# PFA Removal

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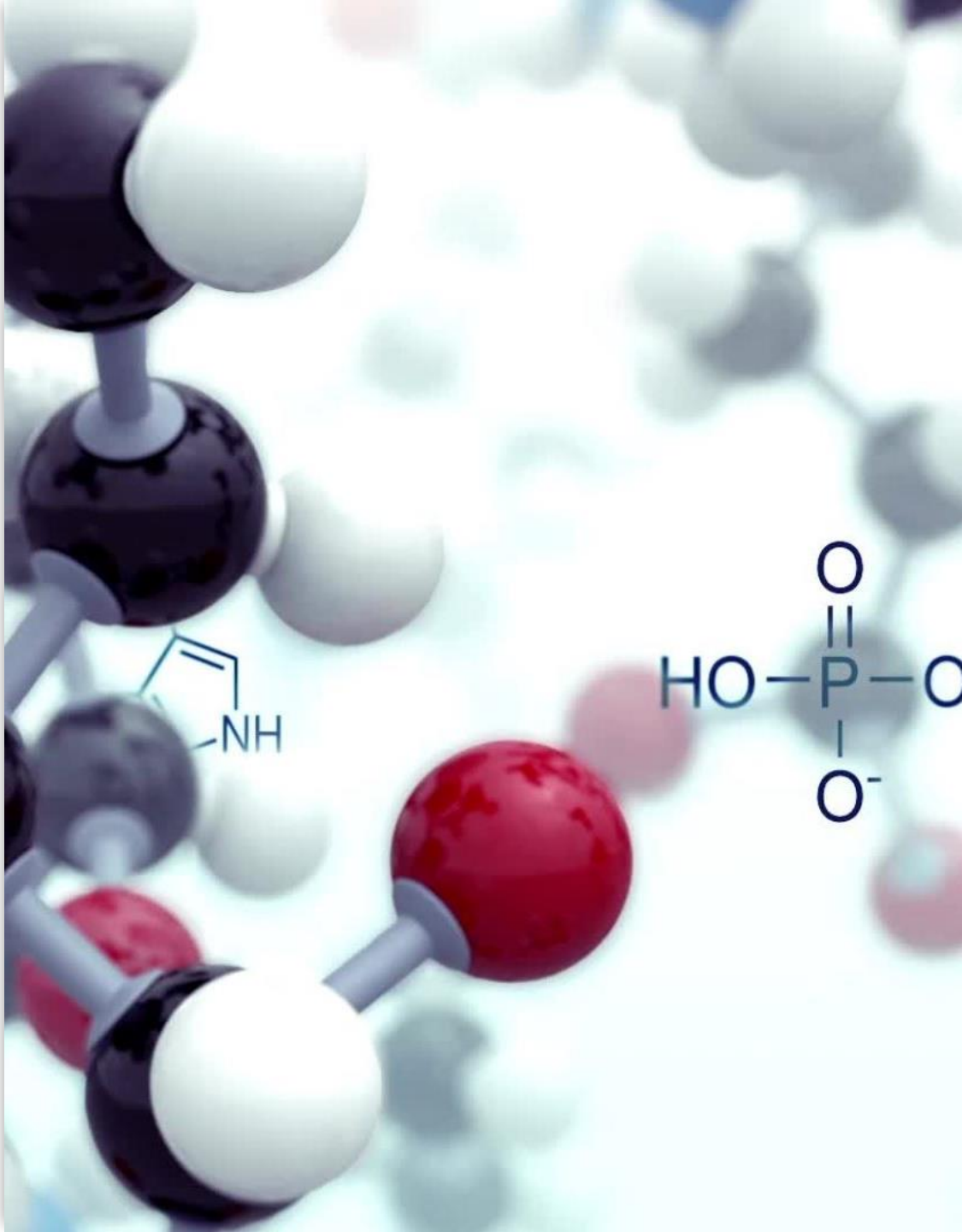
# What are PFAs?

PFAs or forever chemicals (per-polyfluoroalkyl) are synthetic chemicals mainly used to make non-stick surfaces. They are made up of carbon and fluorine bonds, one of the strongest natural chemical bonds, making it really hard to remove them from the environment?



# So how do we remove them?

There are a few ways to remove PFAs from the environment, most notably:

- Granulated activated carbon (GAC), traps the PFAs in the pores of activated carbon.
- Ion exchange resins (IX resins), the specialized resin sites bind to the PFAs via ionic interactions.
- Reverse Osmosis (RO), pressurizes water to push it through a membrane that is too large for PFAs to go through.
- The Guillotine (DMSO+ lye), takes advantage of the fact that the PFAs have a reactive head made of oxygen, creating a reaction that splits the carbon atoms off the PFA, creating fluoride (often added to water to prevent tooth decay), carbon dioxide and formic acid (which is non harmful)

# What is my plan?

My plan is to use some of the previously mentioned methods to separate the water and PFAs, then destroy the PFAs through the Guillotine process.