



## **Bisphenol F in mustard: adverse effects on health due to the measured BPF concentrations are unlikely**

BfR Opinion no. 044/2015, 8 June 2015

Bisphenol F (BPF) has been detected in mustard. Contrary to initial suspicions, however, the bisphenol F does not come from food packaging materials but is probably created during the production process from glucosinabin, a naturally occurring substance in white mustard. Toxicological analysis of the mode of action of BPF indicates that the substance has an effect on the hormonal system.

The Federal Institute for Risk Assessment (BfR) has assessed the health risk to consumers due to the presence of BPF in mustard. There is, however, a lack of important toxicological data on BPF for a conclusive health risk assessment. To date, no health-related guidance value has been derived for BPF for a tolerable intake that can be ingested daily over the course of a lifetime without any risk to health. The chemical structure of BPF is similar to that of the toxicologically well-characterized substance bisphenol A (BPA). Toxicokinetic studies and analysis of the mode of action of BPF suggest a similar risk potential to that of BPA. Due to the lack of toxicological data, the BfR therefore uses the temporary tolerable daily intake (t-TDI) for BPA of 4 micrograms ( $\mu\text{g}$ ) per kilogram of body weight and day derived by the European Food Safety Authority (EFSA) as an indirect criterion for the health assessment of BPF.

The BfR bases its assessment on data on BPF content in mustard submitted by the food monitoring authorities of one federal state within the framework of the analysis of food products. A risk assessment for "high consumers" with a daily consumption amount of 4 g of mustard shows that, even with the highest concentrations measured in mustard of approx. 6,200  $\mu\text{g}$  BPF per kilogram of mustard, intake is around ten times lower than the tolerable daily intake of 4 micrograms per kilogram of body weight and day. In the case of "normal consumers" (daily mustard consumption of 0.9 g) and the measured average BPF level in mustard, intake is more than 100 times below the tolerable daily intake. From the point of view of the BfR, therefore, the occurrence of undesirable effects on health due to BPF in mustard is unlikely. At the same time, however, the BfR points out that there is still insufficient data for a conclusive assessment, in particular with regard to toxicological data on possible hormonal effects of BPF following prenatal exposure as well as data on BPF intake via other foods or other sources such as house dust.

		BfR Risk Profile: Bisphenol F in Mustard (Opinion no. 044/2015)			
A Affected group	General population 				
B Probability of health impairment due to BPF in mustard	Practically impossible	<b>Improbable</b>	Possible	Probable	Certain
C Severity of health impairment due to BPF in mustard	<b>No Impairment</b>	Slight impairment [reversible/irreversible]	Moderate impairment [reversible]	Serious impairment [reversible/irreversible]	
D Validity of available data	High: the most important data is available and there are no contradictions		Medium: some important data is missing or contradictory	<b>Low: much important data is missing or contradictory</b>	
E Controllability by the consumer [1]	<b>Control not Necessary</b>	Controllable through precautionary measures	Controllable through avoidance	Not controllable	

Text fields with dark blue background highlighting characterise the properties of the risk assessed in this Opinion (for more details, please see the text of Opinion no. 044/2015 of the BfR dated 8 June 2015).

**Notes**

The Risk Profile is designed to visualise the risk described in the BfR Opinion. It is not designed to permit risk comparisons. The Risk Profile should only be read together with the Opinion.

**[1] – Line E - Controllability by the consumer**

The details in the line "Controllability by the consumer" are not designed to serve as a recommendation by the BfR but are of descriptive character.

FEDERAL INSTITUTE FOR RISK ASSESSMENT (BfR)

The full version of this BfR Information is available in German on <http://www.bfr.bund.de/cm/343/bisphenol-f-in-senf-das-auftreten-von-unerwuenschten-wirkungen-auf-die-gesundheit-durch-gemessene-bpf-gehalte-ist-unwahrscheinlich.pdf>

**About the BfR**

The Federal Institute for Risk Assessment (BfR) is a scientifically independent institution within the portfolio of the Federal Ministry of Food and Agriculture (BMEL) in Germany. It advises the Federal Government and Federal Laender on questions of food, chemical and product safety. The BfR conducts its own research on topics that are closely linked to its assessment tasks.

This text version is a translation of the original German text which is the only legally binding version.