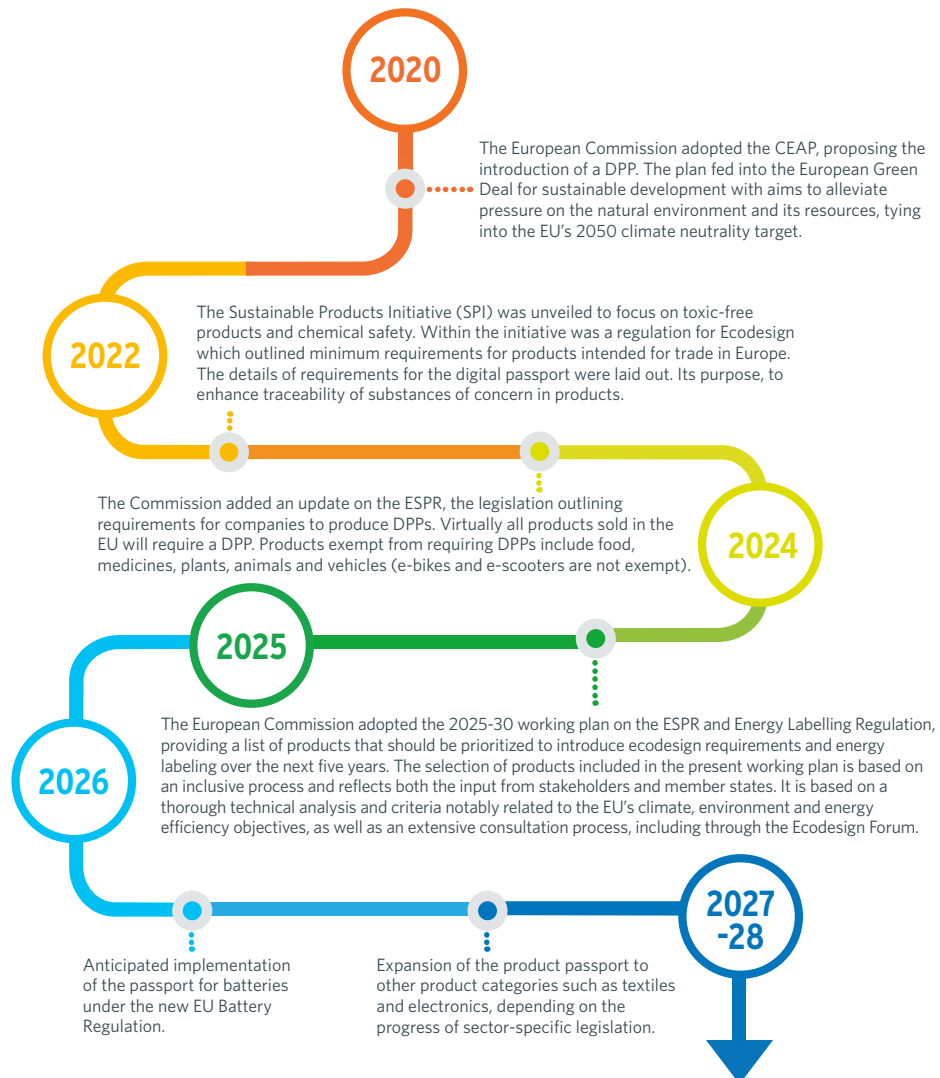
Manufacturing-X initiative aims to establish an open data ecosystem across various industries. It focuses on creating data spaces that enhance transparency, efficiency and sustainability in manufacturing processes, supporting data sovereignty and interoperability among stakeholders.



Chem-X is an initiative within the Manufacturing-X framework, concentrating on the chemical industry. It aims to develop data ecosystems that improve transparency and efficiency in chemical manufacturing processes, aligning with the overarching goals of Manufacturing-X.



6. Timeline of key dates



Virtually all products sold in the EU will require a DPP. Products exempt from requiring DPPs include food, medicines, plants, animals and vehicles.



7. Importance of the DPP



Promotes transparency

The passport provides detailed product information, empowering consumers and businesses to make environmentally responsible choices. This passport can be a tool for decision makers as information is easily shared to interested parties.

Supports circularity

It was realized that less than 10% of materials used around the world were fed back into the materials cycle. By offering insights into repairability and recyclability, the passport fosters reuse, remanufacturing and recycling, reducing the overall environmental footprint. The DPP becomes a driver for cutting back on pollution, waste and environmental destruction, and will mean products become more durable and easier to reuse, recycle and repair.

Enhances compliance

The passport ensures alignment with EU environmental goals and regulatory requirements, helping businesses avoid penalties. As a tool, the DPP makes it clear what's required for product standards.

