GS1 Sweden

The Global Language of Business

EU Packaging and Packaging Waste Regulation

A Position Paper on the use of GS1 Standards and Services as a tool to help companies address regulation more efficiently

Background

In our interconnected world, transparency is crucial for organizations and an increasing demand for sustainability has created a need for accurate data throughout company operations. The European Union is further driving that need through policy development, new regulations, and directives. But compliance can be costly, and companies often struggle in adapting to new requirements in time.

The Need for End-to-End Transparency

End-to-end transparency has emerged as a strategic imperative for organizations worldwide. To meet the growing demand for transparency from trading partners, consumers, and investors, many companies are intensifying efforts to facilitate seamless and efficient information sharing across the supply chain.

Regulation has been one of the key drivers as stricter rules on sustainability reporting has created an urgent need for accurate and detailed data about company operations which, as a positive side effect, has helped companies foster the development of solutions to improve supply chain efficiency.

Achieving end-to-end transparency throughout the supply chain has however remained elusive. The lack of standardized data collection, processing, and sharing creates barriers for cooperation. As rules and regulation continues to stack up, companies are forced to reconsider how they operate.

Sustainability in the European Union

In an effort to overcome the challenges of climate change and environmental degradation, the European Union (EU) has launched a number of initiatives, spearheaded by the European Green Deal, to help transform the EU into a modern, resource-efficient, and competitive economy.

To support the ambitious targets of the European union, policy development, new regulations, and directives aimed at creating a more environmentally conscious and socially responsible corporate landscape within the EU, are being put into force.

Several of these, such as the Corporate Sustainability Reporting Directive (CSRD), the Corporate Sustainability Due Diligence Directive (CSDDD), the Regulation on Deforestation Free Products (EUDR), the Eco-design for Sustainable Products Regulation (ESPR), the Packaging and Packaging Waste Regulation (PPWR) and the Common Fisheries Policy (CFP) along with the EU fisheries Control Regulation, require detailed reporting based on access to high-quality data throughout the supply chain.

EU Packaging and Packaging Waste Regulation

The EU Packaging and Packaging Waste Regulation (PPWR) is a regulation aimed at helping the European Union transition to a circular economy by setting out rules for packaging throughout its lifecycle from creation to collection, treatment, and recycling.

The regulation aims to make the internal market in the European Union function more efficiently by standardizing rules across member states while at the same time helping prevent or reduce the negative impact of packaging and packaging waste on the environment and human health.

The regulation, which was adopted in 2022, applies to all packaging and packaging waste on the European Union market, and sets clear targets to help ensure packaging on the EU market is reusable or recyclable in an economically viable way by 2030.

EU Packaging and Packaging Waste Regulation

The EU Packaging and Packaging Waste regulation provides a number of requirements for companies placing Packaging and Packaging material on the market. Actors will be responsible for sharing information about material composition throughout the supply chain to ensure conformity and to report on information related to packaging waste management through a register managed by authorities in each member state.

Scope

Packaging as referred to in this regulation covers sales packaging, grouped packaging and transport packaging. With some minor exceptions all of these packaging types are required to meet the criteria discussed in the paper.

Sustainability requirements

To minimize the amount of packaging waste generated and to limit harmful substances used, the regulation sets out a number of requirements in regard to the design and material composition of packaging and packaging material made available on the European Union market:

- **Harmful substances:** The regulation aims to minimize harmful substances in packaging by, among other things, setting concentration limits for lead, cadmium, mercury, and hexavalent chromium
- **Recyclable design:** The regulation requires all packaging to be recyclable at scale, meaning, it is designed for recycling, it is effectively and efficiently collected and sorted into defined waste streams, and can be recycled so that the resulting materials are of sufficient quality
- **Recycled material:** The regulation sets out a minimum percentage of recycled material used in plastic packaging (recovered from post-consumer plastic waste)
- **Compostable material:** The regulation requires sticky labels attached to fruit and vegetables and very lightweight plastic carrier bags to be compostable
- **Packaging minimisation:** The regulation stipulates that all packaging shall be designed so that its weight and volume is reduced to the minimum necessary for ensuring its functionality

Manufacturers who create packaging under their own name or trademark, or has it designed and manufactured for their products, have to ensure the packaging they place on the market meet the sustainability requirements.

