

● eBook

# Insights to Impact: Leveraging Raw Material Data for Effective Product Stewardship



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In today's world, [consumer consciousness](#) about their choices' environmental and social impact is higher than ever. Responsible consumerism revolves around making informed decisions regarding the products we purchase and use. It considers factors such as sustainability, ethical sourcing, and what happens to a product at the end of its life. By adopting responsible consumption habits and supporting brands committed to environmentally and socially responsible practices, consumers contribute to a more sustainable future.

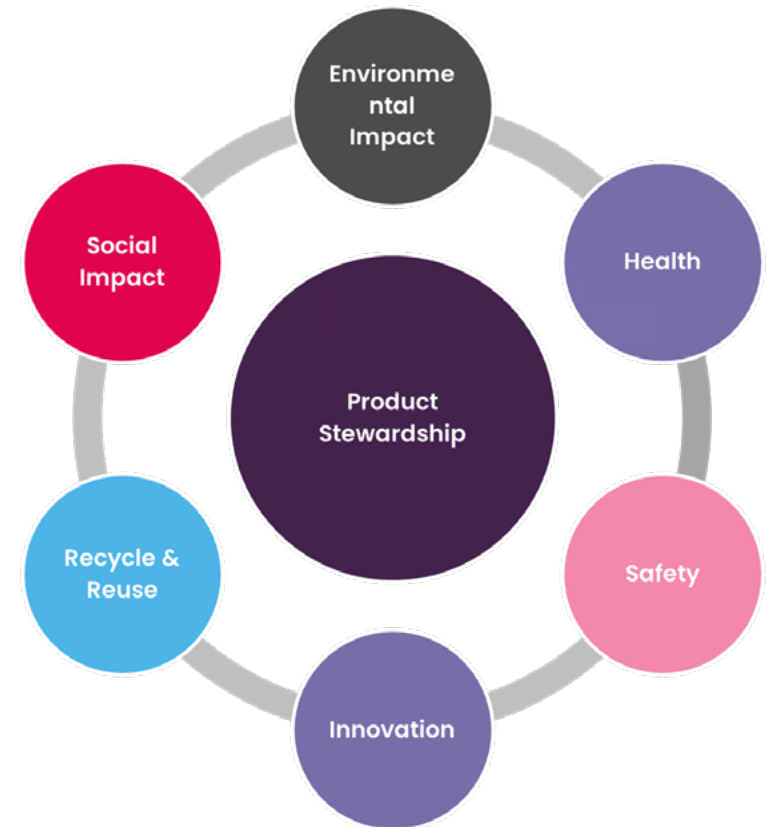


# Product Stewardship

[Product stewardship](#) is a product-centred strategy for managing the environmental, human health, and safety implications of products and the materials that they are made from throughout their life cycle. It is sometimes referred to as [extended product responsibility](#) since it requires the manufacturer, raw material supplier, distributor, end-users, and disposer to share responsibility for reducing the environmental impacts of products. Responsible product stewardship promotes reuse and recycling while minimizing toxic pollution and waste generation.

Product stewardship encompasses a comprehensive approach to managing products, from overseeing product inception and design to development, sourcing, manufacturing, distribution, and ultimate disposal or recycling.

Within this context, efficient and effective data management becomes a crucial factor. In data management, product stewardship parallels the concept of Data Governance, which embodies a systematic and wide-ranging strategy for overseeing the complete life-cycle of data assets. Data governance provides the necessary structure and mechanisms to ensure the accuracy, integrity, and accessibility of the data that underpins the product stewardship process. A seamless integration of these concepts means companies can effectively collect, manage, and analyse product composition, sourcing, and environmental performance data. Therefore, an organization must undertake data governance and have well-structured data for a compelling product stewardship system.





# Data Governance

The systematic management and control of critical information and data regarding the foundational elements of products are instrumental in achieving transparency and responsible decision-making. [Data governance](#) is a set of principles and processes that ensure high quality, integrity, and accessibility of data during the complete data management cycle.