Boosts market competitiveness

Companies adopting sustainable practices early can gain a competitive edge by appealing to eco-conscious consumers and securing access to the EU market. The act of greenwashing (where false claims of sustainability are made) will be harder, which in turn makes those with DPPs able to prove the legitimacy of their 'green' product claims.

Creates trackable supply chain

Offers a means to share product data across the whole supply chain, becoming the digital twin of a physical product. Important information such as materials sourced, manufacturing process and recyclability will be easy to check.



It was realized that less than 10% of materials used around the world were fed back into the materials cycle. By offering insights into repairability and recyclability, the passport fosters reuse, remanufacturing and recycling, reducing the overall environmental footprint.

8. Implications of non-compliance



Non-compliance with the EU Digital Product Passport requirements can have significant consequences for businesses.

Market access restrictions

Products without a compliant passport may be barred from the EU market. The EU is serious about ensuring only compliant products circulate within its jurisdiction. Non-compliance could result in outright bans, leading to loss of access to one of the world's largest consumer markets.

Reputational damage

Failure to meet sustainability standards could harm brand reputation and consumer trust. Today's consumers are increasingly eco-conscious and prefer brands that align with their values. Non-compliance could lead to negative publicity, damaging a company's image and impacting customer loyalty.

Financial penalties

Companies may face fines and legal actions for non-compliance. The EU has a history of imposing substantial penalties on businesses that violate regulations, which can strain financial resources and erode profitability.

Supply chain disruption

Incomplete or inaccurate product data could impact collaborations with suppliers and partners required to adhere to EU standards. Non-compliance can disrupt relationships across the supply chain, leading to delays, increased costs and potential loss of business partnerships.

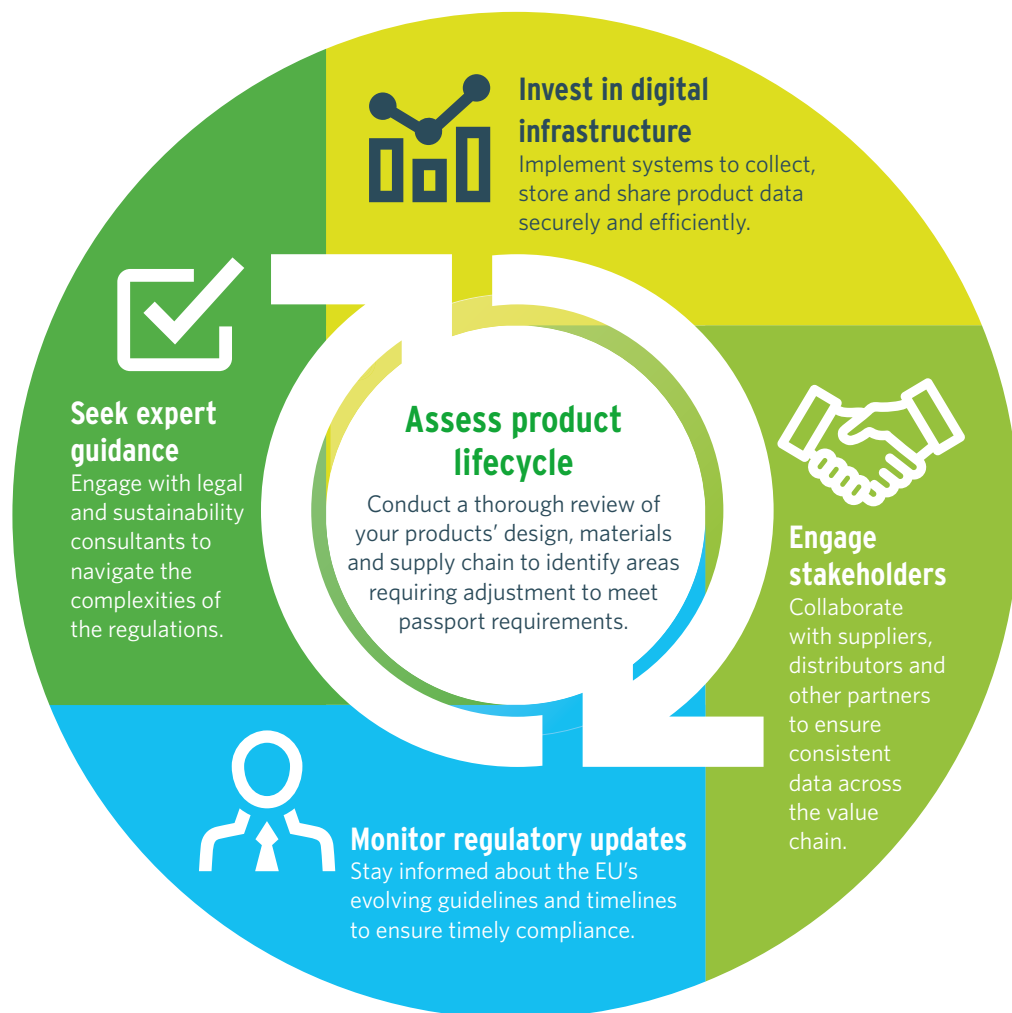
9. Step-by-step guide to prepare your business for compliance



