

Per- and polyfluoroalkyl substances (PFAS) represent a broad base of chemicals, traditionally used in a range of consumer and industrial applications for collective ability to resist grease, water, oil and heat. The PFAS group includes chemicals such as perfluorooctanoic acid (PFOA), perfluorooctanesulfonic acid (PFOS) and more than 7,800 other chemical compositions.

A group of PFAS that has been a primary focus of public and regulatory concern include perfluoro-octanoic acid (PFOA), perfluoro-octane sulfonate (PFOS), perfluoro-alkyl phosphate esters (PAPs), perfluoroalkyl carboxylic acids (PFCAs) or perfluoroalkyl sulfonates (PFSAs). While these specific PFAS classes are believed to be more persistent within the broader environment, they are generally not added in current production process for packaging, labels or other supplier components.

Due to decades of PFAS inputs to support a range of consumer products and industrial facing applications, the PFAS chemical class can be found and measured in municipal water sources, soil and groundwater reservoirs, recycling, solid waste, and in even in blood samples. It is ever present within the environment due to its inability to breakdown over time.

### **Industry Exposure**

For the tag and label industry, the PFAS chemical class may be found in in printing inks, where it had been earlier utilized for its strong rub resistance effects. Rising concerns about their sustainability profiles and regulatory restrictions are increasing the need for PFAS-free alternatives, which have been developed over the past several years, and continue to enter the marketplace and manufacturing supply chains.

TLMI members should be aware that PFAS compounds have also been found in primary packaging that accompany a variety of labels and similar package components. Most notably, HDPE plastic, for those containers using an in-mold fluorination process.

PFAS may also be present in certain flexible packaging and are broadly referred to as fluoroelastomers. This PFAS application is used to improve runnability for the production of film.

### **Legislative and Regulatory PFAS Guidelines and Restrictions**

Sixteen states (with more PFAS restrictions anticipated to be approved in 2024) have banned PFAS' use in food packaging or some personal care products, with other states routinely considering similar legislation.

PFAS has also received increased levels of regulatory action and scrutiny by the U.S. Environmental Protection Agency and other U.S. regulatory bodies. Exemplifying this effort is a requirement under the EPA's Toxic Substances Control Act (TSCA), directing all manufacturers and importers of PFAS and PFAS-containing articles to report information related to chemical identity, uses, volumes made and processed, byproducts, environmental and health effects, worker exposure, and disposal to EPA.

Globally, the European Union, United Kingdom, Canada and Australia have also implemented some PFAS restrictions, and all continue to study its use in the marketplace.