



# Pollution: 'Forever chemicals' in rainwater exceed safe levels

2 August 2022



GETTY IMAGES

PFAS have been found in rain in Tibet

**By Matt McGrath**  
Environment correspondent

**New research shows that rainwater in most locations on Earth contains levels of chemicals that "greatly exceed" safety levels.**

These synthetic substances called PFAS are used in non-stick pans, fire-fighting foam and water-repellent clothes.

Dubbed 'forever chemicals', they persist for years in the environment.

Such is their prevalence now that scientists say there is no safe space on Earth to avoid them.

The researchers from Stockholm University say it is "vitaly important" that the use of these substances is rapidly restricted.

- [More research needed on climate extinction threat](#)
- [The race to replace persistent chemicals in our homes](#)
- [Driest July in England since 1935 - Met Office](#)

Scientists fear PFAS may pose health risks including cancer, though research has so far been inconclusive. They have been growing increasingly concerned about the proliferation of PFAS in recent years.

PFAS stands for poly- and perfluoroalkyl substances.

There are around 4,500 of these fluorine-based compounds and they are found in almost every dwelling on Earth in hundreds of everyday products including food packaging, non-stick cookware, rain gear, adhesives, paper and paints.



GETTY IMAGES

Fire fighting foams often contain PFAS chemicals

Safety concerns about the presence of these long-lasting substances in drinking water have also been raised.

Earlier this year a **BBC investigation** found PFAS in water samples in England at levels that exceeded European safety levels, but did not exceed the current

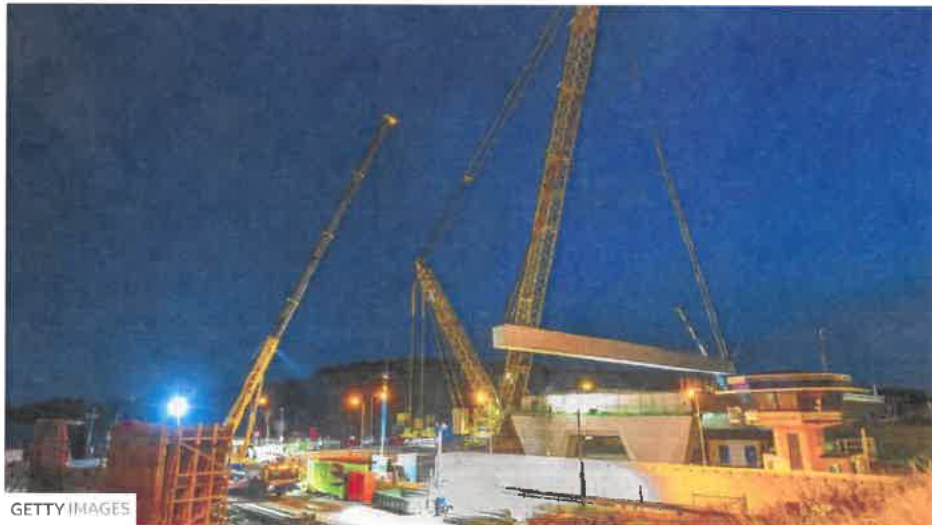
But this caused 70% of building projects involving soil removal or using excavated material to be halted. After protests, the government relaxed the guidelines.

According to the new study, this type of relaxation of safety levels is likely to happen with water contamination as well.

"If you applied those guidelines everywhere, you wouldn't be able to build anywhere," said Prof Ian Cousins.

"I think they'll do the same thing with the US drinking water advisories, because they're not practical to apply.

"It's not because there's anything wrong with the risk assessment. It's just because you can't apply those things. It's just impossible, from an economic viewpoint to apply any of those guidelines."



GETTY IMAGES

A Netherlands construction site - many projects in the country had to stop because of restrictions on PFAS

The key challenge with these chemicals is their persistence, rather than their toxicity, say the study authors.

While some harmful PFAS were phased out by manufacturers two decades ago, they persist in water, air and soil.

One way PFAS cycle through the environment is in the form of tiny particles carried in sea spray into the air and then back to land.

This inability to breakdown in the environment means that PFAS are now found even in remote areas of the Antarctic, as **reported** by Prof Halsall

recently.

While there are moves at European level to restrict the uses of these chemicals and to find more benign replacements, there are also hopes that industry will quickly move away from using PFAS.

"We do need persistent chemicals and substances, we want our products to last a long time while we use them," said Prof Cousins.

"And while there are conservative voices in industry, there are progressive actors too. I'm very optimistic when I see these progressive industries working together."

The **research** has been published in the journal Environmental Science & Technology.

Follow Matt on Twitter [@mattmcgrathbbc](https://twitter.com/mattmcgrathbbc).

## Related Topics

[Pollution](#)   [Water pollution](#)

## Top Stories

[Biden says default off the table after debt talks](#)

6 hours ago

[Indian wrestlers risk Olympic dream for '#MeToo' protest](#)

10 hours ago

[Officer who Tasered 95-year-old woman suspended](#)

4 hours ago

## Features

