



Public perceptions of PFAS

What the UK thinks
of forever chemicals

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Key findings at a glance

Awareness of PFAS

67% of the general public were not aware of PFAS

Which products were known to contain PFAS?



65% said Food packaging



63% Non-stick pans



21% Drinking water

Management of PFAS

How to fund removal?



84% supported regulation requiring PFAS-using industries to **reduce and reverse** contamination



77% support additional government funding for **research and innovation**



75% support a fee or tax on these industries for **end of life management** and **environmental clean up**

Taking Action on PFAS

9 in **10** said it is very important to control PFAS in all three of



FOOD



DRINKING WATER



THE ENVIRONMENT

Who should take responsibility for reducing PFAS levels?

- Chemicals manufacturers **74%**
- Product manufacturers **73%**
- UK Government **58%**

Trust to take action is low

- UK government **29%**
- Individual consumers **27%**
- Manufacturers of chemicals or products **14%**

Alternatives to PFAS

What should PFAS alternatives prioritise?

86%



HUMAN HEALTH

71%



THE ENVIRONMENT

18%



PRODUCT PERFORMANCE

12%



COST

Willingness to accept changes to products if toxic PFAS weren't used:

- Lower performance **61%**
- Increased cost **60%**
- Reduced availability **70%**

Introduction

Engaging the public in policy development is increasingly recognised as a route to developing and delivering effective policy that is transparent, accountable and adoptable. Involving the public allows policy makers to consider what matters to communities when making decisions that impact people's daily lives.

This report summarises research commissioned by the Royal Society of Chemistry (RSC)¹ and delivered by YouGov into public attitudes to PFAS (per- and polyfluoroalkyl substances), a large group of chemicals, some of which can pose a significant risk to human health and the environment. It brings together findings from:

- a survey of more than 4,000 respondents that was representative of the UK population in individual demographics and geography, in order to capture the breadth of levels of awareness, concerns and openness to change relating to PFAS across the UK population.
- two focus groups, which were designed to capture attitudes to PFAS from individuals from a range of demographic backgrounds and provide a forum for discussion to build on the survey results.

This report highlights what matters to the public in relation to PFAS and the changes they want to see to the use and management of these chemicals in the UK.

It presents evidence of public views regarding PFAS management, the development of alternatives, the willingness to accept change and trust in organisations to take action.

It also contextualises these findings within the wider policy evidence base and previous reports and recommendations by the RSC (see the **final page** of this report for a list of relevant RSC reports).

Understanding the public's priorities, alongside evidence on chemical hazards, use and exposure, can help regulators make choices about how to effectively manage the manufacture, use and disposal of these chemicals.

This research complements a large body of scientific policy evidence and demonstrates clearly that people care about PFAS and that the Government should too.

¹ [Full report](#) and [data set](#) available on our website.

Background

PFAS are a group of more than 10,000 chemicals that have been manufactured and used worldwide since the 1940s. The chemical structure of these molecules consists of one of the strongest bonds in nature, making them very durable, nonreactive, slippery, and heat, water, oil and stain-resistant.

Aerospace, building and construction, electronics, telecommunications, medical devices and consumer products are examples of sectors that use and sometimes rely on PFAS. However, their stability means that PFAS do not easily break down, can move around in nature, and build up over time in humans, animals and the environment.²

