

Review

Review Details

The project included regular milestone meetings with representatives of all participating producers and PlasticsEurope as system operator. The reviewer participated in these meetings. In addition, a review meeting between the LCA practitioner and the reviewer was held, including a model and database review, and spot checks of data and calculations.

This project presented a particular challenge because, contrary to goal and scope, the inclusion of a third major producer with a primary dataset became impossible at a late stage. Consequently, the practitioner had to develop a literature dataset to enable the preparation of this Eco-profile at all. Limitations on data quality arising from this decision are thus not attributable to the practitioner nor to the quality of the primary data provided by the two remaining companies; they are rather an upshot of the amalgamated life cycle model.

Specific comments on the results include:

- Proxy datasets needed to be developed to represent auxiliaries of trioxane and co-monomer production. The impact of these proxy data was assessed and, also due to their mass contributions of less than 1%, found to be negligible.
- The differentiation of the water inventory by source and destination (allowing for a water balance and supporting water footprints) should be included in future updates.

Compliance with ILCD Entry-level Requirements

Table 19: General review reporting items (reproduced with kind permission of JRC)

REVIEW REPORTING			
General information			
Data set name	Polyoxymethylene (POM)		
Data set UUID and version number	n/a		
Data set locator (e.g. Permanent URI, URL, contact point, or database name and version, etc.)	n/a		
Data set owner	PlasticsEurope aisbl		
Review commissioner(s)	PlasticsEurope aisbl		
Reviewer name(s) and affiliation(s), contact	Dr.-Ing. Ivo Mersiowsky, DEKRA Consulting GmbH		
Review type applied	Independent external		
Date of review completion (DD/MM/YYYY)	13/12/2013		
Reviewed against / Compliance system name	ILCD Data Network – Entry-level requirements		
Reviewer assessment:			
Aspect	Yes	No	Comments
Quality compliance (ISO 14040 & 14044) fulfilled (see Table 20)	X		
Method compliance (ISO 14040 & 14044) fulfilled and documented in data set	X		
Nomenclature compliance (see Table 21) fulfilled	X		
Documentation compliance (see Table 21) fulfilled	X		
Review compliance (Independent external review report) fulfilled	X		
Compliant with ISO 14040 & 14044	X		
Overall compliant with compliance system	X		
Date, location, reviewer signature	13 December 2013, Stuttgart, Germany		

Table 20: Specific/detailed review reporting items for LCI data set: quality compliance (ISO 14040 & 14044; reproduced with kind permission of JRC)

ITEMs	Comments
<p>Time-related coverage/representativeness:</p> <p>“age of data and the minimum length of time over which data should be collected”</p> <p>“qualitative assessment of the degree to which the data set reflects the true population of interest”</p>	<p>Good</p> <p>Foreground: 12 month averages representing the years 2010 (producer 1) and 2011 (producer 2).</p> <p>Background: wide range from 1990s to 2000s. Substantial contribution expected from natural gas (2005).</p> <p>Maximum temporal validity until 2016.</p> <p style="text-align: right;">(p.10)</p>
<p>Geographical coverage/representativeness:</p> <p>“geographical area from which data for unit processes should be collected to satisfy the goal of the study”</p> <p>“qualitative assessment of the degree to which the data set reflects the true population of interest”</p>	<p>Good</p> <p>European production average (data from two producers in two different European countries; supplemented by average from literature).</p> <p style="text-align: right;">(p.11)</p>
<p>Technology coverage/representativeness:</p> <p>“specific technology or technology mix”</p> <p>“qualitative assessment of the degree to which the data set reflects the true population of interest”</p>	<p>Good</p> <p>Technology mix representing European production (see above).</p> <p>>80 % of the European production capacity (EU-27) in 2010–2011.</p> <p>Two specific technologies supplemented by average from literature.</p> <p style="text-align: right;">(p.10)</p>
<p>Precision:</p> <p>“measure of the variability of the data values for each data expressed (e.g. variance)”</p>	<p>n/a</p> <p>Relevant foreground data is primary data, or modelled based on primary information sources of the owners of the technologies.</p> <p>See Uncertainty below for explanation of “n/a” rating.</p> <p style="text-align: right;">(p. 11)</p>
<p>Completeness:</p> <p>“percentage of flow that is measured or estimated”; assessed on level of process</p>	<p>Very good</p> <p>Primary data used for the gate-to-gate production covered all relevant flows in accordance with the cut-off criteria, i.e. at least 95 % of mass and energy of the input and output flows, and 98 % of their environmental relevance (according to expert judgment) were considered.</p> <p style="text-align: right;">(p.12)</p>
<p>Consistency:</p> <p>“qualitative assessment of whether the study methodology is applied uniformly to the various components of the analysis”</p>	<p>Good</p> <p>Primary data of the same level of detail and background data from DEAM and other databases were used. While building up the model, cross-checks ensured the plausibility of mass and energy flows. Due to the relevance of background datasets from different databases and the inclusion of literature data, the overall consistency rating is reduced.</p> <p style="text-align: right;">(p.11)</p>
<p>Sources of the data;</p> <p>Appropriateness of use primary/secondary data source</p>	<p>The main data source was a primary data collection from European producers, providing site-specific gate-to-gate production data for processes under operational control of the participating companies. Data for the upstream supply chain until the precursors are taken from several databases (DEAM, PlasticsEurope, GaBi, ecoinvent).</p> <p style="text-align: right;">(p. 11)</p>
<p>Uncertainty of the information</p> <p>(e.g. data, models and assumptions).</p>	<p>Variation of single data was not recorded. Variation of the model/dataset not applicable due to vertical average of production lines and technologies. The critical aspect within this model is the inclusion of literature data as a proxy for a third original dataset. Hence, Precision above was rated “n/a”.</p> <p style="text-align: right;">(p.12)</p>

Table 21

*Specific/detailed review reporting items for LCI data set: nomenclature and documentation
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ITEMS	Comments
Nomenclature	
Correctness and consistency of applied nomenclature	Yes
Documentation	
Appropriateness of documentation extent (see document "Documentation of LCA data sets")	Yes
Appropriateness of documentation form (ILCD Format)	Yes

Review Summary

This Eco-profile has a noticeably lower representativeness than other reports from the PlasticsEurope programme: this is because only two primary datasets were available. Through inclusion of literature data, the resulting dataset is still considered reliable and good quality representation of POM production in Europe. Once a third original dataset, with a substantial contribution to the European production volume, becomes available an expansion and recalculation is highly recommended to improve the achievable data quality ratings. The critical review confirms that this Eco-profile adheres to the rules set forth in the PlasticsEurope's Eco-profiles and Environmental Declarations – LCI Methodology and PCR for Uncompounded Polymer Resins and Reactive Polymer Precursors (PCR version 2.0, April 2011).

Reviewer Name and Institution

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