This means manufacturers have to assess the conformity and draw up a technical documentation (see the regulation's Annex VII) for each packaging type. The technical documentation must then be kept by the manufacturer for 10 years and shared with trading partners and authorities to ensure compliance.

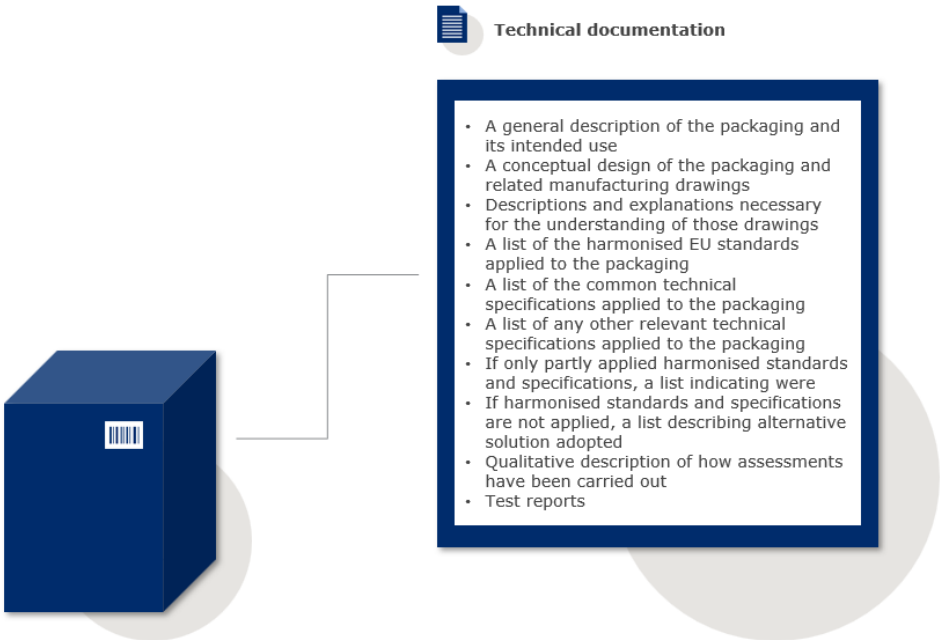

Illustration 1: Technical documentation required for packaging on the European Union market

Labelling, marking and information

The regulations also set out a number of requirements regarding the labelling and marking of packaging and packaging materials:

- **Material composition:** Packaging should have a label containing information about its material composition (does not apply to transport packaging)
- **Deposit and return system:** Packaging part of a deposit and return systems should have a special label
- **Reusability:** Reusable packaging should have a special label and a QR code or other type of digital data carrier linked to additional information
- **Recycled material:** Packaging made of recycled material or biobased plastic should have a special label
- **Visibility:** Labels and QR codes or other digital data carriers should be visible and readable

Manufacturers must also ensure that the packaging bears a type, batch or serial number or other element allowing its identification. The manufacturers name, trade name or trademark must be indicated on the packaging along with additional contact information.

In the case where European Union legislation requires more information on the packaged product to be provided via a data carrier, a single data carrier shall be used on the packaging. This to harmonize and make it easier for actors in the supply chain to capture the relevant information.

