

Declaration on the restricted use of

Mineral oils in printing inks and varnishes

Consumers are exposed to a wide range of mineral oils via different routes. These mineral oil hydrocarbons (MOH) may be used intentionally during the production of food, or may unintentionally migrate into the food from packaging materials. Newspapers and other printed media entering the recycling chain are regarded as the main source of mineral oils in recycled paper and cardboard food packaging (Biedermann, M., Grob, K., *Eur Food Res Technol* **2010**, 230:785; Biedermann, M., *et al. Packag Technol Sci.* **2011**, 24(2):61). There are numerous other mineral oil sources, including food additives, anti-dusting materials for grains, processing aids, additives in the manufacture of plastics, and lubricants in the manufacture of cans.

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.

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 mineral oil content in food is negligible.

Inks intended for Nutrition, Pharma and Hygiene (NPH) Applications at Siegwerk

In the manufacture of all inks and varnishes supplied by Siegwerk¹ that are intended for NPH applications, 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. The presence, however, of minimal traces of mineral oils in the product coming from raw material impurities, or as an adventitious contaminant cannot be completely excluded. We aim to keep all potential traces of these substances in our products, if any, below 0.1%.

MOSH and MOAH have to be unequivocally distinguished from “polyolefin oligomeric saturated hydrocarbons” (occasionally addressed as POSH). These are oligomers known to potentially be released from polyethylene and polypropylene food contact materials, which by coincidence have a similar analytical detection profile to MOSH in migration testing. Consequently, findings of POSH must not be mistaken for the migration of MOSH from packaging materials.

¹ Formal commitment is taken by Siegwerk companies in Europe.



Inks intended for non-NPH Packaging and Print Media Applications

In the manufacture of inks and varnishes supplied by Siegwerk¹ for non-NPH and print media applications, the use of raw materials containing mineral oils cannot be entirely excluded for technical reasons. In general, a mineral oil content of 1% in the final ink will not be exceeded.

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

New regulatory activities in Germany and France

In **Germany**, on the 22nd of March 2021, the Federal Ministry of Food and Agriculture (BMEL) reported the latest draft of the so called "Mineral Oil Ordinance (Mineralölverordnung)" to the World Trade Organization. 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 in food or 0.15 mg/kg in food simulants 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. where the packaging contains no or very small amounts of MOAH, or migration is prevented by the FCM manufacturers by other means.

In **France**, *"the ban on the use of mineral oils in packaging, provided for in article 112 of law n° 2020-105 of February 10, 2020 (loi AGEC) relating to circular economy and the fight against waste, applies to mineral oils containing substances that interfere with the recycling of packaging waste or limit the subsequent use of recycled materials because of the risk that these substances pose to human health"*. The Décret n° 2020-1725 of December 29, 2020 specifies various adaptation provisions relating to extended producer responsibility (EPR). More specific information regarding how packaging and ink producers can remain compliant with this Décret have not yet been published. An "Arrêté" from the Minister for the Environment is still being discussed at the French Authority level, which should detail the substances concerned and the applicable accepted thresholds. Until this "Arrêté" has been published, nobody can confirm whether or not they comply with the Décret.

Siegwerk would like to take the opportunity to note that a ban on mineral oils does not mean that inks and varnishes need to be vegetable oil-based in order to meet the French law requirements. Vegetable oil-based inks are a specific class of inks, only relevant for conventional offset printing, and not a general option for all printers. Vegetable oil-based inks may be in particular cases the preferred ink technology, but should not be linked to the article 112 of law n° 2020-105 of February 10, 2020 (loi AGEC).

The information in this document reflects Siegwerk's policy and commitments. This statement is valid without signature.