## How Data Stewardship fits in Data Governance?

Data stewardship begins with data governance, which sets the framework for how data will be managed across the organization. Data stewardship is a critical component of data governance, focusing on the practical implementation of data policies and standards. Data stewards work collaboratively with data governance

committees to ensure that data is managed in accordance with established guidelines. They act as enablers of data governance, translating data governance principles into action and ensuring that data is managed consistently and effectively.

### Raw Material Information

- Collecting raw material information & certification
- Supporting Documents

### Review

- Test material identification
- Data discrepancies
- Compliance with internal standards

### Compilation

- Compiling Data into Database
- Entering regulatory information Summary

### Storage

- Labelling Documents
- Uploading/Archiving Documents

It includes setting defined processes for all steps in the data cycle, including collection, review, processing, analysis, storage, and archiving. Good data governance requires quality checks after every stage of the data cycle and setting instructions in SOPs for each phase. Within the context of product stewardship, data plays a vital role throughout the entire product lifecycle. From sourcing and manufacturing to distribution and end-of-life management, various data points are generated, including information on raw materials, environmental assessments, consumer feedback, and compliance metrics. Effective Data Governance becomes crucial to systematically collect, validate, and analyze this diverse data, enabling organizations to make informed decisions that support their product stewardship objectives. Within this comprehensive landscape, data stewardship emerges as the practical execution and operational arm of data governance.

# Data Stewardship

Data Stewardship is the functional aspect of an overall Data Governance program—where the day-to-day work governing an enterprise’s data gets done. At its core, [data stewardship aims to establish a culture of trust and accountability surrounding data](#). One of the primary goals of data stewardship is to maintain data quality. Data stewards work to identify and rectify any data quality issues, ensuring that data is fit for its intended purpose. They validate data, resolve inconsistencies, and enforce data standards, preventing the propagation of inaccurate or unreliable information. Data Stewards are also responsible for integration, security, regulation, documentation, lifecycle management, usage and accessibility of data. Data Stewardship is crucial to the success of Data Governance (which, in turn, is essential to the success of Data Management). This is because

it is through Data Stewardship (and Data Stewards) that all the required information and data are collected and documented. By bridging the gap between data governance’s strategic vision and operational reality, data stewardship becomes the linchpin, ensuring data governance principles are theoretical aspirations and tangible practices that drive a culture of data responsibility and data-driven decision-making.



# Raw Material Information

One of the critical components of product stewardship is the raw material information and its management. It includes collecting documents like certificates of analysis, compositional info, safety data sheets, product specification sheets, technical data sheets, manufacturing flow charts, and regulatory dossiers from the raw material suppliers and manufacturers. This step is crucial and often time-consuming, requiring contacting suppliers, distributors, and manufacturers globally. It also involves reviewing documents for test material identification, data discrepancies, and compliance with standards.

