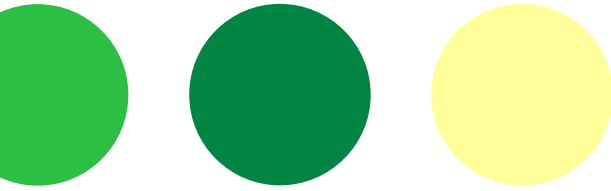




# PlasticsEurope

Eco-profiles: Environmental Metrics of the Plastics Industry



## Eco-profiles: environmental metrics of the plastics industry

Due to societal, political and market demands, industry has to respond to new challenges in relation to sustainable development. With the Eco-profile programme launched in 1993, PlasticsEurope has established a milestone in reporting product-related environmental metrics for the chemicals and plastics industry. About 20 years later, the association sets itself new ambitious goals.

### Sustainable development in plastic industry

The plastics industry faces challenging stakeholder expectations in terms of contributing to sustainable development; for instance, retailers ask for product-related environmental information; the public interest about environmental aspects of industrial production processes is constantly increasing; new regulatory initiatives for environmental product labelling emerge. These developments raise the demand for access to high-quality data. Industry associations play a key role in this context because they help create a level playing field for their member companies in response to societal, political, and market demands.

As the first industry organisation publishing detailed environmental data and as one of the leading associations in the field of sustainability, PlasticsEurope encourages Life Cycle Thinking (LCT). By means of a comprehensive view on production systems and product life cycles, the LCT approach enhances the understanding of product benefits and burdens. Consequently, LCT provides decision-makers with information for further optimisation of product systems.

The association of plastics manufacturers in Europe first launched the Eco-profile Programme almost 20 years ago. Today, there are more than 70 Eco-profile reports publicly available.

### What are Eco-profiles?

**Eco-profiles** are reports on product-specific environmental impacts. Based on European industry averages of the respective polymer production technologies, they include detailed environmental datasets – the so-called **Life Cycle Inventory (LCI)** – and environmental key performance indicators. Their scope is from cradle (extraction of raw materials) to gate (uncompounded precursors or resins).

While the inventory consists of all relevant material and energy inputs as well as emissions and waste outputs associated with the production, the key performance indicators contained in the associated **Environmental Product Declaration (EPD)** provide impact metrics, such as the carbon footprint and many others.

While the detailed data are used by life cycle experts, the EPD is suitable for business-to-business communication with downstream users of plastics.

Looking ahead, PlasticsEurope has recently stepped up the ambition of this programme, in order to contribute to an even more robust and useful application of Eco-profiles and to remain one of the thought leaders for sustainability.

## Globally harmonised standard for Eco-profiles

Decision-makers in industry and policy expect Life Cycle Assessment (LCA) results to be consistent, irrespective of where they are generated. Despite the standardised framework of LCA, experts indicate that this expectation cannot yet be met due to the differences in practices around the world. For instance, disparate value judgments in allocation of complex chemical co-production processes, such as the steam cracking of naphtha, may render downstream results incomparable.

Therefore, PlasticsEurope has developed and published a sector-specific methodology for the chemicals and plastics industry on the basis of state-of-the-art life cycle assessment practices. To ensure compatibility, only scientifically agreed and established methods are adopted, while sector-specific adaptations are kept to a minimum. Moreover, all procedures are geared towards practicability. Feedback is constantly being solicited from the Eco-profile user community both in industry and in the academic world to ensure robustness of data and methods.

### Main benefits of Eco-profiles

- **Public access** to high-quality datasets for use in reliable product life-cycle studies
- **Confidentiality of detailed process data** of individual companies safeguarded by aggregating data into European averages
- **Time and money savings** for member companies due to the coordination of industry-wide data collection campaigns and professional development of Eco-profiles
- **Transparency and credibility** of the data and methodology through published Eco-profile rules document
- **Continuous monitoring and update** of datasets to ensure accuracy and representativeness

The installation of the Eco-profile programme management, provides additional quality assurance by continuous improvement of the methodology, project coordination, and reviews for data validation. PlasticsEurope also provides a Life Cycle Thinking platform by regularly inviting other associations and stakeholders in general to share their experiences and collaborate world-wide towards best practices in LCA in general and specifically for plastics.

