

Storage of PFAS Certified Reference Standards

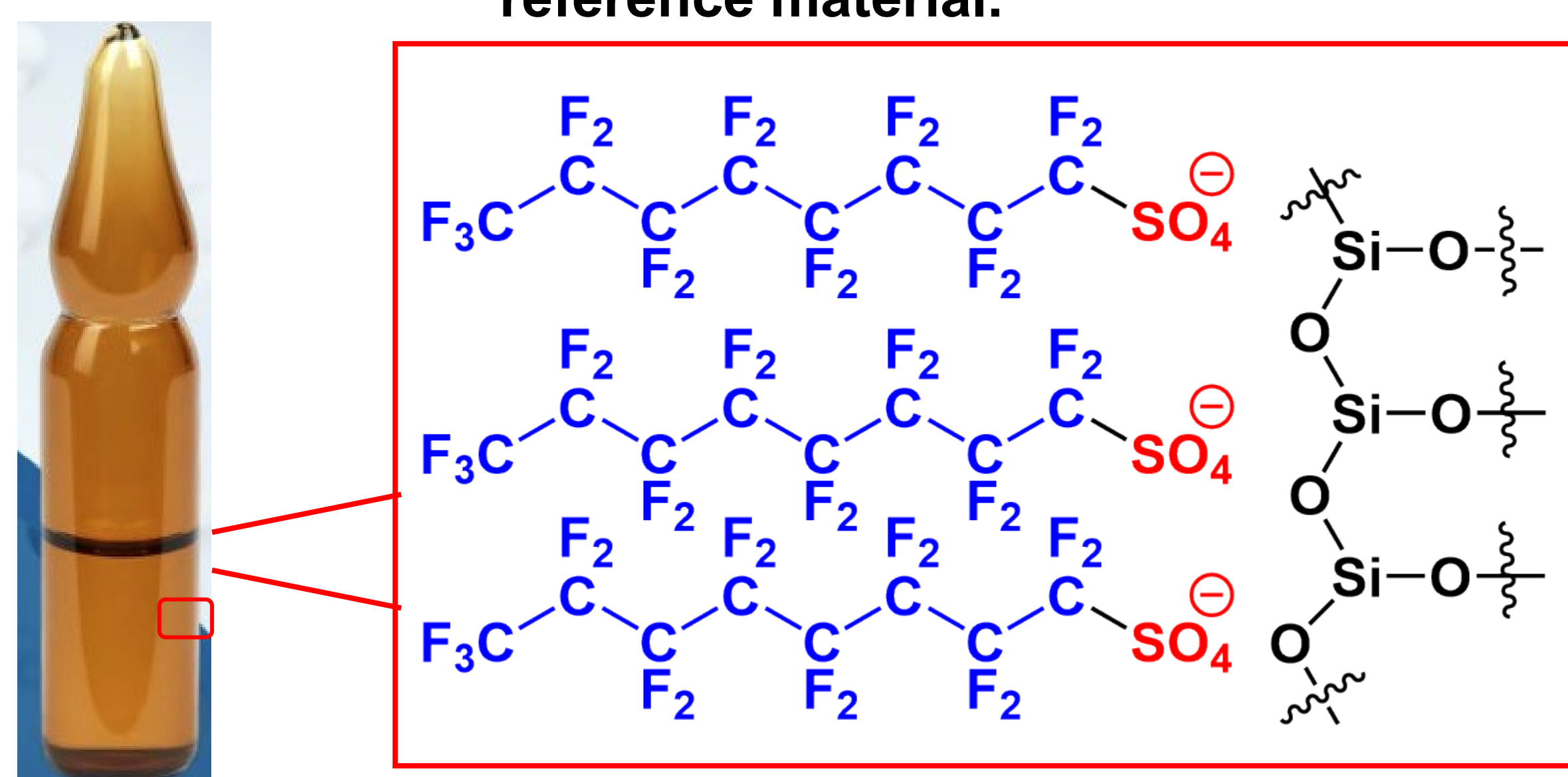
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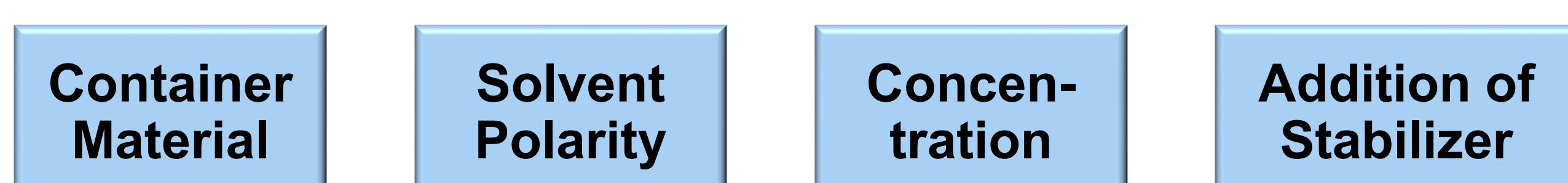
Background