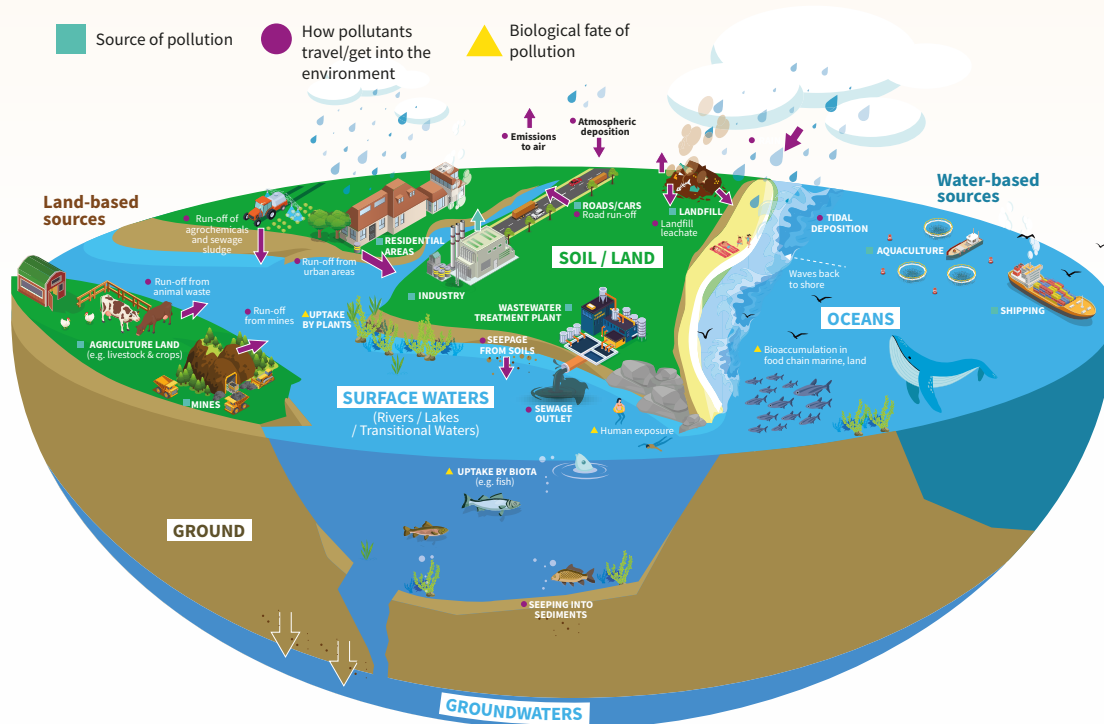
PFAS are considered Contaminants of Emerging Concern (CECs; *figure 1*), substances that are often not controlled or monitored in the environment, and even at low concentrations may

be harmful to human health and the environment.

Some PFAS are known to be toxic to humans and wildlife, often at very low levels of exposure over time, whilst other PFAS are considered to present a lower risk of harm. However, toxicity levels for the majority of PFAS are currently unknown.

Our varied understanding of the potential hazards posed by PFAS have made it difficult for regulators to make decisions about how to manage risks and appropriately control their use.

Figure 1: Sources and fates of contaminants of emerging concern (CECs) into the environment (from our position statement [Tackling contaminants of emerging concern in water](#))



2 For more on categorising chemicals for regulatory purposes as persistent, mobile, bioaccumulative and toxic, see <https://pmc.ncbi.nlm.nih.gov/articles/PMC11108893/>

Some regimes, such as the European Union (EU), are investigating restricting the use of PFAS as a group. This approach is hazard-based and precautionary and does not require comprehensive data about all PFAS.

Other countries, like the UK, are taking a more piecemeal approach by enacting restrictions for specific uses of PFAS, such as in firefighting foams. Many countries around the world are also enacting limits on PFAS in drinking water to protect human health.

Awareness of PFAS

The RSC considers transparency and citizens' right to know as two important principles for the management of chemicals in the environment. These principles also support better access to the information consumers require to make informed choices.

It is important to consider the impact that consumer choices have on the demand for certain chemicals and products. Consumer behaviour can also play a part in the responsible use of chemicals.

The RSC-YouGov survey found that, although overall awareness of PFAS was low, with only 29% of survey respondents being aware of them, respondents with higher levels of awareness were more likely to perceive them as higher risk to human health and the environment (54% of respondents).

Of those who were aware of PFAS before the survey, 32% reported high or moderate knowledge levels. However, self-reported knowledge did not always translate to people's ability to identify products that contained PFAS:



- Some categories of products, such as food packaging and non-stick pans, were more frequently identified by respondents as likely to contain PFAS (65% and 63% of respondents respectively).
- Only 21% of respondents knew that drinking water could contain PFAS.
- Although respondents were unlikely to have avoided purchasing a product containing PFAS in the past, 72% said that this was because they did not know enough about PFAS and/or the products that contained them.

Survey respondents were provided with introductory information about PFAS. Two in five respondents (41%) believed that all or most PFAS presented a significant risk to human health or the environment, with 37% responding that only some or no PFAS presented a significant risk. Women and people from ethnic minorities were more likely to report that all or most PFAS posed a significant risk.