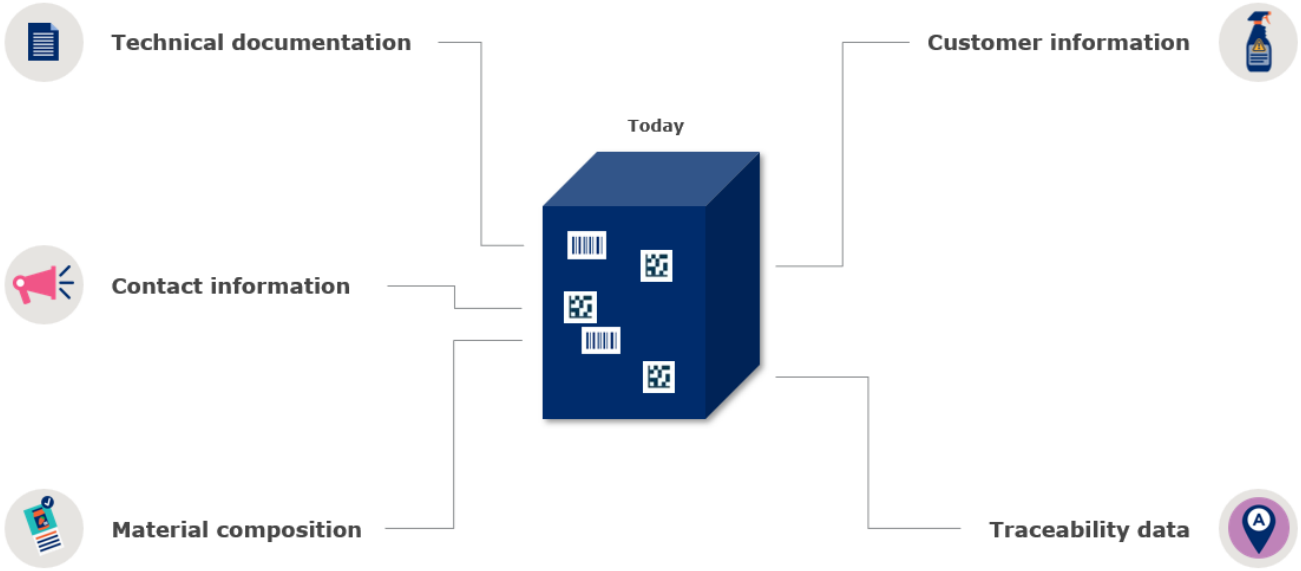

Illustration 2: Example of mandatory information and other potential data to include in data carriers on packaging

Producers, manufacturers, importers, and distributors

As previously defined, manufacturers are actors creating packaging under or their own name or trademark, or who have had packaging designed and manufactured for them. This would mean for example consumer goods company placing their products on the market or even retailers who are placing products on the market under their own private label.

Manufacturers are obliged to ensure their packaging are compliant with the regulation and that they have the technical documentation to prove it. Importers and distributors of packaging and packaged products are under the same obligations as manufacturers in the case where they place packaging on the market under their own name or trademark.

If simply acting as a trading partner, importers are required only to ensure that the packaging they have imported is compliant with the regulation and that the required documentation is available. They

do however also have to indicate on the packaging their contact information and keep a copy of the declaration of conformity for 10 years.

Distributors are in the same case only required to ensure that the producer is registered in the register of producers, that the packaging is labelled properly, and that the manufacturer or importer have complied with the requirements.

The term “producer” refers to any manufacturer, importer, or distributor who makes packaging available for the first time within a Member State’s territory under their own name or trademark.

Extended producer responsibilities and register of producers

The aim of the regulation is not only to ensure packaging is designed and labelled in a sustainable way, but also to help reduce packaging waste. Currently, obligations around handling packaging waste vary significantly among Member States. The regulation aims to harmonize this by setting clear obligations for all producers in the Union. With the regulation, producers fall under an extended producer responsibility. Requiring them to take responsibility for the entire life cycle of their products and packaging.

To achieve this, and to help the European Union reach its goals for reducing packaging waste, a producer register is set up by the relevant authority in every member state. In Sweden, this authority is Naturvårdsverket. In this register, producers who want to make packaging available on the market must provide the following information:

- Name, brand name, and contact information
- National identification code (including trade register number or equivalent) and tax ID number
- Quantities (by weight) of the types of packaging they make available on the market for the first
- A declaration outlining how the producer fulfils their responsibilities

Additionally, every year producers are obliged to submit:

- National identification code of the producer
- Quantities (by weight) per packaging types made available on the market for the first time
- Quantities (by weight) per material of packaging waste collected within the Member state
- Quantities (by weight) per material and type of packaging recycled, recovered, and disposed of within the Member state or shipped outside the European Union

The information will be stored in a packaging database to be set up by the relevant authority in each country. Through this the European Union hopes to be able to monitor actors involved in the production of packaging and packaging waste more efficiently.

