

Declaration on the restricted use of

Mineral oils in printing inks and varnishes for packaging

Via food and food packaging, consumers are exposed to a wide range of mineral oils. These mineral oil hydrocarbons (MOH) may be used intentionally during the production of the food, or may unintentionally migrate into the food from packaging materials. The uptake of MOH is seen as a potential health hazard, as some saturated mineral oils (MOSH) may accumulate in human tissue, and some aromatic hydrocarbons (MOAH) may act as genotoxic carcinogens.

According to the EFSA “Scientific Opinion on Mineral Oil Hydrocarbons in Food” (EFSA Journal 2012; 10(6):2704), mineral oil hydrocarbons are present at different levels in nearly all foods. There are numerous sources, ranging from food additives, anti-dusting materials for grains or processing aids to additives in the manufacture of plastics, lubricants for can manufacture or MOH from recycled paper and board.

Findings of MOH in packed food have sometimes been linked to the use of inappropriate printing inks containing mineral oils. However, when using quality food contact material inks, the contribution of the ink to the mineral oil content in the food is negligible.

Food Packaging Inks

In the manufacture of all inks and varnishes supplied by Siegwirk¹ that are intended for food packaging, mineral oils or raw materials containing mineral oils, are not used as intentionally added ingredients.

In our comprehensive raw material introduction process, we request from our suppliers the disclosure of even minute amounts of mineral oils (MOSH and MOAH, in the range of C10-C35). This knowledge enables us to formulate our inks in a responsible way – without mineral oils. In very few cases, unavoidable traces of mineral oils may be part of an important raw material. We aim to keep all potential traces, if any, of these substances in our products below 0.1%. The presence, however, of minimal traces of mineral oils in the product coming from raw material impurities, from the process or as adventitious contaminant cannot be completely excluded.

MOSH and MOAH have to be unequivocally distinguished from “polyolefin oligomeric saturated hydrocarbons” (occasionally addressed as POSH). These are oligomers known to be potentially released from polyethylene and polypropylene food contact materials, which by coincidence have a similar analytical detection profile to

¹ Formal commitment is taken by Siegwirk companies in Europe.



MOSH in migration testing. Consequently, findings of POSH must not be mistaken for the migration of MOSH from packaging materials.

Non-Food Packaging Inks

In the manufacture of some inks and varnishes supplied by Siegwirk¹ for non-food packaging applications, for technical reasons the use of raw materials containing mineral oils cannot be entirely excluded. In general, a mineral oil content of 1% in the final ink is not exceeded.

However, the following exceptions need to be considered:

In the case of some metallic inks and pastes intended for non-food packaging applications there are today no suitable substitutes for the mineral oils used as grinding media for the metallic pigments. Therefore, these products are still available. Furthermore, mineral oils are used in some conventional sheet-fed FLUO inks and varnishes.

New regulatory activities in Germany and France

In **Germany**, the Federal Ministry of Food and Agriculture (BMEL) has announced on the 8th of March 2017 the 4th draft of the so called "Mineral Oil Ordinance (Mineralölverordnung)". The Ordinance affects manufacturers of Food Contact Materials (FCM's) based on recycled paper and obliges them to use a functional barrier in order to prevent the migration of Mineral Oil Aromatic Hydrocarbons (MOAH) into food. The detection limit is set at 0.5 mg/kg food for the total amount of MOAH (C16 – C35; originating only from recycled paper). The absence of a barrier is only accepted in special cases, e.g. the packaging contains no or very small amounts of MOAH or the migration is prevented by the FCM manufacturers by other means. A general threshold for the migration of MOAH from other contamination sources than recycled paper into food (e.g. lubricants) is not planned due to insufficient data so far. The BMEL refers in this case to the EU monitoring project on mineral oils in food and FCM's to be carried out in 2017 and 2018 (Commission Recommendation (EU) 2017/84).

In **France**, the ANSES (French Agency for Food, Environmental and Occupational Health & Safety) has published its opinion on the migration of mineral oil compounds into food from recycled paper and cardboard packaging. ANSES recommends the validation of the existing analytical methods in order to get a better chemical characterization of MOH mixtures. Moreover, additional toxicological studies should be carried out in order to propose a Toxicity Reference Value for the MOSH mixtures. In parallel, experts proposed the collection of more data on migration levels of MOHs in packed food and on residual MOH levels in recycled paper and cardboard packaging. Finally, ANSES strongly recommends to limit the consumer exposure to MOHs - and more particularly to MOAHs - by different ways, such as limiting the sources of MOHs in paper and board, optimizing the recycling process and lastly by using barriers to limit the migration of MOHs from packaging into the food. On the basis of the ANSES opinion, the French authorities (DGCCRF) have informed different stakeholders on their intention to continue the monitoring of mineral oil migration into food. They are going to act at the EU commission level for the implementation of a European regulation.