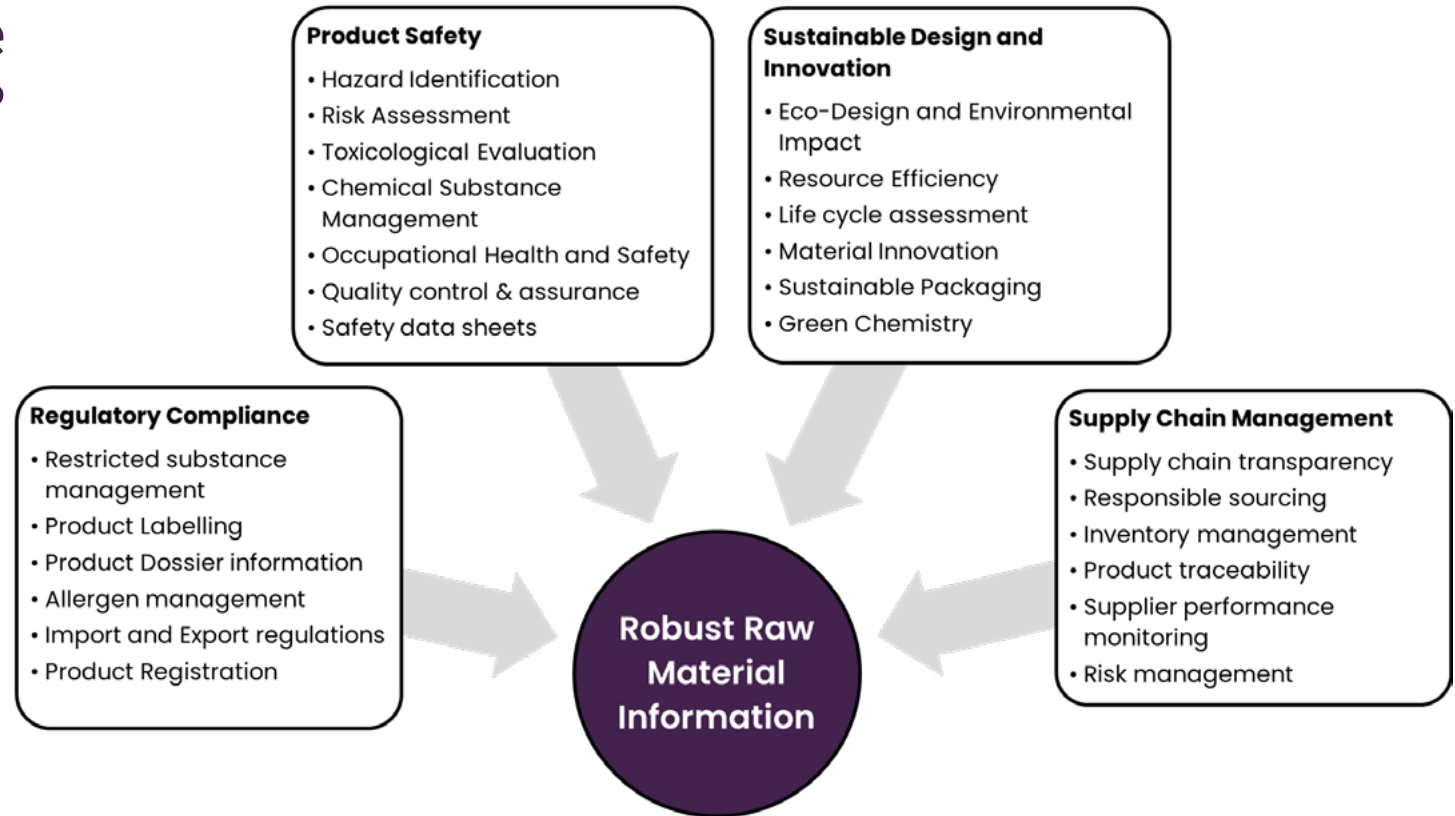
Comprehensive and accurate information about raw materials is essential for assessing the potential risks and impacts associated with their use in products throughout their lifecycle. This includes [understanding their chemical](#)

[composition](#), physical properties, and potential hazards. By having access to detailed documentation, companies can make informed decisions about selecting, sourcing, and handling raw materials. Moreover, it facilitates environmental assessment, identifying health and safety impacts associated with using specific raw materials, thus enabling manufacturers to design and produce safer and more sustainable products. Such information is essential for achieving regulatory compliance, as it allows companies to meet legal requirements, such as product labelling requirements, generate safety data sheets, and provide environmental reporting. Effective product stewardship relies on reliable raw material information and documentation, facilitating transparency, risk mitigation, and responsible business practices across the supply chain.

**Comprehensive raw material information contains details such as identification, composition, manufacturing information, supplier information, safety data, regulatory & labelling details, environmental impact, physical and chemical properties, and sustainability aspects.**

# Why comprehensive raw material information is integral to effective product stewardship?

The availability and management of raw material information, coupled with effective data governance practices, play a pivotal role in shaping every aspect of product stewardship. As we explore the major areas of product stewardship namely regulatory compliance, product safety and quality, sustainability & supply chain management, it becomes clear that a comprehensive and robust collection of raw material information is indispensable.





