PPG Powder Coatings

# Frequently Asked Question (FAQ): PFAS

## What is PFAS?

a. Perfluoroalkyl substances or *PFAS are widely used, long lasting chemicals that either break down extremely slowly or do not have an environmental half-life at all break down very slowly over time**.
They are the "forever chemical"
*www.epa.gov/pfas/pfas-explained

b. They are synthetic compounds that uniquely exhibit both hydrophobic and hydrophilic properties. This dual nature makes them highly stable and effective at repelling water, oil and stains, due in part to their lipophobicity. Their ability to be both water-repellent and water-attracting contributes to their widespread use as stain protectors, although it also makes them difficult to eradicate from the environment, where they may persist and contaminate water supplies

c. The **C-F Bond** is what makes this extremely strong and "forever." Fluorine is an extremely stable element for a variety of reasons including high electronegativity and small size of the atom

## Where to find them?

a. **Drinking water:**
public water systems and private drinking wells

b. **Soil/water at/near waste sites:**
landfills, disposal sites and hazardous waste sites, including those under the federal Superfund and Resource Conservation and Recovery Act programs

c. **Fire extinguishing foam:**
aqueous film-forming foams (or AFFFs) used to extinguish flammable liquid-based fires, which are used in emergency response events at airports, shipyards, military bases, firefighting training facilities, chemical plants and refineries

d. **Manufacturing or chemical production facilities:**
chrome plating, electronics and certain textile/paper manufacturers

e. **Food:**
fish caught in PFAS-contaminated water or dairy from livestock exposed to PFAS

f. **Food packaging:**
grease-resistant paper, fast food containers/wrappers, microwave popcorn bags, pizza boxes and candy wrappers

g. **Household products and dust:**
stain and water repellents used on carpets, upholstery, clothing, other fabrics, cleaning products, non-stick cookware, paints, varnishes, sealants

h. **Personal care products:**
shampoo, dental floss and cosmetics

i. **Biosolids:**
fertilizer from wastewater treatment plants that is used on agricultural lands can affect ground and surface water/animals that graze on the land

**PFAS concerns have been around since 2006:**

Environmental Protection Agency (EPA) PFOA Stewardship Program

- Goal was to cease the manufacture and use of PFOS and PFOA fluorosurfactants
- Some companies have announced bans, including material suppliers
- Regulation activities in USA or EMEA
- For USA, look at EPA and specifically for your state where the product is made
- Trade organizations are staying in front of regulations and updates

| Category | Definition | PFAS Examples |
|---|---|---|
| (1) Non-essential | Uses that are not essential for health and safety, and the functioning of society. | Most consumer textiles, cosmetics, ski waxes |
| (2) Substitutable | Uses regarded as essential because they perform important societal functions, but where alternatives have been developed so that those uses are no longer essential | Firefighting foams, floor coverings |
| (3) Essential* | Uses considered essential because they are necessary for health or safety or other highly important purposes and for which alternatives are not yet in place | Certain medical devices, occupational protective clothing |

*Essentiality should never be considered permanent; rather, a constant pressure is needed to search for alternatives and to move these uses into the substitutable category.

Table from PFAS Science Pane
www.pfassciencepanel.org/essential-use-project