

# Per- and polyfluorinated alkyl substances (PFAS)

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**In news**— An Oxford University-led study has found alarming levels of toxic PFAS, also known as “forever chemicals” in the ice around Svalbard, Norway which pose a risk to the region’s wildlife.

## What is PFAS?

- **The PFAs refer to a class of around 12,000 chemicals which are often found in consumer products** which resist water, heat or stains and are also called “forever chemicals” since they do not naturally break down over time.
- Additionally, **these chemicals are linked to a number of diseases including cancer, liver disease, etc.**
- Therefore, these contaminants, once passed on, can affect the entire food web from small organisms like plankton or fish to apex predators in the region like polar bears.
- Notably, high levels of PFAs have been found in the polar bear’s bloodstream.

## What does the study say?

- The study found the **levels of these “forever chemicals” in the ice, were higher than the United States advisory drinking water limits were.**
- **The Norwegian Arctic ice consists of 26 types of PFAS compounds** which once the ice melts can be passed to ecosystems like Arctic fjords and tundra.
- **The study noted the “doubling up effect” on animals as climate changes and ice melts** since the climate has reportedly been warming up in Svalbard faster than the world average.

- It also found high levels of TFA, a refrigeration byproduct caused by hydrofluoroolefin (HFOs) after chlorofluorocarbons (CFCs), a potent greenhouse gas used for refrigeration, was phased out.
- **The HFOs, which are also greenhouse gasses once released, can turn into TFA,** the levels of which the study finds have been increasing in the Arctic.
- Additionally, TFA and other PFAS compounds are highly mobile and can even move through the atmosphere to anywhere in the world.
- While TFA is said to be less toxic when compared to several other PFAs, its limited knowledge needs addressing, said the authors, as no one is fully aware of the damage these compounds might be causing to the environment.

**Further**

**reading:**

**<https://journalsofindia.com/what-are-forever-chemicals/>**