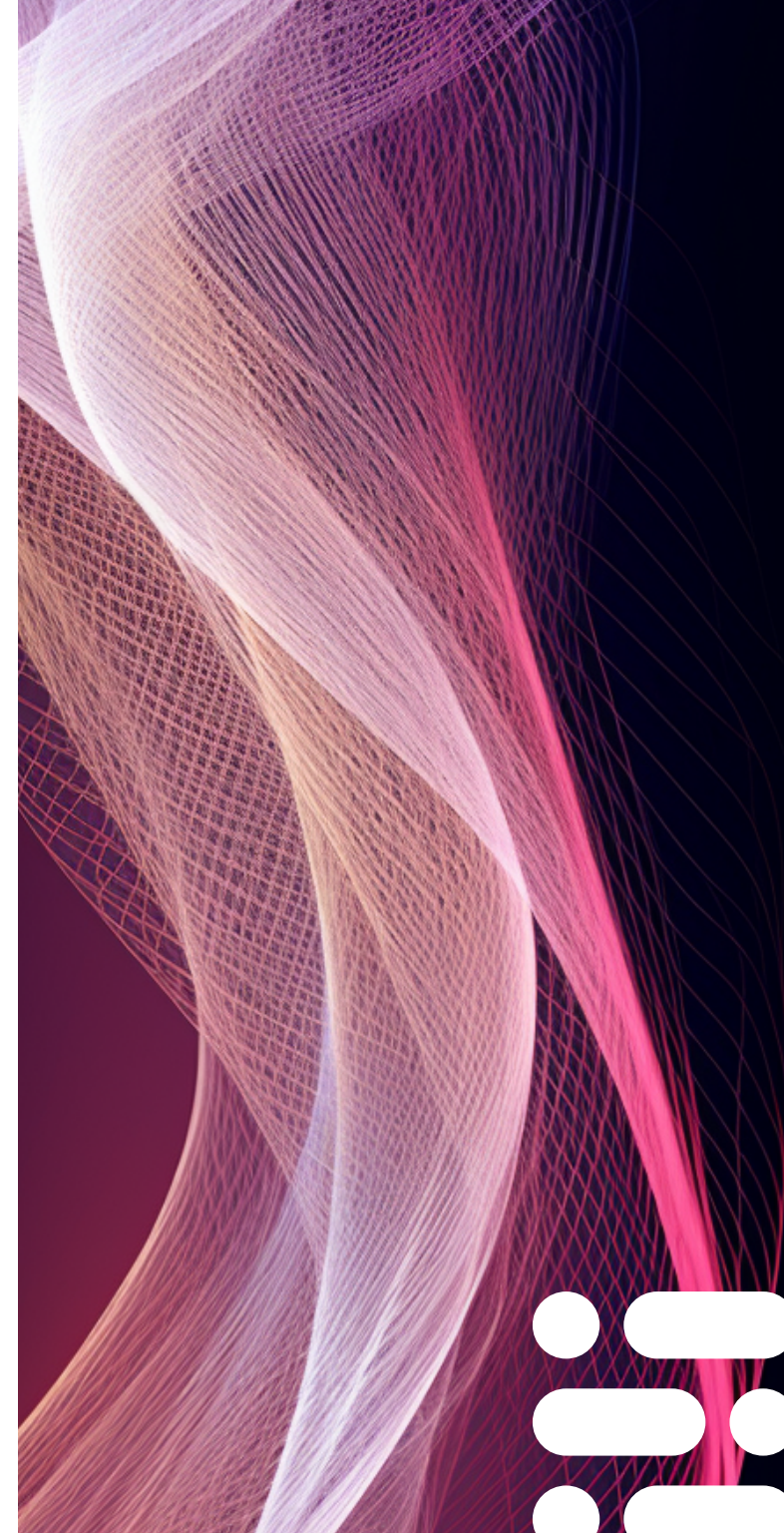
# Regulatory Compliance

Having robust raw material information enables companies to identify and understand the presence of potentially hazardous substances in their products, ensuring compliance with regulations such as:

- European Union's [Registration, Evaluation, Authorization, and Restriction of Chemicals \(REACH\)](#)
- United States [Toxic Substances Control Act \(TSCA\)](#).

