

ENVIRONMENTAL LABELLING OF ABSORBENT HYGIENE PRODUCTS: INSIGHTS AND PRELIMINARY OUTCOMES FROM THE EU ECOLABEL CRITERIA DEVELOPMENT PROCESS

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ABSTRACT

This contribution describes the state of play of the process setting the ground for the development of EU Ecolabel criteria for absorbent hygiene products (AHPs), which include baby diapers, feminine care products, tampons and breast pads. Criteria areas for the selection of environmentally friendly AHPs have been identified based on the analysis of techno-economic and environmental aspects through the products' life cycle and on the critical revision of legislation, technical procedures and environmental programs of relevance. The continuous engagement of stakeholders plays a key role in the process. Environmental criteria for AHPs could potentially cover: fitness-for-use, use of materials and substances, manufacturing and end-of-life. Consumer information and social criteria can be relevant as well for this product group.

INTRODUCTION

Promoting and following sustainable practices of production and consumption is one of the key challenges of modern society. Among the policy instruments that tackle this issue, Environmental Labels Type I [ISO 14024:1999] are a voluntary multi-criteria tool aiming at awarding environmentally preferable products based on life cycle considerations. A large group of products are included within the scope of existing environmental labeling programs available worldwide [Global Ecolabelling Network]. In particular, the EU Ecolabel [Regulation (EC) No 66/2010] is the instrument with which the European Commission intends to promote leading products on the market in terms of environmental performance and protection of human health and natural resources.

This contribution describes key results of a preparatory study setting the ground for the development of EU Ecolabel criteria for absorbent hygiene products (AHPs) and the preliminary identification of criteria areas of potential interest for this product group [JRC-IPTS et al., 2013]. The two main elements of this work have been an extensive analysis of

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AHPs with focus on techno-economic and environmental aspects and the direct interaction with stakeholders. The following products have been included within the scope: baby diapers, feminine care pads, tampons and breast pads.

MATERIALS AND METHODS

The development of selection criteria should follow a coherent, broad and transparent approach. Information relevant for the development of EU Ecolabel criteria for AHPs has been gathered through the following activities:

Task 1: A critical review of existing legislation, standards and testing procedures, environmental labels and green public procurement schemes has allowed the screening of rules and requirements potentially relevant for AHPs.

Task 2: The European market for AHPs has been analyzed to understand the economic weight of the products included within the scope and to ensure focusing on those most significant from an economic point of view. Information on sales, consumption, import/export figures as well as market growth rates has been collected with the support of EDANA, the international association for the nonwovens and related industries. No relevant data has been found for breast pads, but their market is expected to be significantly smaller.

Task 3: The technical description of AHPs and the further identification of potential sources of hazard and environmental hot-spots throughout the products' life cycle have provided the basis for understanding the significance of specific potential requirements for this product group. For the purposes of this task, existing Life Cycle Assessment (LCA) studies have been reviewed and new models developed and assessed for each AHP. LCA models have taken into account the environmental performance of average products on the European market from cradle to grave. Bills of materials and further production data have been derived from industry. Life cycle inventory data of relevant background processes have been obtained from the GaBi database [PE International, 2011]. Environmental impacts of relevance for this product group have been assessed through the CML 2001 method. The following indicators have been considered: Abiotic Depletion Potential, Acidification Potential, Eutrophication Potential, Global Warming Potential and Photochemical Ozone Creation Potential. Demand of renewable and non-renewable primary energy has been also quantified.

Further information about materials and methods can be found in [JRC-IPTS et al., 2013].

The insights gained from these steps have allowed for the identification of areas where environmental criteria for AHPs could be developed. Interaction with stakeholders along the process has been fundamental in order to gain technical information and to solve critical issues that could undermine coherency and practical feasibility of requirements.

RESULTS AND DISCUSSION

Task 1: Analysis of legislation, technical procedures and environmental schemes of relevance
The EU Ecolabel promotes, whenever possible, the harmonization between labels. The definition of requirements for AHPs could be inspired by some elements contained in existing labeling and green public procurement programs. At the current state of the art, the most significant references for this product group are represented by the Nordic Swan's criteria for

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sanitary products and by the guidelines developed by EDANA and by the Swedish Environmental Management Council [JRC-IPTS et al., 2013]. In addition, some environmental claims, e.g. sourcing of organic cotton, could be of potential interest. Consistency and feasibility of each requirement, however, must be evaluated critically before being proposed for inclusion in the EU Ecolabel. The development of EU Ecolabel criteria for AHPs is further influenced by existing criteria for other product groups (e.g. certification of wood and pulp production). In accordance with the EU Ecolabel regulation, requirements must also ensure that the use of hazardous substances is restricted.

