

The Facts about the Use of Fluorinated Chemicals in Food Packaging Materials



Overview

There has been some recent media attention on the use of fluorinated chemicals in fast food wrappers and takeout containers. This attention is misplaced, as the U.S. Food and Drug Administration (FDA) conducts a thorough review of these chemistries before they are accepted for use in food packaging materials. FDA has determined that the fluorinated chemistries currently used in food packaging are safe for their intended use. Unfortunately, there are a number of misperceptions about the fluorinated chemistries (most accurately termed per- and polyfluoroalkyl substances or PFASs) used in food packaging. The FluoroCouncil addresses some of these misperceptions below.

Facts about Fluorinated Chemistries in Food Packaging

MISPERCEPTION: *It is necessary to prohibit the use of the entire class of fluorinated chemistries in food packaging materials.*

FACT: Only a very small subset of fluorinated chemicals are used in food packaging. Thus AB 958 is unnecessarily broad.

MISPERCEPTION: *Fluorinated chemicals should not be allowed in food packaging materials because they are dangerous to public health and the environment.*

FACT: The limited number of PFAS chemicals used in food packaging are not “dangerous” to the public and the environment. In fact, FDA has determined that the PFASs used in food packaging are safe for their intended use. Under federal law, FDA cannot allow a chemical to be used for food contact purposes unless it determines that there is sufficient scientific data to demonstrate that the substance is safe for its intended use in food packaging. FDA defines “safe” as reasonable certainty of no harm. To meet this high standard, FDA requires that chemical manufacturers submit extensive test data and scientific information prior to allowing for use of the substance.

MISPERCEPTION: *PFASs, which include the notorious cancer-causing chemical (PFOA) formerly used to make PTFE, are widely used in food wrappers to stop the spread of grease. Scientific studies have also linked PFAS exposure to thyroid disease, developmental issues, reproductive harm, weakened immune systems and low birth weight in children, among other health effects.*

FACT: Only a limited number of FDA-accepted PFAS substances are allowed to be used in food packaging. The health effects cited here are associated with “long-chain” fluorinated chemicals, such as PFOA. Any use of “long-chain” fluorinated chemicals, such as PFOA, have been phased out of food packaging in the U.S. as of January 2016; therefore, they are not relevant for current food packaging materials. Studies reviewed by regulatory authorities demonstrate that the current fluorinated products used in food packaging are not associated with these health effects and are safe for their intended use.

MISPERCEPTION: *A recent study published in Environmental Science & Technology Letters claimed that 40 percent of fast food wrappers tested nationwide likely contained PFASs. The study also indicated that some food packaging contained traces of PFOA.*

FACT: The researchers on this study tested the materials for fluorine, not PFASs. Therefore, this study, in fact, did not find that 40 percent of fast food wrappers likely contain PFASs. Instead, this study demonstrates that fluorine is not a reliable indicator for PFASs. Nevertheless, because FDA has approved some PFASs for food contact applications, we would expect to find PFASs in some food packaging. Moreover, the reported detection of PFOA in some tested samples is not unexpected because the study is based on samples that were collected in 2014 and 2015 – prior to the industry phase out and FDA revocation of the use of long-chain substances (e.g., PFOA) for food packaging.

MISPERCEPTION: *We have known about the dangers of fluorinated chemicals for over a decade. These chemicals can be dangerous even at low doses. These chemicals are included in food packaging used by children, so we are putting our children at risk.*

FACT: The world of “fluorinated chemicals” is very broad and diverse, including substances used in health care, food contact applications, aerospace, chemical processing, building construction, automotive, electronics, energy, environmental protection, outdoor & technical apparel, and countless other high value applications. Not all “fluorinated chemicals” are equal, just as not all carbon-containing chemicals are equal. A diamond is carbon-based, as is a chunk of coal, but no one would consider these two to be equivalent in value or inherent hazard. The fluorinated products currently used in food packaging have been thoroughly reviewed by FDA, which has determined they are safe for their intended use. If FDA determined that the available data no longer support the conclusion that these PFASs are safe for their intended use in food contact materials, FDA can revoke its acceptance of the substance for food contact use.