Legislations like [California Proposition 65](#) and the European Union's [Restriction of Hazardous Substances \(RoHS\) Directive](#) demand disclosure and management of hazardous substances in products, emphasizing the significance of complete raw material information for better compliance. A streamlined Data governance framework is required to support regulatory compliance by establishing processes for collecting, storing, and reporting data required by

regulatory and industry standards. Product labelling regulation is where robust raw material information helps assure thorough compliance with the required laws. [Classification, Labelling and Packaging \(CLP\)](#) regulation ((EC) No 1272/2008) requires a determination of whether a substance or mixture displays properties that can lead to hazardous effects in people and the environment<sup>7</sup>. It provides criteria to identify hazards in substances or mixtures by assigning hazard classes and categories, covering physical, health, environmental, and additional risks. Thus, with comprehensive data on raw materials, companies can appropriately classify their products, provide necessary hazard warnings, and communicate essential safety information to consumers and other end-users.





# Product Safety and Quality

A critical aspect of product stewardship revolves around the quality of raw materials and the overall safety of the final product. Detailed raw material information helps identify potential hazards associated with the materials used in final products. This includes [understanding the chemical composition](#) of raw materials, potential allergens, and any harmful substances present as impurities or intentionally added ingredients. By analysing this data, companies can determine the safety risks associated with their products and take appropriate measures to mitigate or eliminate these hazards. Identifying potential hazards early in product development enables companies to make informed decisions and prioritize consumer safety.

Quantifying exposure levels to chemical substances in consumer products is one of the components driving a robust [product safety assessment](#). A thorough [review of raw material](#) information

provides toxicologists with critical data to estimate the concentration of chemicals in the final products. This allows them to determine the extent of human exposure and assess potential health effects based on exposure duration and frequency.

Although comprehensive raw material information does offer an in-depth understanding of the chemical makeup of a product, revealing the presence of specific components and their potential impacts on human health and the environment, more than raw material data is required in comprehensive product safety assessments. While it lays the groundwork, further studies, testing, and evaluation may be necessary to address specific safety concerns adequately. Toxicologists and safety experts utilize a multidisciplinary approach, incorporating extensive data reviews, additional toxicological studies, detailed exposure assessments, and post-market surveillance to understand a product's safety profile thoroughly.

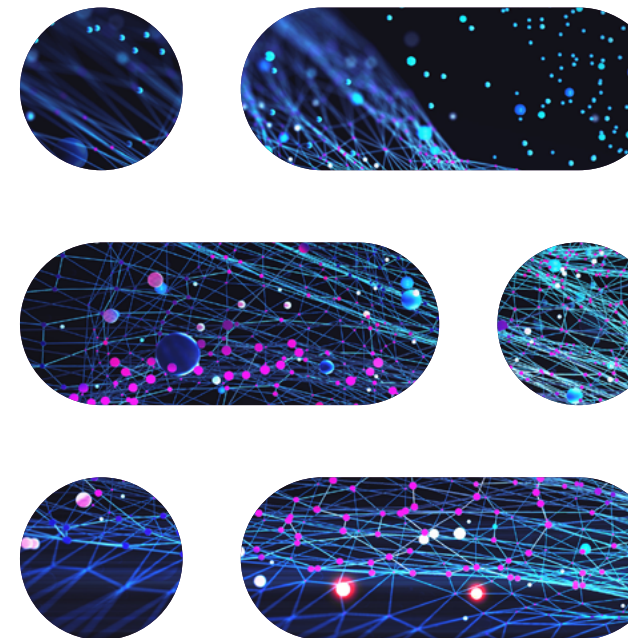
**Areas where additional safety studies are required for comprehensive product safety assessment:**  
**Composition of final product formulation, product use and application, long-term exposure & chronic effects, combined effects of multiple products, interaction with packaging materials and emerging hazards.**

# Sustainable Design and Innovation

Sustainability is an integral component of product stewardship, aimed at [reducing products' environmental and social impacts throughout their lifecycle](#). Manufacturers and suppliers of goods should consider how their raw material selection impacts the sustainability of their products. Knowledge about raw materials, such as how much is virgin and how much is from recycled sources, the carbon and ecological footprints of those materials and what kind of sustainable mix can be used, plays a crucial role in guiding sustainable design and innovation initiatives. With sustainable raw material selection and modern eco-design practices, companies can create products with lower environmental impact. Moreover, material innovation, resource efficiency, and social impact considerations contribute to developing more sustainable products that resonate with consumers and align with ecological and societal needs.

