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Research area: Product aims

Pulps // Recycled fibre pulp

Key words:

Recyclability, Components, Varnish, Food-contact paper

TITLE:**Recycling-oriented and health-friendly design of varnished paper and packaging products for the secure use of recovered paper for food contact papers****Background/Problem area**

Paper and cardboard are inevitable for food packaging due to its numerous technical qualities. On the recycled-fibre based papers and boards produced for food contact special requirements are imposed. In addition to the functional properties they must also be safe for the food and its consumers.

Since recovered paper is the most important source of raw materials for the paper industry, including food contact papers, recyclable and environmentally friendly design of paper / cardboard products is of great importance in terms of sustainability and recycling cycle.

In order to initiate developments in sustainable products, it is necessary to establish a method for testing and evaluation. Only with the help of a concept for evaluation, developments of recyclable and environmentally-friendly paper products may be pursued and evaluated.

Objectives/Research results

The aim of the project is the development of guidelines for the recyclable and environmentally friendly design of paper and packaging products, paying particular attention to varnishes (UV coatings, dispersion varnishes, oil based varnishes).

Another goal is the establishment and expansion of recyclability assessment of paper and packaging products, taking into account critical substances.

The results of the project show that in addition to the varnishes also other recovered paper components can contribute to critical substances in recycled fiber pulps. To determine targeted unwanted components, it is therefore recommended to identify the composition of the varnishes specified by the manufacturer and estimate the entry set of critical substances. Information derived from it may be used for further analytical determination

Recyclability tests of different varnished paper and packaging products showed good defibration as well as trouble-free sheet forming (sheet adhesion test). Differences were analysed regarding the fragmentation behaviour. There was no removal by screening due to the fragmentation. All pulps contained dirt specks that could not be completely removed by flotation. Dirt specks particle size distribution depends on type of varnish used. Especially UV varnishes result in a high proportion of large dirt specks.

Result of the poor removal of varnishes by the process steps of recovered paper treatment processing is that the substances remain in the recycled pulp.

Application/Economic benefits

The research project follows the basic approach, to expand the method of recyclability assessment of paper and packaging products to critical substances. This will lead to a significant expansion of basic knowledge about the recyclable and healthy design of paper and packaging products. In this way, the sustainable design of paper and packaging products will be promoted in order to ensure manufacturers of food packaging existing markets.

Period of time: 01.07.2011 – 30.06.2013

Remarks

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