The ability of PFAS to adsorb onto the surface of a container can significantly impact the stability and accuracy of PFAS certified reference material.

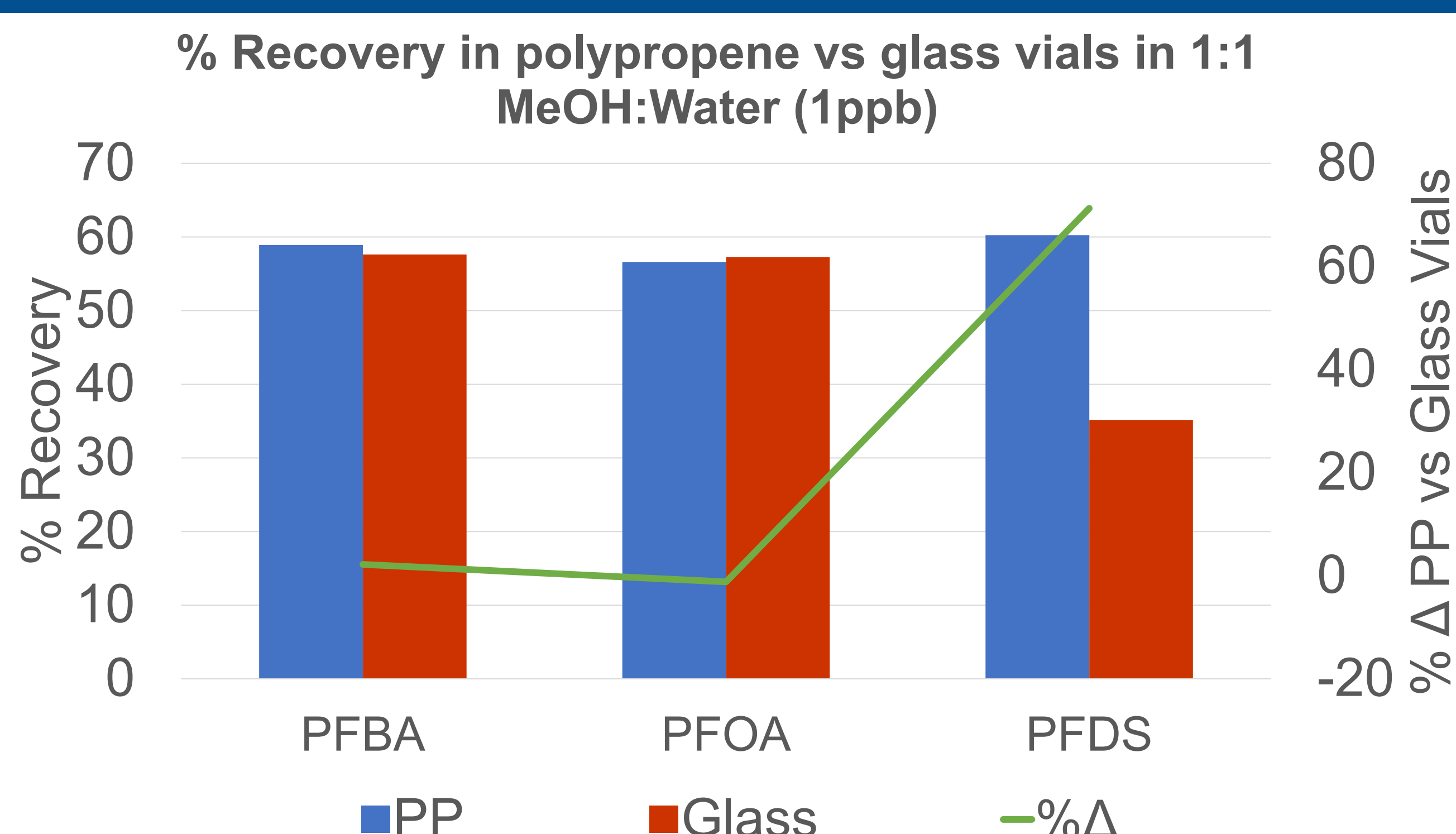


Highly fluorophilic tail interacts strongly with other molecules of fluorinated surfactant
Highly Polar end-group interacts strongly with polar solvents or substrates