The pressures of environmental concerns are driving businesses to transition towards incorporating sustainable and eco-friendly chemicals and ingredients in their products. This shift entails exploring alternatives to conventional and finite materials and prioritising using [sustainable](#). Consequently, an organisation can reduce its carbon footprint, curb CO2 emissions, and strengthen its commitment to sustaining the environment. The manufacturing industry's move towards sustainability has also sparked remarkable innovation, paving the way for developing more environmentally conscious and sustainable products. An example of this trend is how petrochemical-derived materials are replaced with natural bio-engineered alternatives, reflecting the industry's increasing embrace of green chemistry principles and plant-based solutions.

To support these design and innovation trends, new information on sustainable properties of raw materials must be captured and integrated into the design and manufacturing processes.



# Supply Chain Management

With an ever-expanding world of consumer demand due to economic growth and population expansion, the global supply chain network is getting more complex than ever. Maintaining the safety and quality of established and novel raw materials from different parts of the world is a growing challenge. Adding environmental sustainability and ethical parameters further challenges businesses and expands the complexity of [procuring a supply chain](#). The quality, safety and sustainability of supply chain materials are the backbone of consumer goods production, and its management is critical for operation and production. A dependency on one source for a particular raw material can place risks on producing goods and negatively impact a business when that source is unsustainable or environmentally damaging. Hence, evaluating, assessing and sourcing alternative materials for continuous production is essential. An organization must have complete

raw material documentation from its supply chain, including natural and energy resource usage information, manufacturing product specification, physical or chemical qualification information, human and environmental safety information, and waste production information for the raw material and its alternatives. A business must consider a product's supply chain and overall product life cycle from an ethical and regulatory standpoint.





# How can Evalueserve help drive responsible Product Stewardship?

A comprehensive compilation of raw material information is vital for steering product stewardship in consumer goods companies. It ensures product safety, promotes regulatory compliance, supports environmental sustainability, enhances supply chain transparency, facilitates risk management, and fosters product innovation. By collecting and utilizing exhaustive raw material information, companies can make informed decisions, demonstrate responsible practices, and meet the expectations of consumers and stakeholders for safer, sustainable, and socially responsible products.

Evalueserve has a team of professionals that can assist throughout your product life cycle. We offer a structured approach to collecting, organizing, analyzing, and utilizing raw material data essential

for product safety, sustainability, and regulatory compliance. We have a proven track record of establishing a robust Data Governance framework in the client's organization by fostering open communication channels across departments, including Technical Material Owners, Sector Toxicologists, Regulatory

Assessors, Life-cycle Assessors and Supply Chain specialists. A brief outline of the primary raw material information compilation framework that Evalueserve uses is depicted below.



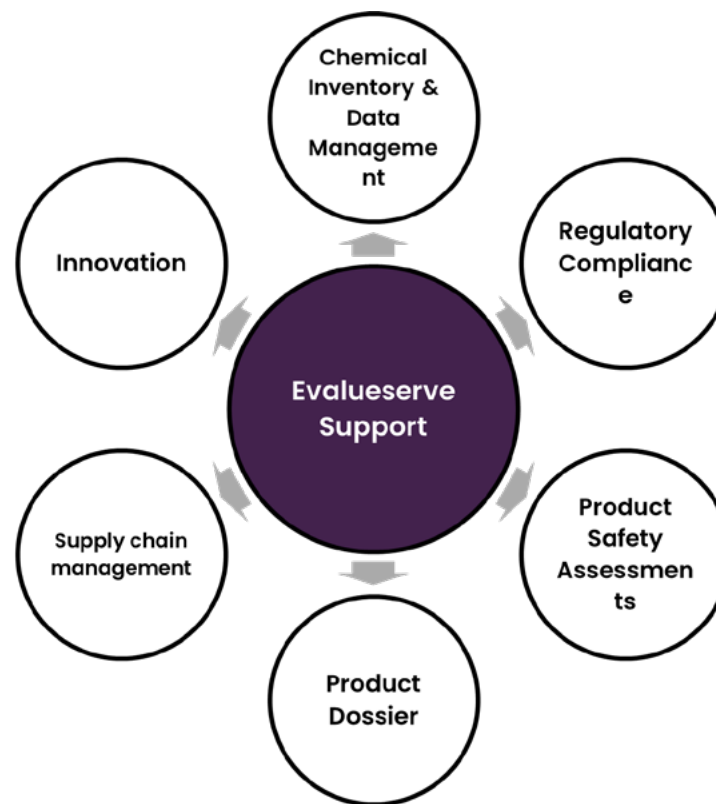
We have manuals, guidelines, and checklists for raw material information collection, analysis, interpretation, and summarization in a format specific to the client's need. Our internal quality monitoring systems enable us to deliver high-quality reports consistently. With over a decade of experience managing raw material information, we have successfully compiled and qualified knowledge on more than 5,000 ingredients. Our expertise extends to speciality chemicals such as polymers, cross polymers, complex co-polymers, surfactants, resins, botanicals, natural extracts, oils and UVCBs.

