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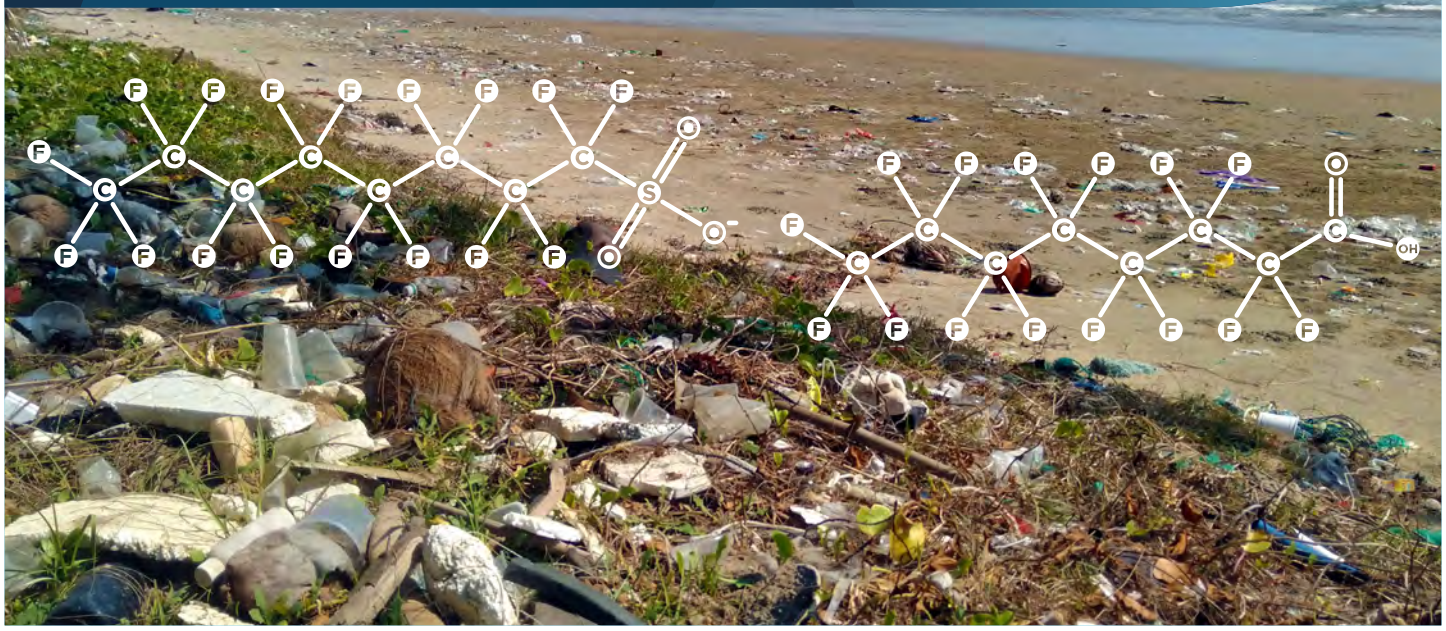
PFAS (per- and polyfluoroalkyl substances)



Introduction

Emerging organic contaminants are an increasing area of concern and focus in environmental management. Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that includes PFOA, PFOS.

PFAS have been manufactured and used in a variety of industries around the globe. PFOA and PFOS have been the most extensively produced and studied of these chemicals. Both are very persistent (often termed forever chemicals) in the environment and in the human body. Exposure to certain PFAS can lead to adverse human health effects such as cancer. Regulation to protect New Zealand's environment and the health of our people will increasingly follow leading overseas examples, e.g. USA, Australia. New Zealand is heading towards regulation of PFAS, with draft drinking water standards including maximum allowable values. We have developed test methodologies to detect a wide range of PFAS contaminants at ultra low concentrations.

PFAS

This test reports active concentrations of individual PFAS (20–30 individual compounds) and provides reporting to meet the relevant regulatory standards.