The stability and adsorption of a PFAS CRM can be improved by modification of four key parameters:

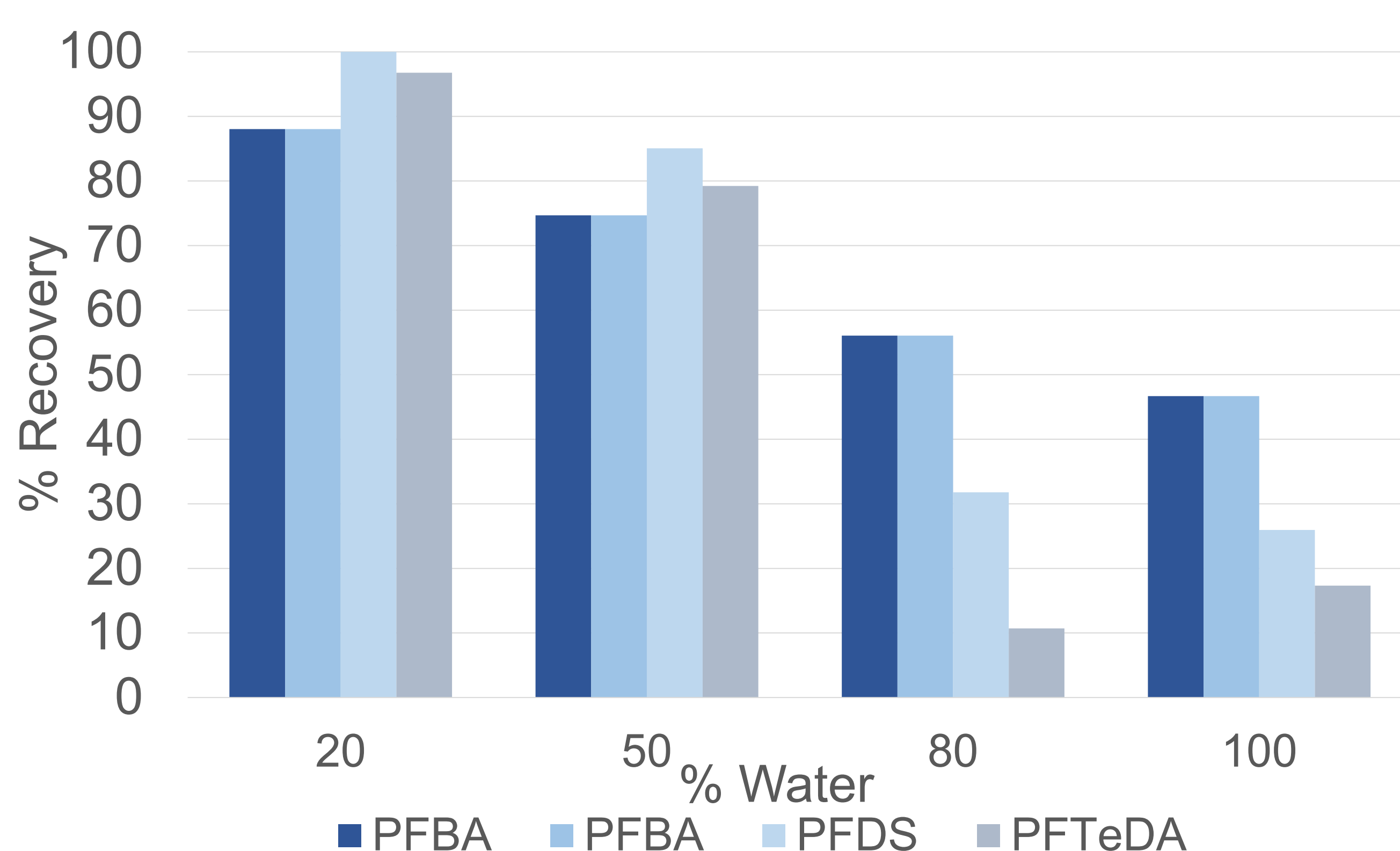