## Keeping Eco-profiles up-to-date



Since the Eco-profile programme was launched in the 1990s, substantial changes in LCA methodology, standardisation, and practice have occurred. For instance, new concepts, such as Environmental Product Declaration (EPD) and Carbon Footprint, have emerged. A multitude of LCA studies has improved the understanding and rendered a knowledge base which can be capitalised on in the development of new datasets. Further, technologies in the chemicals and plastics industry are constantly evolving.

In order to comply with stakeholder needs and best practices, Eco-profiles are being monitored and updated. In 2011, the PlasticsEurope Management Team embarked on an update of all Eco-profiles. Considering the number of datasets and the effort required for each dataset, this goal presents a major effort.



## Relevance for the Eco-profile community

The constantly growing use of Eco-profiles illustrates the demand for high-quality data and the relevance of the programme for the life cycle community. New uses of the data include the standardisation of water footprints and, more generally, the European development of product environmental footprints.

By providing publicly available data about the environmental performance of plastics production, the Eco-profile programme not only responds to stakeholder needs but also has an added value for the plastics industry itself. The programme fosters continuous improvement, innovation and competitiveness. In addition to process optimisation within companies, downstream uses of plastics can be examined. It is important to note, however, that a direct comparison of polymers or production sites can be misleading. Eco-profiles are robust and representative European industry averages which are meant to be used in LCA studies of complete product life cycles and with a defined functional unit of a finished product or service.



Thus Eco-profiles create a level playing field and render meaningful results, for instance, when assessing advantages and disadvantages of alternative feedstocks and production technologies with regard to a given application.

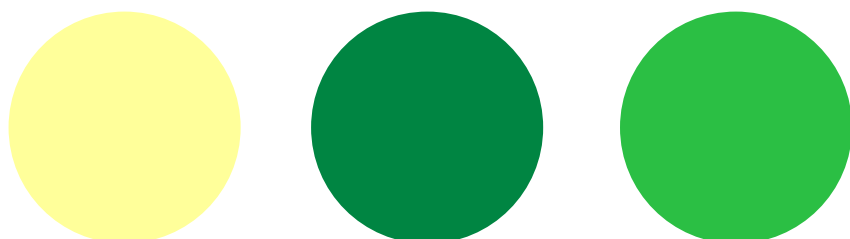
## Why Eco-profiles?

- **Product stewardship** in response to customer and stakeholder demands
- **High-quality data** about industrial production processes publicly available through LCA databases and software
- **Continuous improvement** supported by scientific analysis

Likewise, downstream users, such as plastics converters and brand owners, employ Eco-profiles as an invaluable data resource because they are reliable building blocks for LCA studies of consumer, automotive, and construction products.

Looking into the near future, the necessity of even more detailed inventory data which enable the utilisation of relevant and consensual environmental footprint methodologies represents one of the challenges that Eco-profiles will be confronted with. Thus, the emphasis in dataset development will be focused on an even better integration, validation and availability of intermittent updates. Moreover, regarding the need for comparable results and globally harmonised practices, PlasticsEurope is actively seeking new relations with other regional associations.

In the long run, PlasticsEurope aims at developing Eco-profiles into the most preferable database for the chemical and plastics industry in Europe and with world-wide compatibility.



## For Further Information

### Programme Owner

#### PlasticsEurope

Avenue E van Nieuwenhuysse 4, Box 3

B-1160 Brussels, Belgium

Phone +32 (2) 675 32 97, Fax +32 (2) 675 39 35

E-mail [info@plasticseurope.org](mailto:info@plasticseurope.org)

### Programme Manager

#### DEKRA Consulting GmbH

Handwerkstrasse 15

D-70565 Stuttgart, Germany

Phone +49 (711) 7861-3596, Fax -2202

E-mail [consulting@dekra.com](mailto:consulting@dekra.com)

### References

Eco-profile website:

<http://www.plasticseurope.org/plastics-sustainability/eco-profiles.aspx>

PlasticsEurope: Eco-profiles and environmental declarations – LCI methodology and PCR for uncompounded polymer resins and reactive polymer precursor (version 2.0, April 2011)

[www.plasticseurope.org](http://www.plasticseurope.org)

**PlasticsEurope AISBL**

Avenue E. van Nieuwenhuyse 4/3  
B-1160 Brussels · Belgium

Phone +32 (0)2 675 3297  
Fax +32 (0)2 675 3935

[info@plasticseurope.org](mailto:info@plasticseurope.org)  
[www.plasticseurope.org](http://www.plasticseurope.org)