MISPERCEPTION: *“Short chain” PFASs are less effective than “long-chain” PFASs in sealing food packaging, prompting manufacturers to use more of them in coating their products.*

FACT: Compared to long-chain products, today’s PFASs provide equivalent performance and generally do not require the use of larger quantities. Today’s fluorinated chemistry application rates are typically similar or reduced compared to older, long-chain chemistries.

MISPERCEPTION: *We are uncertain of the health and safety effects of the fluorinated chemicals that have replaced the older chemicals that were phased out. In fact, DuPont has disclosed to the Environmental Protection Agency that one replacement chemical (Gen X) caused cancer in lab animals.*

FACTS: The new generation of PFASs has been rigorously studied (see list of references at <https://fluorocouncil.com/health-environment/scientific-studies/>). Today’s short-chain products have significantly improved health and safety profiles compared to the previous long-chain products.

The DuPont chemical referenced is only used in industrial applications in the manufacture of polymers. It has a very different chemistry that is not used in food packaging. This further supports the point that the bill is unnecessarily broad.

In the case of PFASs used for food packaging, which is the subject of AB 958, FDA has conducted a thorough scientific review of each individual chemical and determined that each is safe for its intended use. This assurance from the leading national expert agency on food safety should provide confidence to the public that the PFAS substances currently used in food packaging are not a threat to their health. The across-the-board ban set forth in AB 958 is grounded on an assumption that no fluorinated chemical can be used safely in food packaging, a conclusion that is fundamentally inconsistent with the scientific evidence evaluated by FDA.

MISPERCEPTION: *A study (Perez et al) done on human cadavers demonstrates that human tissue accumulates the short-chains, which are not fully expelled from the human body.*

FACTS: The Perez et al study involved analysis of samples from human cadavers for certain PFASs, including short chains such as PFBA and PFHxA, and long chains such as PFOA. According to accepted regulatory criteria, PFBA and PFHxA are not bioaccumulative, whereas PFOA is.

In addition, the study suffers from a number of shortcomings and can best be described as an anomaly. Specifically:

- It is necessary to “validate” an analytical method to ensure it is reliable and produces accurate and reproducible results. Validation should be done in tissues the same as those for which the analytical method is intended to be used. However, the Perez et al. lab used pig tissue instead of the human tissue in their validation.
- The Perez et al reported data has internal inconsistencies and variability and is inconsistent with other published data in this area.
- The researchers did not indicate whether blood was flushed from the organs, making it impossible to determine if the chemical had actually accumulated in any of the tested organs rather than simply being present in the blood.

Aside from the deeply flawed Perez et al study, there is no data indicating that PFHxA accumulates in human tissue. See, for example, Gannon (2011) Toxicology v283 pp55-62, which concludes the data “strongly suggests that humans rapidly eliminate PFHxA similarly to rats and mice.”

MISPERCEPTION: *The heat from cooked food could cause fluorinated chemicals to leach out of their wrappers. These chemicals do not break down in the environment, and they may cause adverse health effects.*

FACTS: Chemical manufacturers are required by FDA to submit extensive test data and scientific information regarding the levels of impurities that may be released from the food contact substance under intended conditions of use, including cooking conditions. FDA also closely examines the potential dietary concentrations of those substances. Therefore, FDA has carefully considered this information in determining that the PFASs accepted for use in food packaging are safe for their intended use, under intended cooking conditions.

MISPERCEPTION: *Non-fluorinated alternatives are available for food packaging materials.*

FACTS: Food packagers select packaging materials that are FDA approved and fit for use in their intended application. Some food packaging is not intended to provide oil- and grease-resistance, while others are intended to do so. In other words, all food packaging does not provide the same performance properties. Non-fluorinated alternatives have not been found to provide comparable performance properties provided by PFASs. In addition, many other alternatives can prevent the packaging from being recycled or from being compostable.

MISPERCEPTION: *For consumers, exposure to fluorinated chemicals in food wrappers can be reduced by eating fresh foods and preparing meals at home. Avoid the use of paper tableware and microwave popcorn.*

FACT: FDA-approved food contact materials, such as PFASs in food packaging, were determined to be safe for their intended use. Therefore, they were found to pose no consumer risk when used as intended. The remainder of this recommendation reflects a general opinion about dietary health.

For more information about the use of fluorinated chemistries in food packaging, please visit www.fluorocouncil.org