TOP (Total Oxidisable Precursors)

Today, thousands of PFAS compounds exist, although it isn't possible to determine the exact number. It's therefore good practice to conduct a wider evaluation and include all known precursors. Precursors are compounds, both known and unknown, which have the potential to form perfluorinated PFCAs (perfluorinated carboxylic acids) and PFSA (perfluorosulfonic acids) on degradation in the environment. This method is designed to oxidise precursors to corresponding perfluorinated substances, which can then be analysed for the standard suite of compounds. It gives a measure of the levels of perfluorinated substances that could be formed upon the environmental degradation of a sample.

What matrices do we cover?

The matrices covered by our PFAS and TOP test methods are:

Waters

- Potable
- Non-potable
- Wastewater
- Trade waste
- Stormwater
- Marine

Solids

- Soils
- Biosolids
- Sludge

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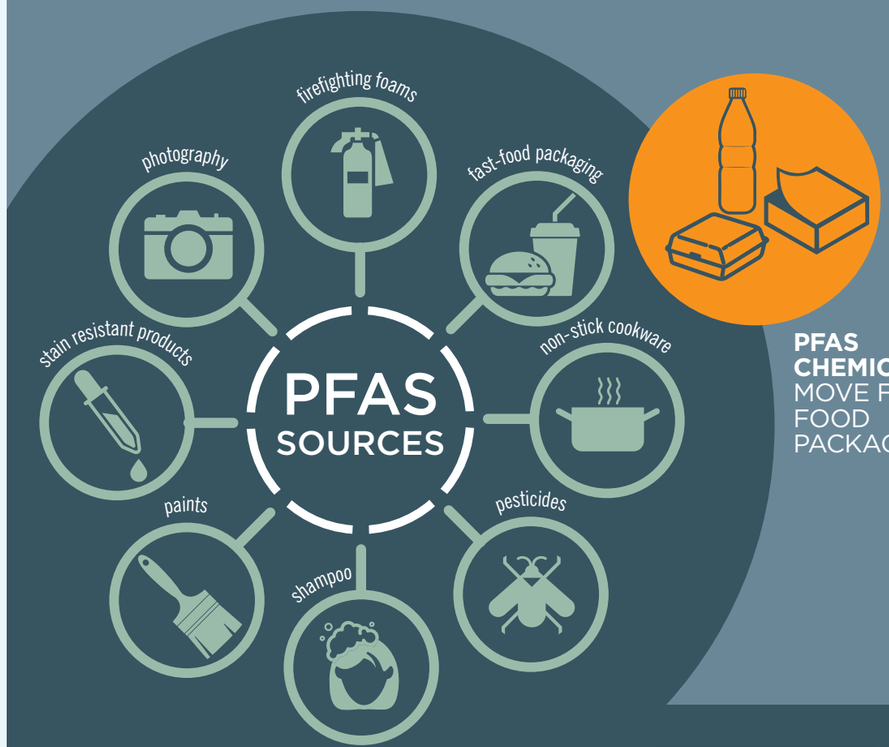
How widely are they found?