Container Material



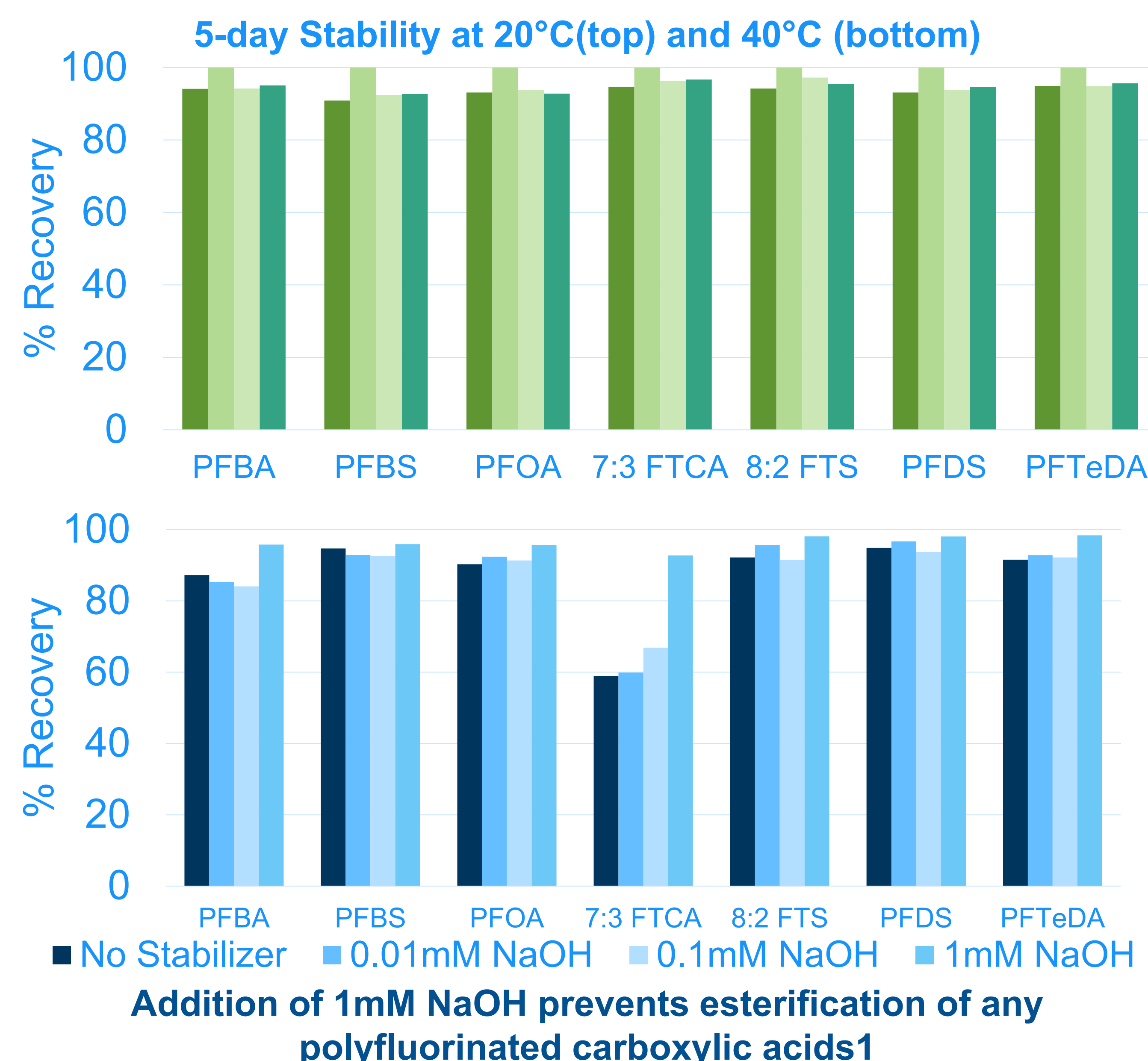
- Adsorption was observed in all container materials tested
- Effects are enhanced by chain-length