Participants in the study reported a desire for better public and consumer information about the impact of and response to PFAS. Focus group participants also highlighted the value of, and learning generated by taking part in the study. This feedback suggests there may be value in further engagement around this issue. Doing so could help to ensure future approaches to PFAS use and management address public priorities and needs.

“This has been a great experience... I think these type[s] of sessions are great for captur[ing] public opinion but also help to educate and stimulate ideas to help society make positive changes.”

Focus group participant

“I will be a lot more aware [of PFAS] from now on.”

Focus group participant

Furthering our scientific understanding of PFAS may also help to improve awareness of PFAS and the nuances of their harms and benefits to the public.

Taking action on PFAS

Survey respondents felt that it was very important to effectively control levels of PFAS in food, drinking water and the environment, with 9 out of 10 people expressing this view.

When asked to rank who was most responsible for reducing PFAS levels, people most commonly placed chemical manufacturers (including those that manufacture PFAS) and manufacturers of products that use materials containing PFAS among the top three organisations with greatest responsibility (74% and 73% of respondents respectively). The UK Government was also considered by many (58%) to bear significant responsibility for change.

However, overall trust among respondents for organisations to take action to reduce environmental PFAS levels was low, with the UK Government being trusted the most (by 29% of respondents), followed closely by individual consumers (trusted by 27% of respondents).



14% Only **1 in 7** people

said they trusted product manufacturers or chemical manufacturers to change, despite believing it was primarily the responsibility of these groups to do so.

Focus group participants emphasised that it was the Government’s responsibility to create and enforce PFAS laws and regulations in order to ensure compliance from manufacturers and users of PFAS.

Focus group participants also said they would trust charity organisations to give them information about PFAS, as they are nonprofit and are most likely to provide unbiased opinions and research. However, they emphasised the need for clarity on where charities’ funding was coming from to ensure there was no hidden agenda. The same was felt about independent scientific experts.

The preferred method of communication for information around PFAS was through established news channels, highlighted by focus group participants, although they also acknowledged the role social media could play, especially for young people. They also felt it was important for all information to be verified by credible organisations and experts.

Management of PFAS

The RSC proposes an approach to managing PFAS across their lifecycle that considers:

- using a risk-based approach
- taking into account the precautionary principle³
- understanding essential uses⁴ and alternatives, from a technological and public perspective, to inform decisions
- stopping pollution at the source.

3 Precautionary principle: where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation. (Rio principle 15; TFEU Article 191(2))

4 For more information on the concept of essential use and how it may be applied in the EU, see https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=OJ:C_202402894

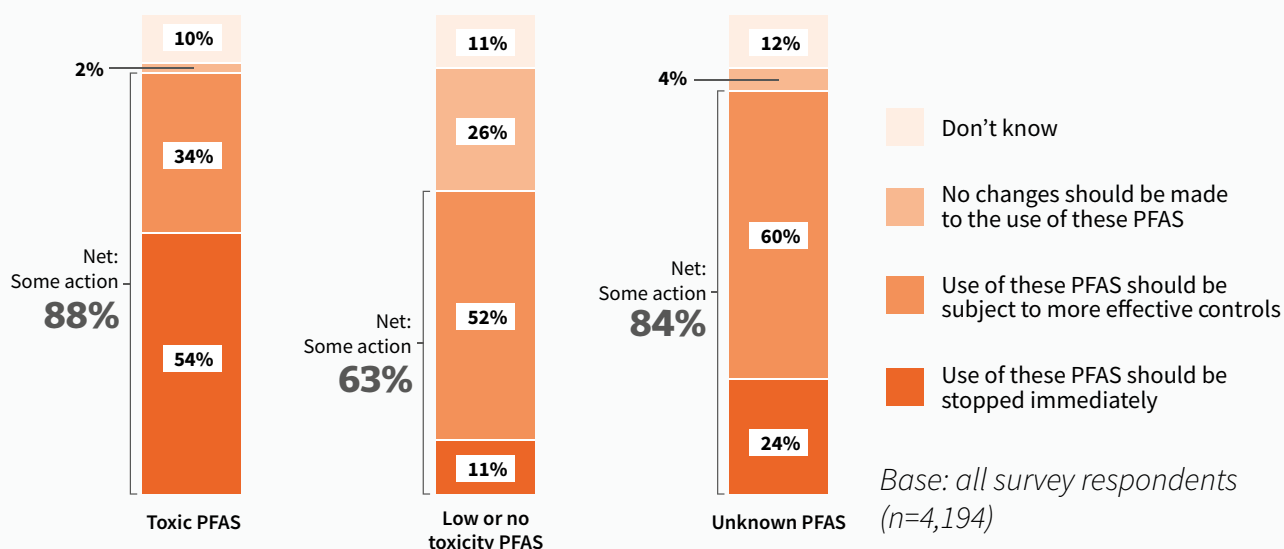
Additional policy changes related to PFAS and other Contaminants of Emerging Concern (CECs) that we have recommended in previous policy documents include:

- The Environment Agency should implement stricter standards for industrial emissions via its power to grant and amend environmental permits.
- Industrial users of PFAS and waste management facilities should be required to test wastewater discharges for PFAS and other CECs and apply appropriate treatment or removal processes before effluent is discharged into the environment.
- The Government should implement a stronger ‘polluter pays’ principle by making additional treatment to remove CECs from urban wastewater mandatory. This could be funded by industries that produce or use problematic CECs that consequently end up in wastewater streams.



The RSC-YouGov findings show that the majority of people want more effective controls on the use of all PFAS, including PFAS known to be toxic to humans and the environment, PFAS of low/no toxicity and PFAS of unknown toxicity (see figure 2 below).


Figure 2: Preferred management of PFAS



Those who identified as having lower education levels, lower social grades and the lowest household incomes were more likely to respond that they did not know what their preferred management of any PFAS would be. These respondents were also more likely to have a lower level of awareness of PFAS. Those who had reported prior awareness of PFAS were significantly more likely to respond that the use of all kinds of PFAS should be stopped immediately.

Of those respondents who wanted more effective controls, around half preferred a risk-based approach, while only around 3 in 10 wanted an approach based on essential uses. Participants from the focus group felt that when it came to PFAS of unknown toxicity, a cautious approach was needed, which aligns more with a hazard-based, precautionary approach.

The findings from the RSC-YouGov research also support our specific policy recommendations. Participants believed that it was the responsibility of the manufacturers and industrial users of PFAS to prevent and remediate PFAS pollution to the environment:

84%  of respondents supported increased regulation of industries using PFAS, requiring them to reduce and reverse contamination.


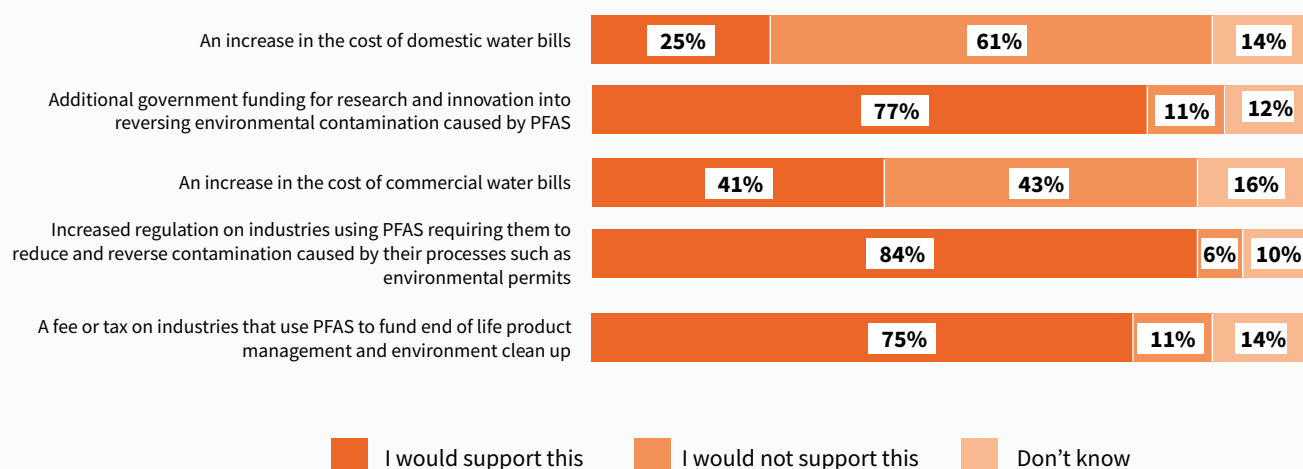
75%  of respondents supported a fee or tax on industries that use PFAS to fund end-of-life management and environmental clean-up.