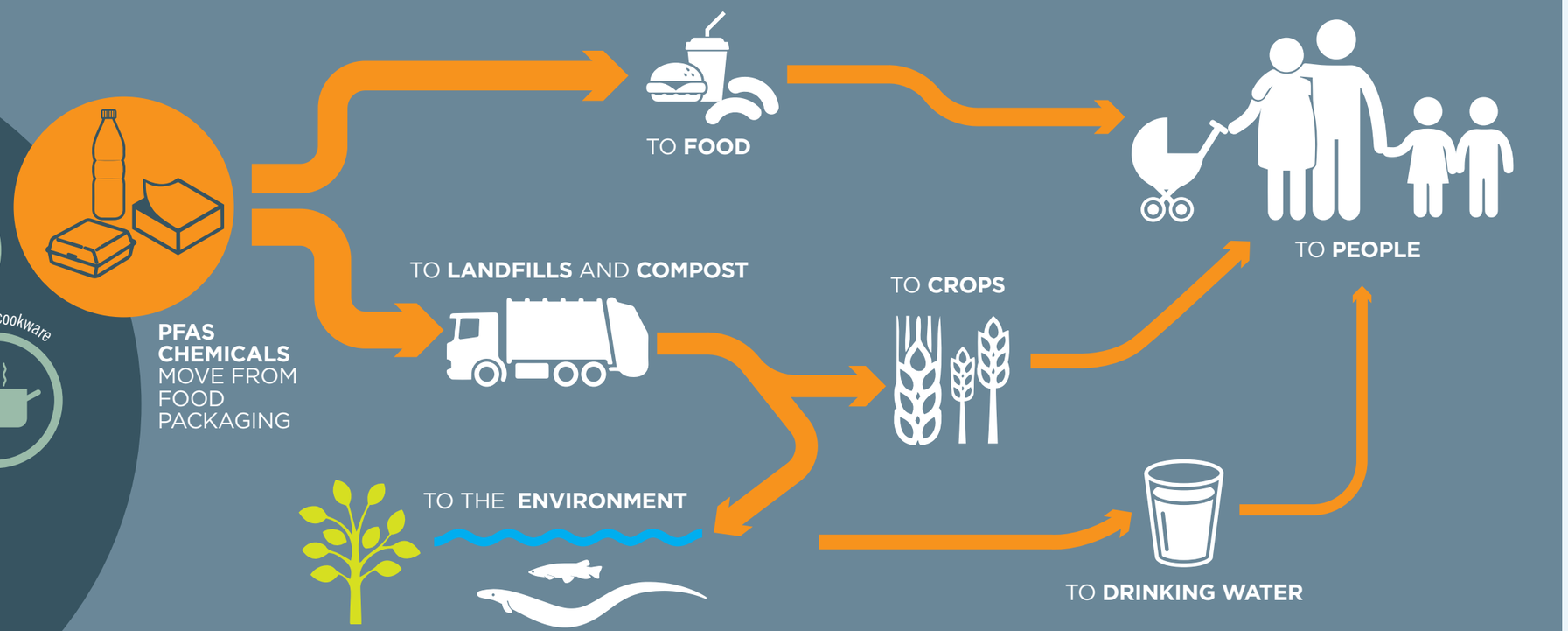
PFAS chemicals have been used globally in a range of consumer and industrial applications. They take a long time to breakdown and as a result are found in the environment, humans and animals. Every day, people are exposed to small amounts of PFAS through food, dust, air, water and contact with consumer products that contain the compounds.

What are the environmental concerns?

The use of PFAS substances (including PFOS, PFOA) commenced in the 1950s, but they weren't identified as substances of environmental concern until the late 1990s. As a result, some manufacturers moved to shorter chain PFAS substances such as PFHxS. Most instances of concern overseas have come from manufacturing sites, and the use of firefighting foams in fighting fires or when carrying out firefighter training.

PFOS, PFOA and PFHxS are persistent in the environment and in the human body, and so are of concern nationally and internationally. They are resistant to environmental degradation. They also bioaccumulate in the tissues of living organisms for long periods of time which may lead to adverse health effects.





What have PFOS, PFOA and PFHxS been used for?

PFOS, PFOA and PFHxS are types of PFAS compounds that have been used in the production of firefighting foams for putting out flammable liquid fires. PFOS, PFOA and PFHxS have also been used in the production of commercial and consumer products such as oil and water resistant coatings on textiles and upholstery, carpets, leather, paints, inks, ant insecticides, aviation hydraulic fluids, some medical devices, and parts used in colour copiers and printers. This does not mean that PFOS, PFOA and PFHxS are necessarily found in these products, as often they are used in the manufacturing process rather than being a component of the finished article.

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At Watercare we offer:

Speed
Rapid turnaround time with results being made available in 8 days or less. This is critical when the data is intended to guide remediation efforts and public health decisions. Contact us for express options

Accreditation
Our PFAS testing is IANZ accredited.

Technical support
Our lab has subject matter expertise to assist you with testing programmes and interpretation of results.

Laboratory network
We operate a nationwide network of laboratories throughout New Zealand.

Other testing services
Watercare offers a broad range of other laboratory testing services which can be used to complement PFAS testing.

Watercare Laboratory Services offer a full range of testing services comprising:

- Online water monitoring
- Ambient air quality monitoring
- Stack emissions testing
- Odour monitoring
- Lab testing
  - inorganic
  - organic
  - microbiology
- Sampling

We test a range of matrices:

- Water
- Soil
- Air

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