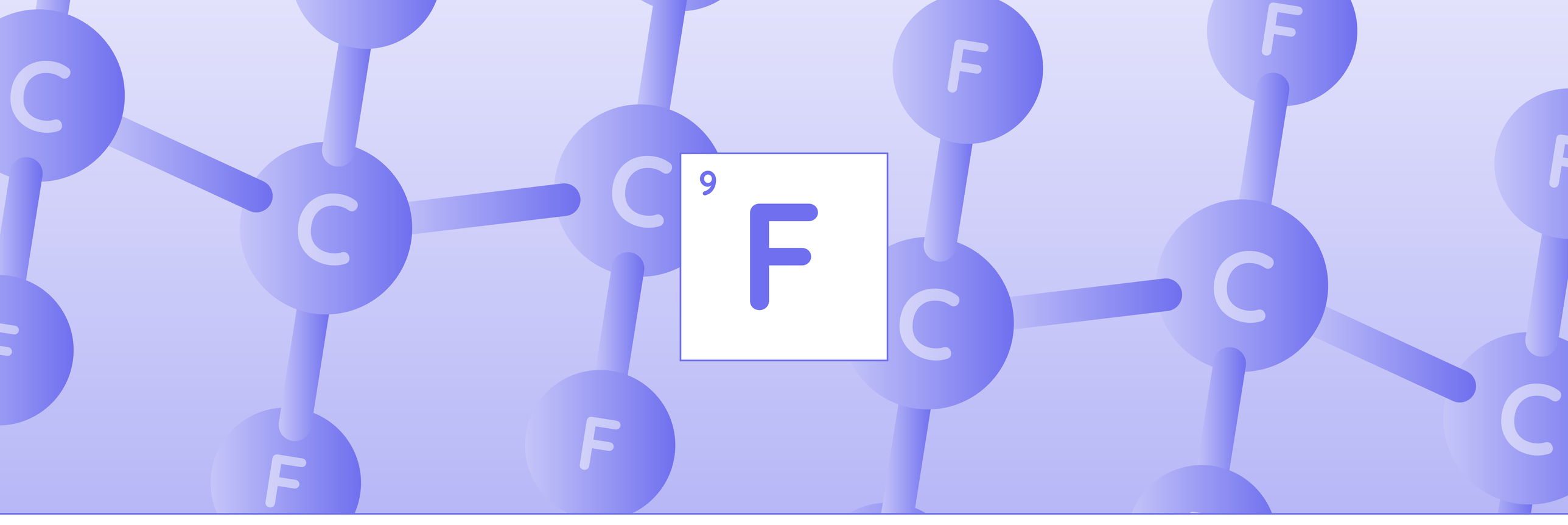


Fluorinated substances contain the chemical element fluorine (F), and are useful in our everyday lives in the form of pharma drugs and fluoropolymers (i.e. fluorinated materials). These are high-performance plastics with a strong carbon-fluorine structure.

• until 1886 •
Many failed experiments until fluorine can be isolated

• 1938 •
Accidental discovery of fluoropolymer PTFE (Polytetrafluoroethylene) in the lab

