



Association pour la santé environnementale du Québec
Environmental Health Association of Québec

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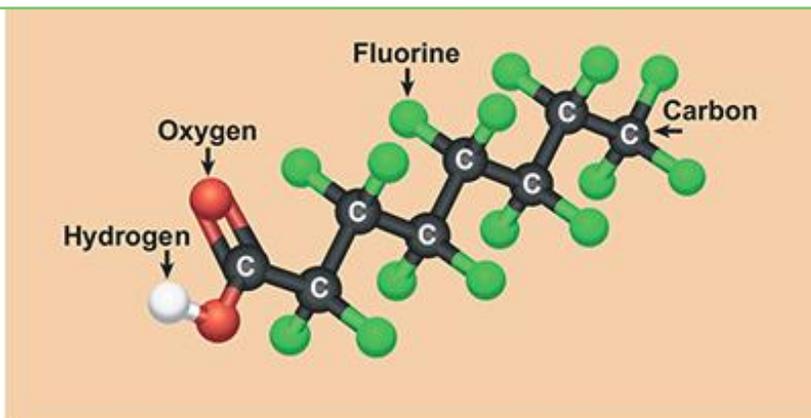


Forever chemicals – What are they? (Part 1)



Commonly known as forever chemicals, polyfluoroalkyl substances (PFAS) are an ever-expanding group of manufactured chemicals that are widely used to make various types of everyday products. Since the 1940s, they have been used, for example, in non-stick cookware or in stain-resistant fabrics and carpets. In the family of PFAS, you can find perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS); these molecules are the most widespread in the environment and are the most well studied for their effects and impacts.

In molecular representation, PFAS are a member of the carboxylic acid family and are made-up of a chain of linked carbon and fluorine atoms (see the image for an example of the PFOA molecule). Because of this chemical signature (the carbon-fluorine bond is one of the strongest you can find in nature), these synthetic substances are very difficult to disintegrate in the environment or in our bodies.



PFOA, also known as C8, has 8 carbons.

Since this is what makes them rather persistent in the environment they are found in the blood of people and animals all over the world. Note that these molecules have the ability to repel oil, grease and water. Also, scientists cannot estimate the environmental half-life (amount of time it takes for the disappearance of half of the chemical) for polyfluoroalkyl substances.

In section 2, next month, you will read about where you can find them in your physical environment and how can you be exposed to these substances. If you want to know more information on this subject, you can consult the followed links. Note that other links will be added in the other sections on this subject.

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Part 2 next month!



Online links:

What are PFAS? , Agency for toxic substances and disease registry,
US department of health and human services,
<https://www.atsdr.cdc.gov/pfas/overview.html>

Perfluoroalkyl and perfluoroalkyl substances, National institute of environment health sciences,
<https://www.niehs.nih.gov/health/topics/agents/pfc/index.cfm>

What are PFAS chemicals, and what are they doing to our health? ,
Nadia Kounang, CNN health, article writed on February 19th 2019,
<https://www.cnn.com/2019/02/14/health/what-are-pfas-chemicals/index.html>

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