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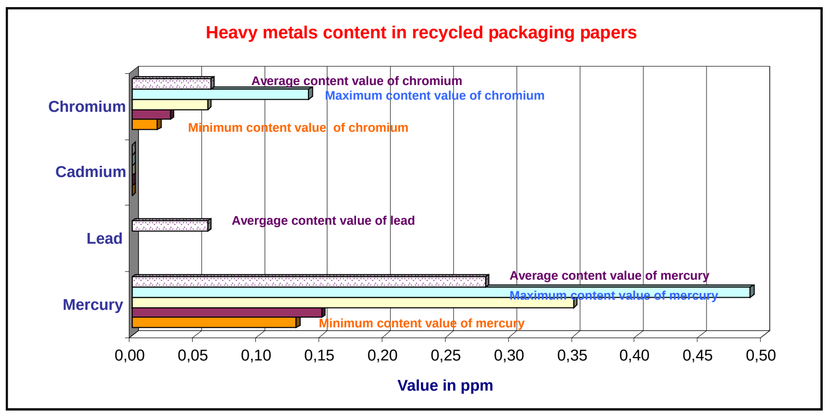
AIDIMA Furniture, Wood and Packaging Technology Institute

CHEMICAL SUBSTANCES CONTENT IN RECYCLED PACKAGING PAPERS

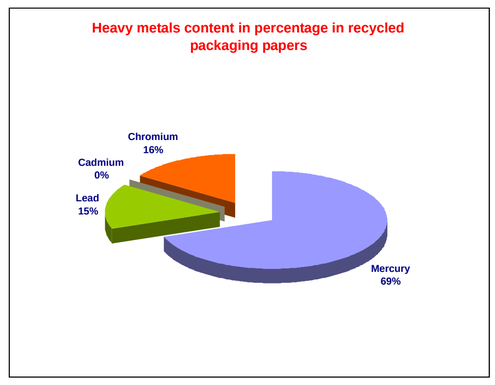
Heavy metals content



The heavy metals tested are the ones considered in the Council Directives 94/62/EC and 2004/12/EC related to waste and packaging waste.

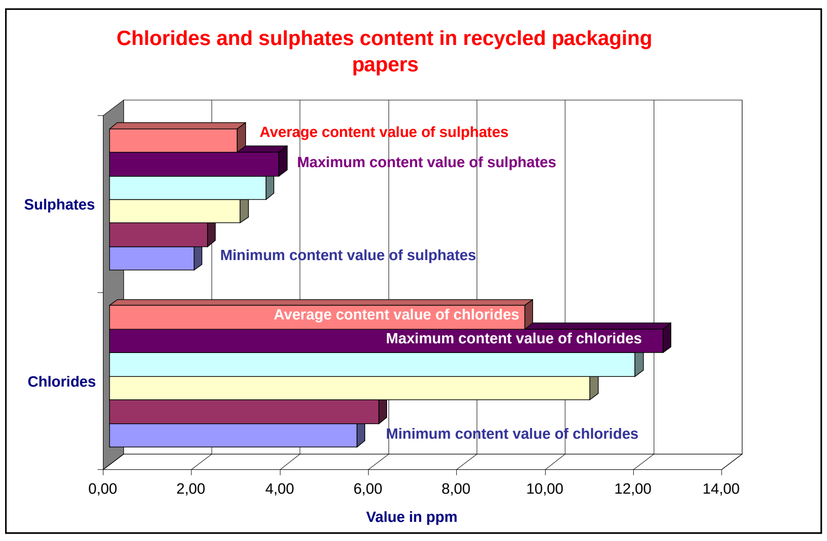
All the samples tested showed a content in cadmium below the detection value.

Besides only one sample had a value of lead to take into account (0.06 ppm in weight).
The greatest values are the ones corresponding to chromium and mercury.



The percentage of mercury is 69% of the all four heavy metals found in recycled papers, followed by chromium and lead with 16% and 15% respectively.

Treatments in paper: sulphates and chlorides

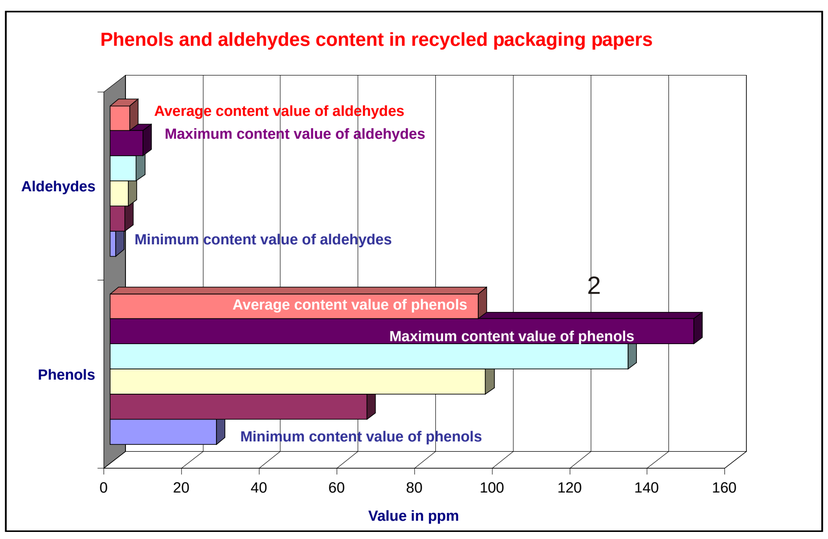


In order to know the corrosive properties of paper it is important to determine the sulphates and chlorides content.

The higher those values are the more corrosive the paper is.

Values up to 3.000 ppm in sulphates and 2.000 ppm in chlorides have been found in special packaging papers.

Odour in paper: phenols and aldehydes



The odour in paper is related to presence of several substances such as phenols and aldehydes.

Even if the amount of aldehydes is small (below 0,1 mg/dm), it is easy to detect.

The maximum amount of phenols not producing odour is approximately 30 ppm.

Methodology

The study has been carried out in 63 papers intended to be used in the packaging sector (paper for corrugated board - faces and fluting - and folding boards).
The methodology employed to determine the heavy metals content is recovered in the standards EN 12497 and EN 12498
The detection of phenols, aldehydes, sulphates and chlorides is done using spectrophotometric techniques.
The method to establish the degree of odour is explained in standard EN 1230-1

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