PFAS & FLUOROPOYLMERS

FAQS ON PIPE, VALVES, AND FITTINGS

What are PFAS?

- Broadly, PFAS, Per- and Polyfluoroalkyl substances are a class of molecules that contain a carbon-fluorine bond.
- For regulatory purposes, ***PFAS of Concern*** are a specific subset of molecules that are small in size, water soluble, and contain carbon-fluorine bonds.

What is a Fluoropolymer?

- A fluoropolymer is a large molecule that is insoluble in water and contains carbon-fluorine bonds.
- Fluoropolymers are **not** the same materials as the ***PFAS of Concern***.

Where do we find *PFAS of Concern*?

- They are in water-proof coatings for outdoor clothing and furniture, stain repellant for clothing and furniture, cosmetics, ski wax, adhesives and grout, paint, pesticides, cookware, food packaging, and paint/varnish.

Where do we find Fluoropolymers?

- Fluoropolymers like PVDF, ECTFE, FKM and FFKM are found in lithium batteries, automobiles, pharma/medical equipment, semiconductors, electronics, renewable energy, and chemical manufacturing.
- Fluoropolymers are used to make chemically-resistant pressure pipe, valves, seals, and gaskets.

Are there PFAS of Concern in Asahi/America products?

According to resin manufactures, there are no ***PFAS of Concern*** in the fluoropolymer resins in Asahi/America products such as, Super Proline® PVDF, Ultra Proline® ECTFE, or FKM/FFKM fluoroelastomers.

Can a fluoropolymer be "broken down" into a PFAS of Concern?

There are no natural chemical process that can break the fluoropolymers used in pipes, valves, seals, and gaskets into a ***PFAS of Concern***.

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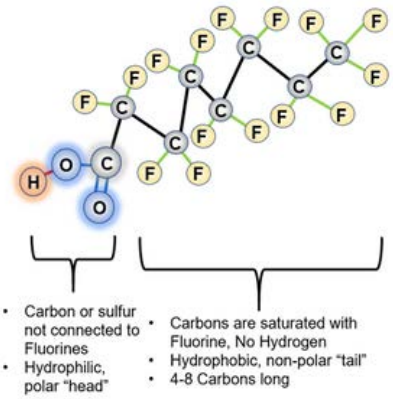
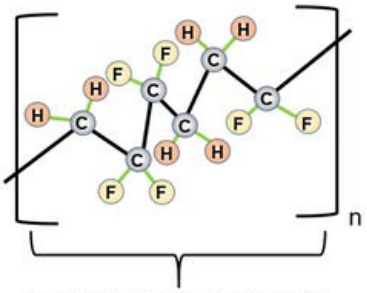
Material Comparison

Properties	PFAS	Fluoropolymers
Pipe, valves, seals	No	Yes
Molecular Size (# of C)	4 - 8	> 100,000
Hydrophilic Head	Yes	No
Water Soluble	Yes	No
Contains Carbon-Fluorine Bond	Yes	Yes
Molecule Breakdown	 • Carbon or sulfur not connected to Fluorines • Hydrophilic, polar "head" • Carbons are saturated with Fluorine, No Hydrogen • Hydrophobic, non-polar "tail" • 4-8 Carbons long	 • The Carbons may not be saturated with Fluorines and may contain other elements. • No hydrophilic head containing Oxygen or Sulfur atoms • Big molecules, n >100,000

Where can I find more information?

- **Environmental Protection Agency (EPA)** https://www.epa.gov/pfas
- **Plastic Pipe Institute** PPI "Statement AA 2024a" https://www.plasticpipe.org/PPI-Home/PPI-Home/ALL-PPI-PUB/Recommendations---Statements.aspx
- **Asahi/America Technical Services** can assist with product documentation of ***PFAS of Concern***. Please reach out to our Technical Services department at 1-800-343-3618 or asahi@asahi-america.com for more information.

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