Challenges in addressing the Regulation

Many companies grapple with understanding and adapting to new legislation, from accurately interpreting the requirements to establishing proper internal governance to address them. Companies sometimes also struggle with accessing the relevant data from across their supply chain as they can be large and complex. As regulation mounts, companies must work towards end-to-end transparency to be able to ensure compliance.

Achieving End-to-End-Transparency

The challenges companies are facing today range all the way from understanding how to interpret new legislation properly to how to set-up the appropriate internal governance and implement adjustments in technology systems within a given timeframe.

One of the most pressing issues will be to establish a way to efficiently gather and verify the required data across the supply chain. The global scale of modern supply chains means that large volumes of data add great complexity for companies unless a standardized approach is taken.

To be able to enable proper due diligence, companies must, to an extent, aim at achieving end-to-end transparency across the supply chain. To be able to do this, three key challenges would need to be addressed:

1: Digitalizing and Mapping the Supply Chain

Many companies working with products and commodities targeted by legislation are sourcing products directly or indirectly from a large number of smaller stakeholders, sometimes spread across the globe. Companies, who up until now has been able to rely on trading partners further up the supply chain for information, will now need first-hand access to accurate and up-to-date information on every producer across their supply chain network. This will require significant investments from companies to ensure access to proper technology, resources, and expertise.

2: Enabling Seamless and Secure Data Sharing

Given a supply chain where every actor is working in a way that enables transparency, the coordination and management of various stakeholders (each with different systems, objectives, and levels of visibility) will still prove challenging for any company that requires access to accurate and up-to-date data across the entire supply chain.

Legacy systems, lack of integration, and compatibility issues will manifest as barriers and complexities to the seamless sharing of data between these diverse systems. Additionally, many companies are often reluctant to implement data sharing-solutions that are dependent on third party-platforms due to concerns about data privacy and security.

3: Ensuring Verifiable and Up-To-Date Information

The information flow between stakeholders can be inconsistent due to varying policies, procedures, and technologies used. This means that companies risk using inaccurate information in due diligence statements. To be able to confidently trace products back to their origin and to be able to ensure that products and suppliers are compliant with new legislation will be a challenge and different approaches across the supply chain can lead to inefficiencies when trying to aggregate data.

How GS1 Standards and Services can help

Accessing relevant information packaging or supplier information that is required to be compliant with this new regulation might seem daunting. Various stakeholders will need to collect, process, and share substantial amounts of data from different enterprise systems and databases throughout the supply chain. By utilizing existing standards and services, companies can reduce complexity and streamline the process.

Identifying objects in the supply chain

In the Packaging and Packaging Waste Regulation, authorities can at any time ask producers to provide the required information about packaging and packaging material provided by suppliers, distributors or any other actors.

By requiring suppliers to identify themselves with unique identifiers like the **Global Location Number (GLN)**, actors can efficiently map out their supply chain and attribute information to the suppliers in a standardized way, ensuring it can be efficiently shared.

To ensure the connection between suppliers and their packaging, each packaging type can then be assigned a unique identifier such as the **Global Trade Item Number (GTIN)**, in which suppliers can store information about that packaging in a standardized way. The GTIN is for example able to hold all information required in the technical documentation.

Capturing data in the supply chain

Through the use of data carriers such as **barcodes and two-dimensional barcodes** actors can capture and share data efficiently throughout the supply chain. The traditional barcode could be encoded with a GTIN, which when scanned, can connect it to information in a database.

With the new regulation, actors must suddenly make available additional information such as contact information, material composition and technical documentation. Driven by customer demand many actors also see an opportunity to share additional information with their customers such as origin or user instructions.