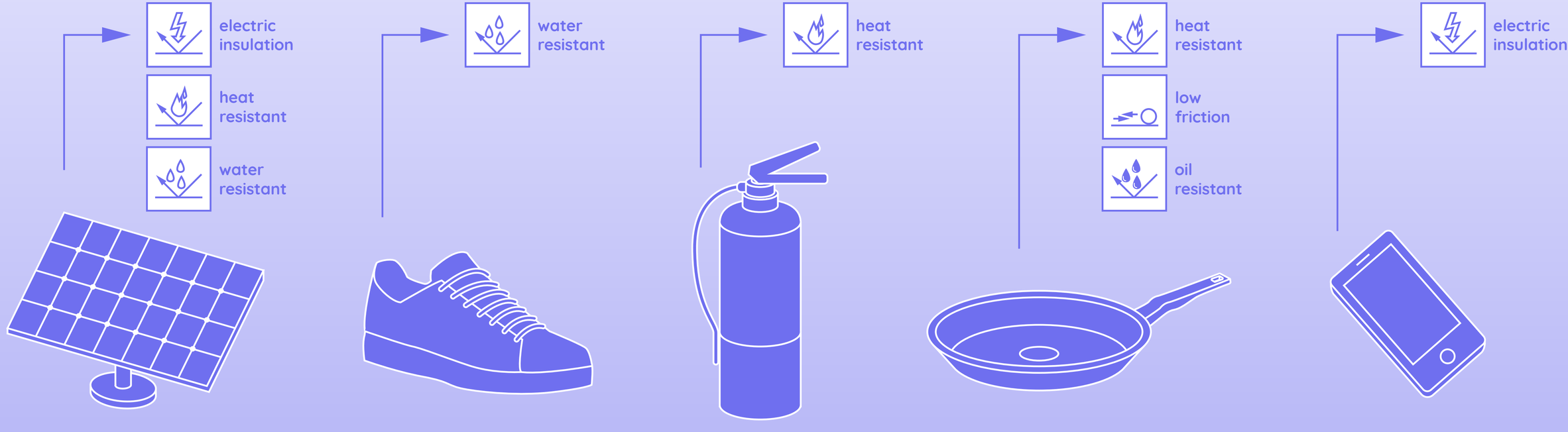
• 1942-46 •
PTFE finds military use in seals and gaskets (incl. in the Manhattan Project)

• starting in 1948 •
PTFE branded as Teflon for commercial use finds many applications

• starting in 1998 •
Production of perfluorinated substances gets scrutinized on the basis of lawsuits denouncing environmental contamination

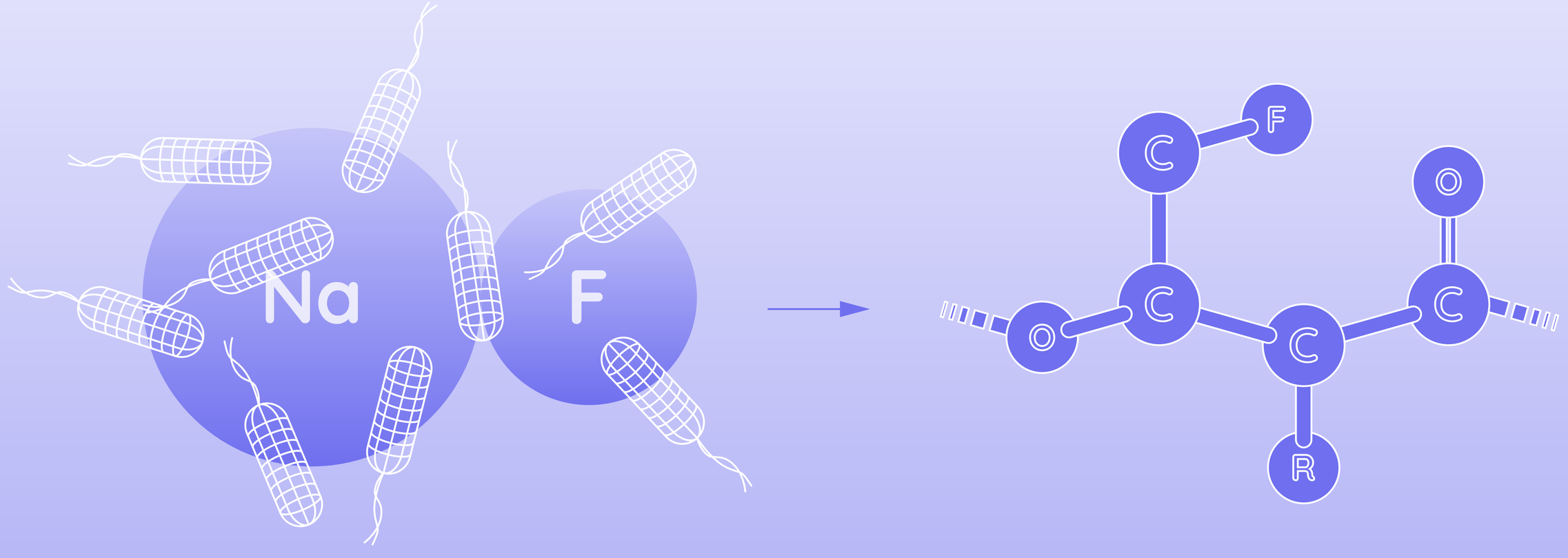
• currently •
Some perfluorinated compounds banned, fluorinated substances in evaluation, investigations and regulations ongoing

