

# Consumer Perception of Circular Chemical Products

## Background/Context

The chemical home products industry is undergoing a major transformation, aiming to design products with a life cycle focus to enhance environmental sustainability and reduce waste. This shift is particularly critical given the significant environmental impact of the chemical industry—it accounts for 16% of direct CO<sub>2</sub> emissions, is the largest industrial energy consumer, and generates over 40 million tonnes of

waste annually in the UK's commercial and industrial sectors

Many household items, such as shampoo and hair products, are not only packaged in plastic containers but the products themselves contain chemical surfactants, which are primarily derived from fossil feedstocks. Successfully transitioning this sector to a circular model requires not only industry innovation but also consumer awareness and behavioural shifts.

## Perceptions of circular home products

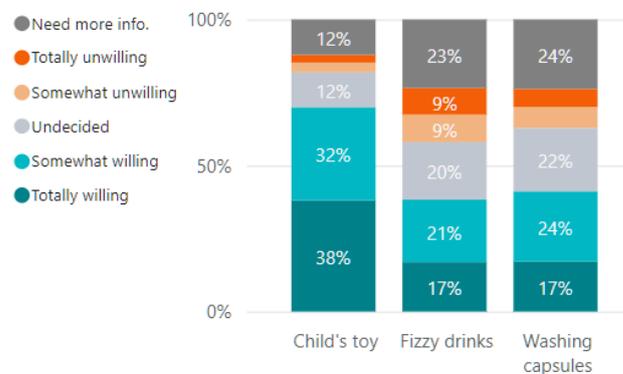
To better understand these dynamics, researchers from the Interdisciplinary Centre for the Circular Chemicals Economy (CircularChem), and WRAP conducted an extensive online consumer survey in August 2022<sup>1</sup>. The study gathered insights from over 3,000 UK citizens aged 18 and above, with 2,613 responses retained after validation.

household products, their presence is not always immediately apparent to consumers.

Air fresheners	Cleansing wipes	Beauty & skin care	Shampoo & conditioner	Washing capsules
62%	54%	44%	43%	59%
Tyres	Bin bags	Paints	Medicines	Batteries
47%	36%	79%	48%	78%

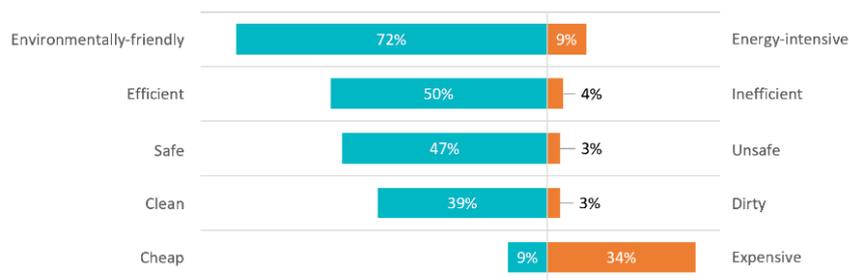
**Figure 1. Percentage of Respondents Correctly Identifying Chemical Content in Various Household Products.**

Only 36% of respondents recognised that bin bags contain chemicals, highlighting a significant gap in awareness regarding everyday items. On average, respondents correctly identified 5.5 out of 10 items, indicating that while chemicals are ubiquitous in



**Figure 2. Consumer Willingness to Purchase Goods Made from Recycled Chemicals.**

While consumers recognise their role in making sustainable choices, they also believe that sustainable products cost more and express reluctance to pay a premium for environmentally friendly options. This highlights a critical barrier to sustainable production adoption: consumers do not believe the financial burden of sustainability should fall on them.



**Figure 3. Consumer Perceptions of Products Made from Recycled Materials.**

A majority of respondents believe recycled products are more environmentally friendly and efficient, and safer to use. However, one persistent concern is the assumption that recycled materials incur additional cost, as seen with recycled chemical products, which may discourage adoption.



## Barriers to Adoption

1. Lack of awareness & understanding
2. Scepticism towards environmental claims
3. Circular products perceived as a “luxury”

One of the key challenges is bridging the knowledge gap through comprehensive education campaigns and clearer product labelling. Improving consumer understanding, building trust, and increasing confidence in sustainable products are essential steps toward wider adoption.

### References & Further Reading

<sup>1</sup>[https://bingxu1.github.io/pdfs/Consumer\\_Survey.pdf](https://bingxu1.github.io/pdfs/Consumer_Survey.pdf)

<sup>2</sup>[https://bingxu1.github.io/pdfs/CE\\_Laundry.pdf](https://bingxu1.github.io/pdfs/CE_Laundry.pdf)

<https://www.circular-chemical.org/>

<https://doi.org/10.1016/j.clrc.2025.100283>

### Acknowledgements

This report was prepared by Dr Lucy Elphick and Professor Jin Xuan of the Surrey Circular Economy Group, University of Surrey, based on research carried out by the CircularChem team.

In a second study, CircularChem explored UK consumer attitudes toward circular economy laundry detergents<sup>2</sup>. The aim was to identify barriers to adoption and potential motivators for switching to sustainable alternatives.

Many participants already engaged in sustainability-related behaviours, such as recycling and composting; however, these behaviours do not always translate into purchasing decisions. The disconnection between environmental awareness and purchasing habits suggests a cognitive dissonance effect, where individuals hold pro-environment values but continue to buy conventional products due to habit, lack of knowledge, or perceived inconvenience

**“I recycle all my plastic, but I’ve never really thought about what my detergent is made of.”**

## Opportunities for Change

- Lower prices or incentives could drive adoption.
- Mainstream brands should lead to build trust and credibility.
- Stronger retail presence and marketing are needed to improve visibility.
- Clearer messaging is essential to address scepticism and highlight benefits beyond sustainability.