

Perfluorooctanoic acid

- Melting point ~ 55 °C, boiling point ~ 190 °C, $pK_a \sim 2.5$, sparingly soluble in water and polar organic solvents
- Stable at normal temperatures and pressures but avoid contact with strong oxidizing or reducing agents, strong bases and heat
- PPE = splash resistant safety goggles, lab coat, gloves and proper ventilation
- It does not biodegrade in the environment
- Is found at very low levels (ppb / ppt) both in the environment and in the blood of the general population
- Causes developmental and other adverse effects in laboratory animals.
- Flammable and forms hazardous products like HF and CO on combustion



Perfluorooctanoic acid

- It concentrates on water surfaces as it is a fluoro-surfactant
- Used as a fluoro-surfactant, a reactive intermediate in the production of fluoroacrylic esters and fluoropolymers (PTFE and PVDF)
- Main source of leakage to the environment - fluorotelomers used in food packaging
- DuPont paid \$16.5 M in fines + supplements to EPA in response to "widespread contamination" of PFOA near the Parkersburg, WV
- Eight companies (Arkema, Asahi, Ciba, Clariant, Daikin, 3M/Dyneon, DuPont, Solvay Solexis) are participating in '2010/2015 PFOA Stewardship Program' to reduce amounts of PFOA by 95% by 2010 and 100% by 2015