Figure 3: Support for measures to fund the removal of PFAS from the environment



Base: all survey respondents (n=4,194)

Figure 3 highlights public support for a range of measures to enable PFAS removal from the environment, including government funding for research and innovation into reversing environmental contamination (77% of respondents).

The RSC has called for the UK Government to have a comprehensive and well-resourced monitoring programme for CECs, (of which PFAS are one type), in the environment, wildlife and humans, in order to characterise and target sites for remediation.

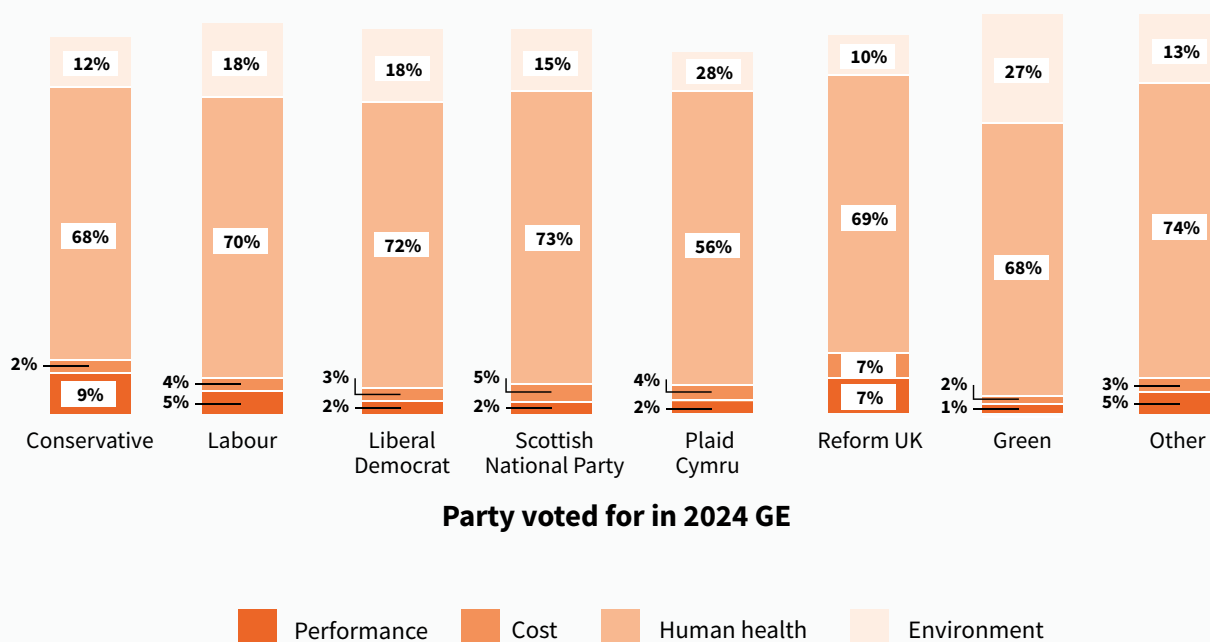
Additionally, we have called for a central and public database to record where PFAS are present or being used across the supply chain, which would help to identify who is responsible for implementing control measures and carrying out environmental remediation.

Alternatives to PFAS

The RSC believes that assessments of PFAS alternatives should consider public attitudes to risk and opinions on the essentiality of products containing PFAS. The RSC-YouGov study asked questions about the use of PFAS versus alternatives in products, to understand the trade-offs that people are willing to accept.

The RSC-YouGov study shows that people want alternatives to PFAS that will not negatively impact their health or the environment.

Figure 4: Number one priority for PFAS replacements by voting behaviour



Base: all survey respondents (n=4,194)

Figure 4 shows that concern for human health and the environment are the highest priorities for all UK voters. There were marginal differences according to voting behaviour related to performance and cost considerations.