Responsibility for the DPP is with whomever puts the product on the market. Manufacturers and EU importers of regulated products will have to ensure that a product passport in accordance with the applicable delegated act is available. The ESPR doesn't limit the definition of manufacturer to EU-based entities, and the Commission's impact assessment confirms that its requirements apply equally to both EU and non-EU companies. This means that non-EU manufacturers are expected to meet the same compliance obligations as their EU counterparts. A manufacturer may appoint an authorized representative established in the EU to act on their behalf for specific ESPR-related responsibilities.



Steps for implementing the DPP



10. Ensure DPP compliance with Enhesa's targeted solutions



Stay ahead of regulatory requirements and make safer, more sustainable choices with Enhesa's comprehensive solutions. As DPPs rely on up-to-date regulatory standards and sustainability best practices, Enhesa provides the intelligence you need to remain compliant. Whether you're navigating complex compliance obligations or aiming to future-proof your product strategy, Enhesa equips you with the insight to meet DPP requirements with confidence.

Product Intelligence | Enhesa

Our mix of data tools and expert advice gives you a clear view of the regulatory and business environment as well as forewarnings about planned changes.

The powerful suite of solutions includes:



[Chemical Watch News & Insight](#) – reports on the latest chemical regulatory information around the world;



[Regulatory Database](#) – reliable, always up-to-date regulatory intelligence;



[Expert Services](#) – a team of experts guiding clients through their specific regulatory needs;





Managed Services – highly tailored, bespoke support with list building and regulatory monitoring services;



Professional Development – learn regulations specific to your products, train your teams and attend key events; and



Focused Compliance Solution – combination of database tools and expert support in key themed areas for chemical and product compliance.

Consider complementing our solutions with **Enhesa Sustainable Chemistry**, which empowers you to choose and source safer chemicals for use, manufacture and design. The state-of-the-art, configurable solutions save you time, getting the information you need more efficiently. Services include:



Chemical Assess – on-demand hazard and list screening in one simple-to-search, intuitive tool;



Supply Chain Connect – identify hidden hazards in your supply chain by sourcing ingredient information from suppliers in one consistent format;



Chemical Research – search thousands of databases at once; and



Certification Services – designed to help meet customer expectations.

Act now

The EU Digital Product Passport represents a significant step toward a sustainable and transparent economy. While the requirements may seem challenging, they also present an opportunity for businesses to innovate, differentiate and align with the EU's sustainability goals. By acting now, companies can ensure compliance, minimize risks and position themselves as leaders in the transition to a greener future.

We have many solutions that can help and experts on hand who can guide you through aspects of eLabeling and explain digital carriers in and outside the EU. If you have any questions, please get in touch with us at Enhesa Product Intelligence.

Links to useful references

[EU's Digital Product Passport: Advancing transparency and sustainability](#)
[Sustainable consumption and production](#)
[How the EU wants to achieve a circular economy by 2050 | Topics | European Parliament](#)
[Digital Product Passport: The ticket to achieving a climate neutral circular economy?](#)
[Circular economy action plan – European Commission](#)
[Latest updates on Digital Product Passport in May 2024](#)
[EU Digital Product Passport: Requirements, benefits and implementation](#)
[Digital Product Passports are just around the corner | Deloitte UK](#)
[The EU Regulation on Batteries and Battery Waste](#)
[The Ecodesign for Sustainable Products Regulation \(ESPR\)](#)
[ESPR and Energy Labelling Working Plan 2025-30](#)
[JRC Publications Repository – Ecodesign for Sustainable Products Regulation: Study on new product priorities](#)
[Register of Commission expert groups and other similar entities](#)
[EU Parliament, Council of Ministers provisionally agree on Ecodesign Regulation](#)
[Ecodesign for Sustainable Products Regulation](#)
[REACH: The Ecodesign for Sustainable Products Regulation](#)
[Battery recycling worldwide – statistics and facts](#)
[80+ Sustainability Statistics for 2025: Ultimate List](#)
[Packaging and Packaging Waste Regulation | Enhesa](#)

Act today and prepare for tomorrow to create a more sustainable future with 360° intelligence for your operations, products, and chemicals management across the globe.



Discover how

you can benefit your organization's product stewardship, supporting your compliance needs and more, with Enhesa's specialist solutions.

enhesa.com/product-intelligence

Achieve **compliance**, manage **risk**, and drive **sustainability**.