Through the use of a two-dimensional barcode the challenges of storing all of this information in a simple way can be addressed. Through the use of one single two-dimensional barcode actors can allow for the storage and capture of multiple of the required data points.

Illustration 3: Example of how a GS1 2D Barcode can be used to simplify data capture

Sharing data across the supply chain

Once objects in the supply chain have been identified and data about them have been captured, a seamless exchange of information between actors must be enabled. A process which quickly becomes time consuming and ineffective unless a standardized approach is taken.

The **GS1 Registry Platform (GRP)** is a global registry of GTINs and GLNs that can be used to share small sets of **Master data** about products or locations between actors in the supply chain in a standardized way. By registering and making their GLN and GTINs searchable on GRP, suppliers can allow actors across the supply chain to verify authenticity and access information about them and their products.

The GRP also provides an opportunity to register links to **additional product- or location data** stored in the suppliers' own repositories.

This can allow for suppliers to share, for example, technical documentation for each of their different packaging types.

There is growing interest for making available master data using more recent GS1 standards such as the **GS1 Web Vocabulary** and the **Global Data Model (GDM)**. These two, combined with the GS1 Registry Platform's linking feature, offers a modern, flexible methodology by which master data about products and locations can be easily accessed in a scalable manner, no matter where that data is being authoritatively stored or kept.

Exchanging data can be addressed by alternative solutions as well. Companies who are already actively working with **Electronic Data Interchange (EDI)** and data repositories such as the **GS1 Global Data Synchronisation Network (GDSN)** can utilise those to efficiently share master data and **transactional data** as well (for example orders, delivery notes and invoices).

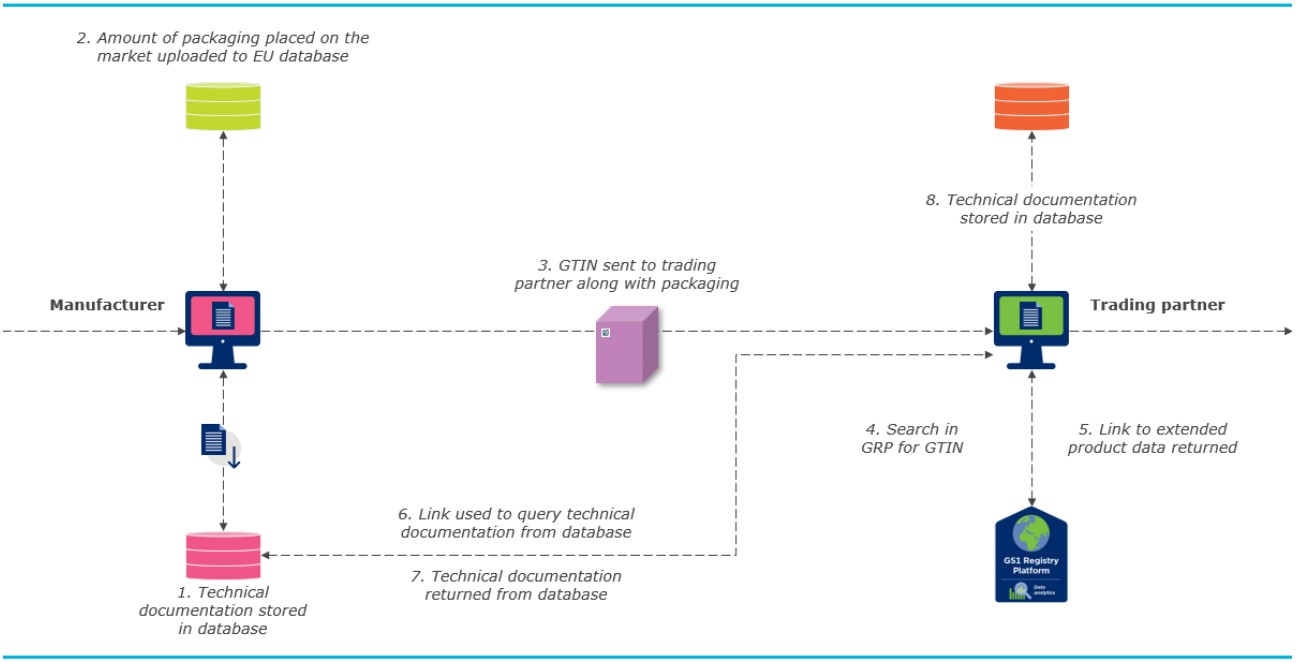

Illustration 4: Example of GS1 Standards and Services can be used to share data across the supply chain

