

## MOSH/MOAH Article Questioned

### Dear Editor,

The article by Andre Adam of Fragol [July 2017] appears to disregard the following reports [listed below] by EFSA by EFSA and others on MOSH and MOAH. To state that certain levels are considered safe flies in the face of the recommendations by EFSA and also the current "Motion for a Resolution" going through the European Parliament.

Stating that aromatic structures (MOAH) are nonmutagenic and noncarcinogenic entirely contradicts what the European Food Safety Authority are stating. It does not warn your readers either about the blanket ban on MOAH and limitations that will be placed on MOSH when this legislation is enacted.

- Motion before European Parliament: [www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+MOTION+B8-2016-0411+0+DOC+XML+V0//EN](http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+MOTION+B8-2016-0411+0+DOC+XML+V0//EN)
- "Scientific Opinion on Mineral Oil Hydrocarbons in Food": [www.contactalimentaire.com/fileadmin/ImageFichier\\_Archive/contact\\_alimentaire/Fichiers\\_Documents/Avis\\_de\\_AESA/Scientific\\_Opinion\\_on\\_Mineral\\_Oil\\_Hydrocarbons\\_in\\_Food\\_-\\_EFSA\\_journal\\_2012\\_\\_10\\_6\\_\\_2704.pdf](http://www.contactalimentaire.com/fileadmin/ImageFichier_Archive/contact_alimentaire/Fichiers_Documents/Avis_de_AESA/Scientific_Opinion_on_Mineral_Oil_Hydrocarbons_in_Food_-_EFSA_journal_2012__10_6__2704.pdf)

**Charles Brunton**

Specialist Lubricants Ltd.

### Andre Adam Responds:

The EFSA document cited by Mr. Brunton, "Scientific Opinion on Mineral Oil Hydrocarbons in Food," clearly allows MOH to be used in food as an additive. It is a large document but worth reviewing. Food grade lubricants are for Incidental Food Contact (H1) and are not supposed to come into contact with food. As stated on page 144, "All MOH mixtures are mutagenic unless they are treated specifically to remove MOAH. The mutagenicity of MOH is caused mainly by 3-7 ring MOAH, including alkylated polycyclic aromatic hydrocarbons (PAHs) and non-alkylated PAHs."

Therefore, mineral oil refinement is specifically designed to remove the 3-7 ring MOAH structures, which include naked and alkylated species. These are not only PAH but also include PAC, which are similar ring structures but with S or N atoms in the rings.

MOAH remains after removal of the 3-7 rings, but this MOAH comprises highly alkylated aromatic structures, mostly 1-2 rings, with very long alkyl chains. Because of their unique structure, they are not bio-activated to reactive species and, thus, are not mutagenic or carcinogenic.

To achieve H1 lubricant quality, a second purification step is needed after solvent extraction, which is hydrogenation. This step saturates those aromatic 1-2 ring structures, effectively converting an aromatic ring into a cyclo-alkane ring.

If MOSH is of concern, then EFSA would not approve its

use as a food additive to be used directly in food, not just for "incidental food contact." See:

- [onlinelibrary.wiley.com/doi/10.2903/j.efsa.2009.1387/full](http://onlinelibrary.wiley.com/doi/10.2903/j.efsa.2009.1387/full)
- [onlinelibrary.wiley.com/doi/10.2903/j.efsa.2013.3073/abstract](http://onlinelibrary.wiley.com/doi/10.2903/j.efsa.2013.3073/abstract)

Regarding the motion before Parliament: It is supported by NGOs such as Foodwatch, who are concerned and confused about MOSH and MOAH. The points behind the motion are factually wrong and reflect scientific inaccuracy. Also, the fact that there is a motion does not mean that it will become law.

The EU Commission supports a more credible and realistic initiative on monitoring MOSH and MOAH in food. And CONCAWE has written a position paper on this proposal that can be found at [www.concawe.eu/wp-content/uploads/2017/01/concawe-response-eu-com-moh-monitoring-final-draft-003.pdf](http://www.concawe.eu/wp-content/uploads/2017/01/concawe-response-eu-com-moh-monitoring-final-draft-003.pdf). It puts things into perspective and explains the science behind the proposal.

Mineral oils have a legal status for use in certain applications, including food and pharmaceuticals. It is time we end the MOSH and MOAH myth. CONCAWE is working hard to present evidence to regulators to help end the confusion and provide sound explanations.

**Andre Adam**

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