Solvent Polarity



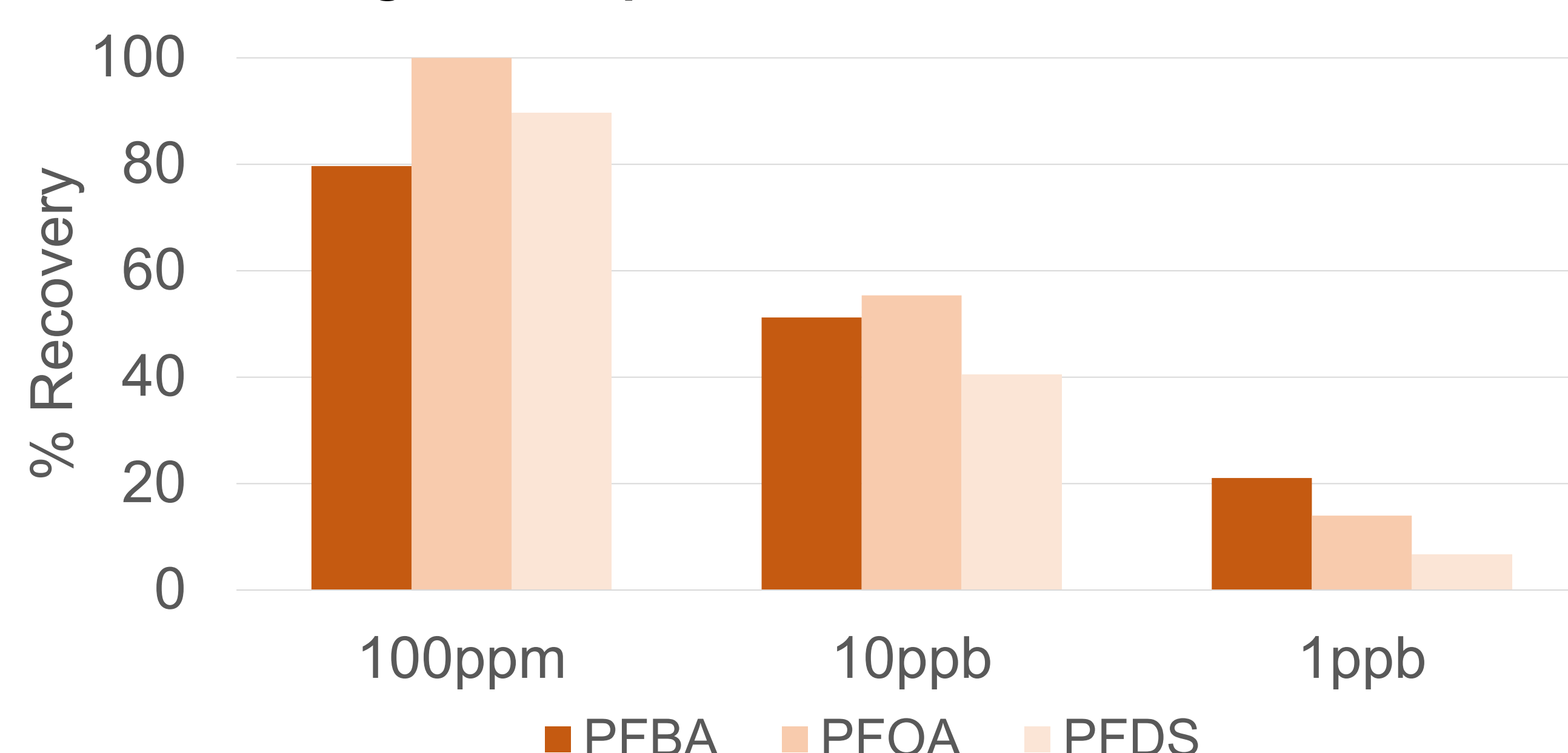
- Increasing the % water in a methanol:water mixture increases the adsorption of PFAS onto glassware
- The chain-length of the PFAS greatly enhances this solvent effect

Addition of Stabilizer



Concentration

As the concentration of the standard is decreased, adsorption has a greater impact on solution concentration



Stressed Stability Study



- Store solutions in more non-polar solvents (methanol or IPA instead of water)
- Store solutions at as high a concentration as possible
- Avoid multiple dilutions into secondary containers
- Addition of more base is not necessary for long-term storage of standards
- Avoid storage in acidic conditions