Participants in both the survey and focus groups generally reported a willingness to accept change in consumer products. However, the types of changes that were acceptable, including cost, depended on the type of products.

The general agreement was that costs should not be increased significantly for products deemed as necessities, to avoid increasing socio-economic inequality. Although some participants were willing to use ‘consumer power’ to purchase PFAS-free products, the majority felt it was

the responsibility of the manufacturer to research and implement easily accessible alternatives without offloading cost to consumers.

Participants in the focus groups commented on the desire for more information about the products they use, including past use of products that may now be considered bad for their health. Labelling and product information was seen as an important way to enable them to make more informed choices.

Focus group participants also expressed frustration with a perceived lack of investment into safer alternatives by manufacturers and the lack of alternatives on the market currently. The chemical science community is already contributing to the development of safer alternatives.

Public concern at the pace of change in this area could help to shape priorities for scaling up and diversifying research and innovation in PFAS alternatives to meet public, scientific and industry needs.

Many PFAS are used in high-tech and highly specialised sectors. In some applications, substitutes for PFAS are not available, do not perform as well or may be cost prohibitive. Participants recognised these trade-offs, with some wondering if restricting the use of PFAS would impact the type or variety of products that they could access.

Focus group participants felt that research into the risks of PFAS to human health and the environment, along with alternatives, should be a priority.

This sentiment supports the RSC’s call for responsible innovation in industry, incorporating safe and sustainable-by-design principles to create materials and products that are functional while also protecting human health and the environment. The Government could also prioritise these areas for public investment in research.



Conclusion

Understanding public attitudes to PFAS is an important aspect of developing policies on the use and management of this group of chemicals. Integrating public attitudes into PFAS policy will support the transparency, accountability and feasibility of policy options that impact people's daily lives.

The evidence presented in this report illustrates that people care about how PFAS are used, managed and regulated, and they want to see change as soon as possible. The changes they want are aligned with the currently available scientific evidence and the RSC's recommendations, with the public prioritising better controls, safer alternatives, strengthened regulation and investment in research, whilst being mindful of the cost implications of any potential changes.

Although more work is needed to further our scientific understanding of PFAS and the opportunities for alternatives, the public clearly supports change. The public want Government to act to protect consumers and the environment, and to develop a plan to appropriately manage PFAS in the future.

Our *Cleaning up UK drinking water* campaign, launched in 2023, has already contributed to more stringent guidance on PFAS levels in drinking water being introduced by the Drinking Water Inspectorate in England and Wales in August 2024. We will continue to engage with policy makers drawing on this report, the scientific evidence and stakeholders experience and expertise to work towards further sustainable and meaningful change in PFAS use and management that improve outcomes for people, places and the environment.

A list of RSC policy positions referenced in this report

A chemicals strategy for a sustainable chemicals revolution (2020)

<https://www.rsc.org/globalassets/22-new-perspectives/sustainability/rsc-chemicals-strategy-policy-2020.pdf>

Per- and polyfluoroalkyl substances (PFAS) in UK drinking water (2023)

<https://www.rsc.org/globalassets/04-campaigning-outreach/policy/environment-health-safety-policy/rsc-policy-position-on-pfas-in-uk-drinking-water.pdf>

Risk based regulation for per- and polyfluoroalkyl substances (PFAS) (2021)

<https://www.rsc.org/globalassets/22-new-perspectives/sustainability/a-chemicals-strategy-for-a-sustainable-chemicals-revolution/pfas-policy-position-dec-2021.pdf>

Tackling Contaminants of Emerging Concern (CECs) in water (2024)

<https://www.rsc.org/globalassets/22-new-perspectives/landing-pages/chemical-waste-and-pollution/our-position-statement--tackling-contaminants-of-emerging-concern-cecs-in-water.pdf>

Principles for the management of chemicals in the environment (2020)

https://www.rsc.org/globalassets/04-campaigning-outreach/tackling-the-worlds-challenges/environment/rsc_principles_for_chemicals_in_the_environment.pdf

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The Royal Society of Chemistry would be happy to discuss any of the issues raised in this work in more detail. Any questions should be directed to the RSC Policy & Evidence Team at policy@rsc.org.

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