



Toxic Chemicals in Everyday Life

A response from the Royal Society of Chemistry to the House of Commons Environmental Audit Committee.

The Royal Society of Chemistry continues to advocate for a system of chemicals and products regulation that achieves a balance between nurturing innovation, protecting the environment and human health, and is harmonised with global regulations to enable the UK to trade internationally. Such a system is best implemented using a risk-based approach to regulation.

In this response, we focus on four overarching action points that relate to all of the questions posed in the inquiry and we believe require further investigation and consideration by government:

- 1) The need for **decision-making principles** for chemicals and products regulation
- 2) The need for effective and **independent scientific evaluation and advice mechanisms** to ensure chemicals are used in a safe and responsible way as possible. The Citizen's right-to-know (what chemicals are present in their environments and how they might be affected) is an important principle that we have advocated and we are pleased to see this reflected in the Environmental Principles and Governance draft bill.

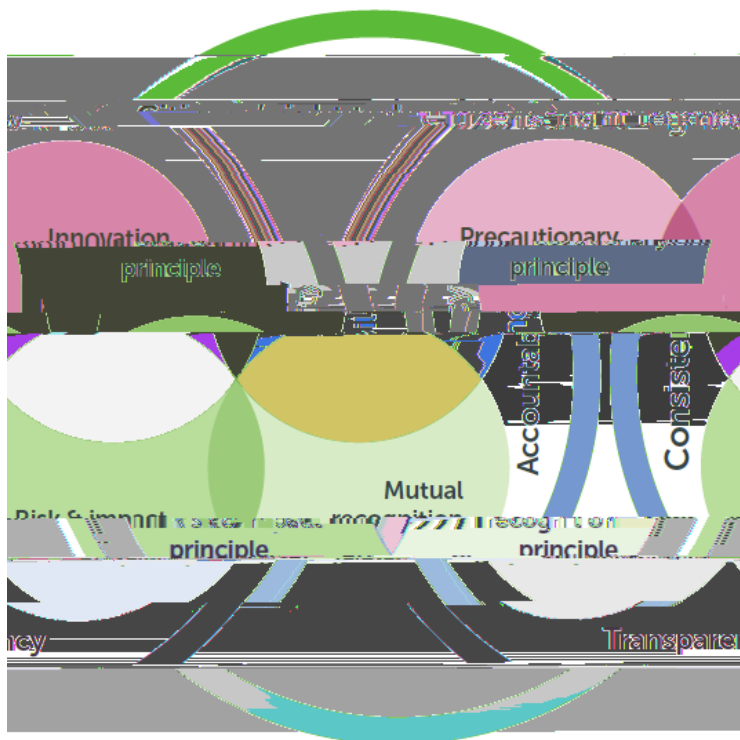


Figure 1 Decision-making principles for the management of chemicals in the environment and everyday life

- a) **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))
- This principle requires significant discussion by governments as to how it is implemented in practice and in particular in relation to the full interpretation stated in the [Communication from the EU Commission \(EC\) on the precautionary principle in 2000](#). An important point made by the EC is that 'The implementation of an approach based on the precautionary principle should start with a scientific evaluation, as complete as possible, and where possible identifying at each stage the degree of scientific uncertainty.' Full scientific certainty is rarely achieved, even with a large amount of scientific evidence, and uncertainty is often complex to communicate. The scientific community is integral to the implementation of the precautionary principle and assessing risk. The ultimate risk management decisions for chemicals and products are taken by policymakers based not only on the science but on societal acceptability of the degree of precaution desired in a given situation and should involve all relevant stakeholders, with experienced high calibre scientists as key contributors to decision-making.*
- b) **Risk & Impact Principle:** an environmental and human health risk and impact assessment shall be undertaken for proposed activities that are likely to have a significant adverse impact on the environment and are subject to a decision by the national competent authority. (Rio principle 17)

Risk assessment is performed for hundreds and thousands of substances by government bodies such as the Health & Safety Executive, Public Health England, the Environment Agency, the Foods Standards Agency and in EU by the European Chemicals Agency and European Commission Joint Research Centre. Risk assessment relies on a significant body of scientific data and high calibre expertise to interpret the evidence and inform policymakers on the risk and impact of potential adverse health and environmental outcomes. There is an opportunity to link environmental policy to health and wellbeing policies and a principle through which to do this, is via scientifically informed integrated risk and impact assessments. See also principles of risk assessment and risk management from the health and safety executive

Dossiers of data are complex and extensive, well into hundreds, sometimes thousands of pages of data that require significant resources, independent review and interpretation. Independent 'authoritative' committees linked to government bodies recruit typically academics but also independent consultants to take a higher level view around the proposed interpretations of the submitted data packages surrounding a substance or product safety dossier. This system of independent scientific review, where all real and perceived conflicts of interest are managed transparently, provides society with confidence that safety decisions have been arrived at in an independent and objective way, based on scientific evidence and knowledge, and not vested interests.

For example, in anticipation of the additional workload in the area of foods safety after Brexit, the UK Foods Standards Agency (FSA) is currently in the process of recruiting 40 more experts to their scientific committee structures (Committee on Toxicity (COT), Committee on Mutagenicity).

Scientists have an important role in illustrating the scale of the risk and options the government might have, but the government must take the policy decision on what is an acceptable risk for society. A transparent set of decision making principles are needed for doing so, coming back to point 1 above.

For new chemicals, the principles and guidelines of the EU REACH data generation processes should be followed. These guidelines are based on years of toxicological risk assessment work and based on OECD guidelines for chemicals testing that have stood the test of time and are accepted globally.

However, chemicals safety evaluation is on a path to disruptive change through scientific advancement. The years ahead will result in key developments of new science fo

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