Fluoropolymers have been found very useful shortly after their discovery. Today they are used in many different applications, but as part of a larger family of fluorinated substances they are also facing some regulatory issues.

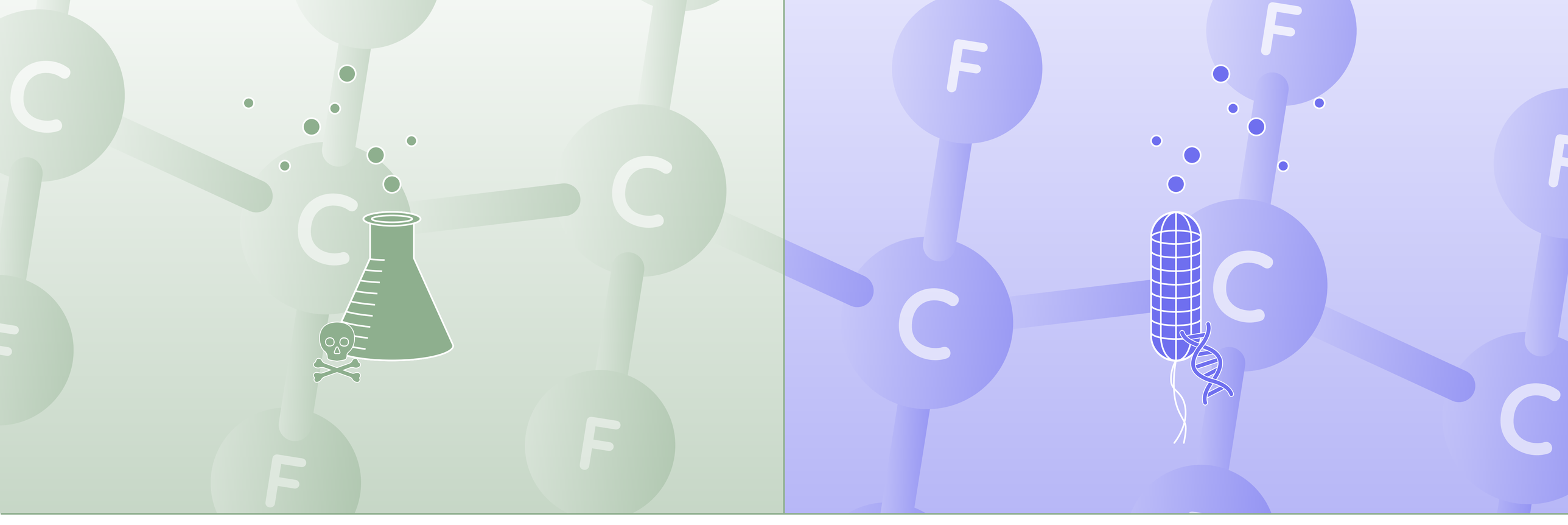


The stability and durability of fluoropolymers make them incredibly useful for many different applications.

Fluoropolymers have to contend with two issues: 1) a toxic production process and
2) the materials are so robust that they persist in the environment at the end of their life span.



SinFonia’s goal is to produce fluoropolymers biologically, using genetically modified bacteria that use sodium fluoride (a salt) as substrate.



Producing fluoropolymers biologically is safer and doesn't require
the extreme operating conditions of the chemical production process.