

# **New test finds diisobutyl phthalate in some cardboard food packaging -- recycling is the issue**

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A new test can identify take-away paper-based food containers (such as pizza boxes) that break phthalate safety rules. The phthalates (plasticisers) are present because the containers were made from pulp that contained at least some recycled paper and cardboard. In Italy, where the test was developed, this use of recycled paper and cardboard for food packaging breaks food safety rules.

Recycling paper and cardboard is a great goal, but it can have its problems. If the original paper is loaded with inks, adhesives and other substances, then these will be passed into the new recycled material. If that material is used to package food then the food could be exposed to the chemicals from recycling. One chemical of particular concern is diisobutyl phthalate (DIBP). This is commonly found in inks and other chemicals used in printing. It is potentially dangerous because it has a similar structure to androgenic hormones in the human body.

With take away pizzas, hot food is placed inside the cardboard box, and so there is a high chance that the food will be exposed to any volatile chemicals in the cardboard such as plasticisers as they will enter the headspace of the box. To avoid this contamination, the boxes should be made from unrecycled materials.

Working at the University of Milan, Italy, a team of scientists has developed a test that looks specifically at DIBP. In a paper published in

this week's edition of *Packaging Technology and Science*, the researchers report the analysis of boxes purchased from 16 different take-away restaurants in northern Italy.

They found that while some boxes exposed pizza to just over 7 micrograms of DIBP under test conditions, others gave exposure to over 40 micrograms and one to more than 70 micrograms of DIBP. This is a clear indication that the boxes had been manufactured using at least some recycled paper or cardboard.

'Our test can give a standardised measurement of the risk of exposure associated with individual types of boxes,' says lead author Monica Bononi.

'Safety is a key concern in the food industry, and regulations within Italian law help by setting standards for packaging. Our test could help monitor how well manufacturers are keeping to those standards,' says co-author Professor Fernando Tateo.

Source: Wiley/Blackwell

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