[Evalueserve](#) also has extensive experience in supporting clients' data stewardship endeavours. Evalueserve has facilitated seamless data integration and collaboration across

various departments by actively engaging in data quality management. We've ensured effective product traceability in the client's supply chain to manage recalls and build consumer trust. Additionally, our performance analytics has provided data-driven insights for product improvements while managing vendor data

effectively has enhanced overall data quality.

Evalueserve can promote your strides toward a more sustainable future by helping you navigate the complexities of product stewardship at every step.



# Case Study

The client, a leading consumer goods company, had been relying on contract manufacturing partners to produce the products of one of their recent acquisitions. The client wanted to improve quality control, reduce lead times, and align the sustainability goals of the acquired manufacturing processes.

## Objectives:

The client's goal was to update their centralized database with the raw material information of their products produced by contract manufacturing partners. This would allow them complete visibility and control over the materials used in their products. The client also wanted to ensure compliance with applicable regulations and standards by collecting accurate and up-to-date information on the

As part of this transition, the client identified the need to gather comprehensive raw material information from their contract manufacturing partners.

raw materials used by their contract manufacturing partners. By integrating raw material information into their database, the client sought to improve supply chain transparency and accurately assess the sustainability and safety attributes of the materials used.





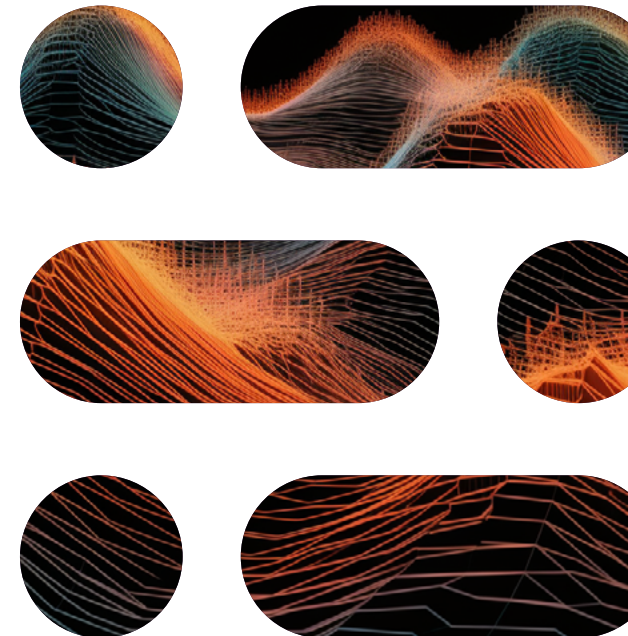
## Approach:

Evalueserve initially assessed the client's existing processes and identified gaps in available raw material information. Evalueserve collaborated with key stakeholders to understand regulatory product safety requirements and refined the scope and objectives of the project with the client.