Getting started with GS1 Standards and Services

In the context of addressing new regulations, companies can leverage GS1 Standards and Services to enhance supply chain transparency. Key steps include adopting standards-based product, location, and shipment identification, educating suppliers about standardized data models, and utilizing services like the GS1 Registry Platform.

First steps

To start working towards end-to-end transparency with GS1 standards and services there are a few steps companies can take:

1. Obtain a GS1 Company Prefix (GCP) license:

- Start by licensing a GS1 Company Prefix. This prefix allows you to utilize GS1 standards for identifying, labelling, and sharing data about products, locations, and packages.
- The GCP serves as the foundation for creating unique numbers that enable barcode generation.

2. Generate Identifiers:

- Once your company has licensed a GCP, you can begin assigning specific identifiers:
  - GLN (Global Location Number): Used to identify locations (such as warehouses, stores, or facilities).
  - GTIN (Global Trade Item Number): Used to identify products.
  - SSCC (Serial Shipping Container Code): Used to identify logistic units (e.g., pallets, cases).

3. Use Online Services from GS1 Member Organizations:

- Access easy-to-use online services such as MyProducts and MyPlaces (names of these services may vary between GS1 Member Organizations).
- These services allow you to create and manage identifiers efficiently and make the information available in the GS1 Registry Platform.

4. Promote Standardization:

- Ensure that all actors in your supply chain (including suppliers, manufacturers, and distributors) follow GS1 standards.
- Educate them about the benefits of standardized identifiers and a common data sharing standard.

5. Leverage GRP Services:

- When all supply chain actors adhere to GS1 standards:
  - Utilize the GS1 Registry Platform (GRP).
  - Make products and locations searchable and verifiable globally through web services.

Long-term vision

The data accessible through these solutions can guide your path towards regulatory compliance. However, to efficiently meet future demands, the capture and sharing of object data throughout the supply chain journey will become essential.

Standards like EPCIS enable capturing key data elements - such as who (GLN), where (GLN), when, what (GTIN + batch and quantity), and why (e.g., harvesting or shipping) - at critical supply chain points such as harvesting, batch mixing, ingredient production, packing, and shipping. Allowing companies to achieve end-to-end traceability without compromising existing systems or external solutions and lets data sharing remain technology-agnostic.

Getting started on the journey toward end-to-end traceability is, however, a longer process. GS1 TraceWay is a step-by-step approach to design and implement traceability systems where GS1 offers practical details about key aspects of traceability implementation, regardless of the drivers and technologies involved.

Further questions regarding the EU Packaging and Packaging Waste Regulation

For additional inquiries related to the EU Packaging and Packaging Waste Regulation (PPWR) we encourage reaching out to local GS1 member organizations and relevant authorities within each country. They can provide specific guidance and address any further questions.

Useful links:

The EU Packaging and Packaging Waste Regulation

Information from the European Commission on the Regulation

Information from GS1 Sweden on the Regulation

About GS1

GS1 is a global organization and GS1 Sweden is one of 118 national member organizations. We provide a common digital language for businesses through unique identification, proper labelling, and automatic data sharing for products, locations, and other physical objects. With the help of GS1, companies can improve efficiency, safety, sustainability, and traceability.

Contact information

Do you want to know more about GS1 in Sweden and how GS1 Standards and Services can help companies efficiently address PPWR? Don't hesitate to reach out:

Staffan Olsson,
Head of Public Affairs
GS1 Sweden
staffan.olsson@gs1.se

www.gs1.se