Chemicals in paper and paperboard - report as part of a Govermental assignment

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Paper industry is one of the largest industries in the world and uses a vast amount of chemicals. In everyday life, paper is an important material used in a variety of paper and paperboard consumer articles, such as newspapers and magazines, packaging for shipping and distribution of items. Depending on the quality and functionality requirements for the paper articles, paper grades with various characteristics can be used. To achieve specific characteristics, a variety of chemicals are used. In paper production, chemicals can either be used to improve functionality of the paper or in the production process itself. In addition, chemicals are also used on the final paper articles. Common production practices include printing and gluing, where chemicals like inks, solvents and adhesives are added. The aim of the project was to identify substances that can be present in consumer articles of paper and paperboard on the Swedish market. The project was performed in various steps. Firstly, data was collected to develop consumer exposure estimations and identify relevant origins for the paper and paperboard placed on the Swedish market. Secondly, identification of substances potentially used in paper production was performed by reviewing relevant literature in combination with thorough communication with the industry. A prioritisation model was developed to focus on the substances that had most relevance for paper articles on the Swedish market. Another prioritisation model identified the most relevant paper grades. Finally, a list of substances, with the highest relevance to the aim of the project, was compiled. Focusing on selected substances, literature review and industry surveys provided information regarding the functionality of the substance used in different paper grades and articles. Identified information was regarding substance function and use in different paper grades and paper articles. Furthermore, this list was also sent to the industry to receive further information regarding their use of specific substances. It was concluded that domestic production had a dominant role for paper articles placed on the Swedish market. No paper grade could be excluded in this study apart from “other paper and board” that was excluded due to its low quantity compared to the other paper grades. The number of identified potential substances related to paper article manufacturing was large (>17 000 substances) and, hence, there was a need to prioritise among the substances. It is noteworthy that the majority of substances were related to printing industry. During the prioritisation step, it was decided that the focus would be on substances that could occur on the Swedish market in all paper grades apart from “other paper and board”. It was found that different consumer paper articles commonly had different chemical composition. It was also found that the required function could be achieved by a variety of substances and that substances could have more than one function in paper article manufacturing. In conclusion, this report demonstrates the various steps to identify the linkage between paper articles, paper grade, chemicals and specific substances. In addition to the results presented in this report, detailed lists of relevant substances are provided in the separate file “Appendix B1”.

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