In the project's next step, Evalueserve engaged with the contract manufacturing partners and suppliers, established clear communication channels and gathered the necessary raw material information. This involved providing templates, questionnaires, and guidelines to standardize data collection. Evalueserve worked closely with the manufacturers to collect comprehensive information on the raw materials, including specifications, certifications, safety data sheets and origin documentation. The data

collection process was conducted systematically to ensure accuracy and completeness. The collected raw material information was integrated into the client's centralized database. The accuracy and consistency of the data were verified by cross-referencing it with external and internal standards. A compliance review was conducted to ensure the collected raw material information met all applicable regulatory and safety parameters. Evalueserve addressed any gaps or discrepancies and worked with the client's respective department heads and subject matter experts to develop corrective action plans. Once the raw material information was successfully integrated, Evalueserve assisted the client in managing and maintaining the centralized database. raw materials used by their contract manufacturing partners. By integrating raw material

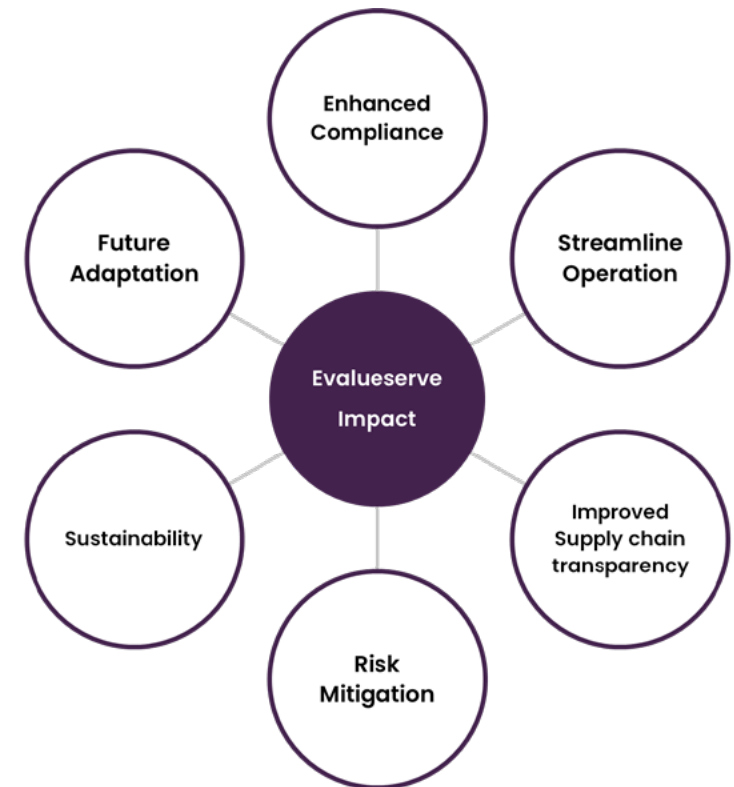
information into their database, the client sought to improve supply chain transparency and accurately assess the sustainability and safety attributes of the materials used.



## Evalueserve Impact:

As a result of the collaboration with Evalueserve, the client could integrate comprehensive raw material information of more than 500 raw materials belonging to 40 different formulas into their centralized database in less than two years. The availability of accurate and detailed raw material information ensured precise assessment of raw materials according to the client's safety standards and regulatory requirements. The client gained insights into the sustainability attributes, sourcing practices, and the materials' safety profiles, allowing them to make informed decisions and drive responsible sourcing initiatives. The client now possesses robust data in their centralized database to accommodate future changes and updates. They can adapt to new regulations, incorporate additional

raw material information, and quickly expand their product lines. Thus, this transition to in-house manufacturing, supported by comprehensive data management, enabled the client to streamline operations, enhance product stewardship, and build a foundation for sustainable growth.



## Evalueserve Capabilities:

The Chemical Safety & Regulatory Affairs (CSRA) team at Evalueserve comprises over 40 professionals, including toxicology consultants, toxicology analysts, chemistry experts, regulatory specialists, and business solution architects who can support and provide expert solutions at every stage from product development to launch of the product into the market.

Our team has the skills and knowledge to assist you by performing hazard identification, data summarization, undertaking human and environmental risk assessments, developing a data governance framework, and providing regulatory intelligence support. We also offer bespoke digital solutions in toxicology information retrieval, management, and updating.

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