



P.O. Box 5774 • Elgin, IL • 60121-5774 • USA • (847) 622-2544 • www.rpta.org

Critical Analysis of Recent European Publications on Mineral Oil

The Recycled Paperboard Technical Association (RPTA) retained the firm of Keller and Heckman LLP (K&H) to conduct a critical analysis of recent publications on mineral oil consisting of two principle components, namely, mixtures of mineral oil saturated hydrocarbons (MOSH) and mixtures of mineral oil aromatic hydrocarbons (MOAH). This paper summarizes the key conclusions of Keller and Heckman's analysis.

Most importantly, K&H concludes that it would be premature to use the findings from the research publications to raise safety concerns or to serve as the basis for new regulations restricting recycled paperboard food packaging. Rather, the firm concludes that additional work is needed to understand the chemical identity and source of the hydrocarbons found in the studies and to develop better tools to measure them in food and packaging.

With respect to the safety concerns, K&H questions the researchers' use of a temporary safe exposure limit to MOSH. As the firm notes, the European food safety authorities have already established a safe exposure limit for a higher viscosity mineral oil which may contain significant levels of MOSH. Using this safe exposure limit and an approach previously used by the European food safety authorities, the firm calculates that the corresponding safe level for the MOSH would be 50 to 100 times higher than the level applied by the recent publications using the temporary value.

With respect to MOAH's safety, the firm notes that the chemical identities of the substances in the MOAH mixture are not sufficiently defined to permit a complete assessment at this time. Although MOAH has been identified as aromatic, other classes of aromatic compounds have potencies ranging over many orders of magnitude. Accordingly, a numeric safety level cannot be set based on the characteristic of aromaticity alone.

K&H notes that the analytical methodology used to measure MOSH and MOAH is still being developed, so it may improve. However at this point, there are several limitations in the measurements. First, the hydrocarbon categories are not clearly defined so the test method may identify substances as MOSH and MOAH, but which do not present a concern and are, in fact, lawfully used in food and food packaging applications in the European Union (and the United States). Second, the analytical method used by the researchers requires several processes that may distort the quantities actually present. Finally, the analytical work did not use sufficient controls to support the conclusions reached regarding the source of any detected MOSH and MOAH.

Please contact Amy Schaffer at aschaffer@rpta.org for further information.