Furthermore, criteria such as fitness-for-use and product quality are important elements to ensure that AHPs have desired product performance characteristics. However, product classification and test methods are not harmonized within industry and user tests seem to be the only widely-accepted method for assessing the technical performance of AHPs.

Task 2: Market analysis

In Europe, the production volume of AHPs in 2011 added up to ~8.6 billion € (58% diapers, 32% feminine care pads, 10% tampons), which equals approximately 0.8 million tons (84% diapers, 14% feminine care pads, 2% tampons) [JRC-IPTS et al., 2013]. A slight increase of production volumes could be observed over the past few years. 90% of the products are consumed in Europe and export sales are much higher than the amount of imported products, which are usually less expensive and heavier. The trend towards product differentiation and decrease of product weights can be observed

Task 3: Technical and environmental analysis

LCA results are reported in [JRC-IPTS et al., 2013] and for all AHPs within the project scope show a clear dependence between life cycle impacts and weight of the products, that could not be the case on a general basis. For each of the environmental impacts assessed, materials contribute to 53-98% of the total impacts. The end-of-life stage is relevant for Eutrophication Potential (16-25%), Global Warming Potential (27-33%) and Photochemical Ozone Creation Potential (9-19%) while contribution from production process, packaging and transport appears of secondary importance. Results for diapers are consistent with the information available in the literature, while information published for the other three case studies appears scarce. Results highlight that use of materials, i.e. natural resources (fluff pulp, cotton, viscose) and synthetic polymers (super absorbent polymers, polypropylene, polyethylene), is the key environmental issue for this product group. The technical analysis of the main materials has allowed the preliminary identification of actions that could lead to an improvement of the environmental performance. The analysis has also shown that some inherently hazardous substances could potentially enter into the product (e.g. with adhesives, inks and dyes), even if consumers can be reinsured that the use of the product is safe.

Identification of potential criteria areas

Based on the results presented, the development of criteria for AHPs could encompass different environmental areas. However, financial implications should be also taken into account in order to avoid prohibitively high costs for manufactures.

Fitness-for-use and quality characteristics of AHPs are considered of key importance to ensure that criteria for AHPs do not negatively influence the product performance.

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In addition, LCA evidence suggests that the main area for environmental improvement and, therefore, criteria development should be related to the use of materials. Requirements influencing the design of the product would be probably the most effective measure to promote more eco-friendly products on the market. However, from a practical point of view, following this direction is complicated by the lack of harmonized classification for AHPs, the limited information available for setting environmental thresholds, and the costs that SMEs would have to afford. Other key issues related to the materials used for AHPs (e.g. fluff pulp, viscose, cotton) are their sustainable sourcing and production as well as declaring the avoidance of inherently hazardous components in the product. The end-of-life stage is another critical element in the products' life cycle. However, possibilities of influencing disposal practices are limited. Due to the relatively low contribution to the life cycle impacts of the product, packaging is not considered a key issue. This applies similarly to the manufacturing process itself, however, since it is under the companies' direct influence, it is considered feasible to achieve some environmental improvements in this life cycle stage.

Setting criteria in these areas should assist in the reduction of negative impacts due to production and consumption of AHPs. Other issues of potential interest include the information of consumers and the consideration of social aspects.

CONCLUSIONS

This contribution describes the work carried out for building a basis of information that can be used to address the development of EU Ecolabel criteria for AHPs (i.e. baby diapers, feminine care pads, tampons and breast pads). The following steps have been followed: scoping phase, analysis of legislation technical procedures and environmental schemes of relevance, market analysis, technical and environmental assessment, identification of criteria areas. Preliminary criteria areas of potential interest for AHPs relate to: fitness-for-use, use of materials and substances, manufacturing and end-of-life. The continuous engagement of stakeholders plays a key role for the definition of a set of coherent and feasible requirements. Further discussion is ongoing and a final set of criteria is planned to be drafted by 2014.

REFERENCES

- Global Ecolabelling Network (GEN). <http://www.globalecolabelling.net/>
- ISO 14024:1999. Environmental labels and declarations - Type I environmental labelling - Principles and procedures. http://www.iso.org/iso/catalogue_detail?csnumber=23145
- JRC-IPTS, DEKRA Consulting and PE International (2013). Development of EU Ecolabel Criteria for Absorbent Hygiene Products - Preliminary Report – Draft v.5. <http://susproc.jrc.ec.europa.eu/sanitaryproducts/stakeholders.html>
- PE International (2011). GaBi 5 - Software-System and Databases for Life Cycle Engineering. Copyright, TM. Stuttgart, Echterdingen. 1992-2011
- Regulation (EC) No 66/2010 of the European Parliament and of the Council of 25 November 2009 on the EU Ecolabel. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:027:0001:0019:EN:PDF>

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