



THE GREAT DETOX

Europe's plan to rapidly ban notorious families of toxic chemicals still widely used in consumer products

Media briefing - 25 April 2022

With a historic failure to regulate the growing production and pollution of toxic chemicals, the EU has today (25 April) published a [Restrictions Roadmap](#): the broad and rapid phase-out of some of the most notorious substances still found in almost all manufactured products on the European market. The roadmap has not yet been covered by the mainstream media. This briefing provides details on this bold pledge, its justification and industry resistance.

The context: growing chemical production, impacts and regulatory failure

The EU has some of the world's strictest chemical controls. However, in practice, they are incredibly slow and failing to control a rising tide of chemical production and pollution, its health and environmental impacts.

There are more than [190 million synthetic chemicals](#) registered globally. Global chemicals sales [more than doubled](#) between 2000 and 2017, and are expected to double again [by 2030](#) and [quadruple](#) by 2060. [Three quarters](#) (by volume) of chemicals produced in Europe are hazardous, a percentage largely [unchanged since 2004](#). Scientists recently [declared](#) that chemical pollution had crossed a planetary boundary, while last month a UN [environmental report](#) found that chemical pollution is causing more deaths than Covid-19.

The EU has made most progress restricting chemicals from cosmetics and toys. From 2009 to 1 March 2022, 1,680 chemicals have been banned from cosmetics and a further 323 restricted (allowed only under certain conditions), while in the same period 1,775 chemicals have been banned from toys. This is more than any other world region, but amounts to less than what has been proposed in the Restrictions Roadmap, justifying the EEB claim that it is the biggest ever step forward anywhere. The chemicals legislation that applies to the broadest range of products is [REACH](#), where the EU has restricted just 15 chemicals in the last 14 years under REACH Regulation, little more than one substance per year and often limited to bizarre uses, such as PAHs in clay targets for shooting or cadmium in artist paints, while globally, industry creates a



new chemical every [1.4 seconds](#), on average. The result is that large volumes of the most chemicals known to have serious health impacts (carcinogens, mutagens, reprotoxicants, endocrine disruptors among many others) remain [widely used in European consumer products](#), including childcare products, such as nappies / diapers and dummies / pacifiers for babies.

That is because despite having a “no data, no market” [rule](#), in practice the EU gives permission to use chemicals after companies share limited amounts of their hazard data with officials. For years, industry submitted data to an automated system that machine checked the presence of that data, not its accuracy or reliability, and then officials granted market authorisation. The majority of industry data turned out to be seriously [flawed](#) and a poor guide to chemical hazards. More recently, manual checks are now in place, but that has come too late for the vast majority of substances now in use. Embarrassing investigations by [German](#) officials found that most substances on the market break safety rules, while [member states](#) found that most chemicals checked are being used dangerously, in an uncontrolled manner. The European Chemicals Agency [warned](#) in March 2021 that the levels of non compliance keeps rising and today almost all chemicals on the market (93%) lack critical information about their potential hazards, including carcinogenicity. Regulators had little idea of where the chemicals were used, until recent years. In response, NGOs suggest the EU actually has a “no data, no problem” rule. Once on the market, it takes officials decades to prove “unacceptable risk” and phase out chemicals known to be dangerous, mostly because industry combats attempts to provide officials with the necessary data. If a ban is finally agreed, industry can alter the chemical composition of their products to produce a slightly modified sister substance that is often just as dangerous, a tactic called “[regrettable substitution](#)”. Thus flame retardants, [promoted](#) by the tobacco industry in order to avoid regulation, were first based on chlorinated compounds, then fluorinated, and today brominated and phosphate-based as industry avoided regulation through regrettable substitution. Most flame retardants are highly toxic, found in all homes, and in the blood of most humans alive today. There are an estimated [200,000 chemicals](#) used in Europe, but industry can draw from the vast pool of 190 million for potential chemical substitutes.

Daily exposure to a mix of toxic substances is linked to rising [health](#), [fertility](#), [developmental](#) threats, as well as the collapse of [insect](#), [bird](#) and [mammal](#) populations. Chemicals with dangerous properties are [ubiquitous](#) in food, drinking water, products, our homes and workplaces. Some [700](#) industrial chemicals are found in humans today that were not present in our grandparents. Doctors describe babies as born “[pre-polluted](#)”.

Europe-wide official [polling](#) in 2020 showed that 84% of Europeans are worried about the impact of chemicals present in everyday products on their health and 90% are worried about their impact on the environment.



Regulatory action

Recognising the growing threat and widespread public concern, the European Commission announced in December 2019 a [European Green Deal](#), which included a “zero pollution ambition for a toxic-free environment” and a “green oath: ‘do no harm’”. This led in October 2020 to a [Chemicals Strategy for Sustainability Towards a Toxic-Free Environment](#) (EEB [reaction](#)), which proposed banning groups of the most harmful chemicals in consumer products and fundamentally reorienting regulation away from controlling harmful chemicals to avoiding their production, among other important changes. At the strategy’s launch, European Commission vice president Frans Timmermans [said](#): “In most cases we now assess these chemicals one by one, and remove them when we find out that they are unsafe. We will just flip this logic on its head. Instead of reacting, we want to prevent. As a rule, the use of the most harmful substances will be prohibited in consumer products.”

The strategy proposes rapidly banning hazardous chemicals currently used to make a wide range of consumer products, and prevent others being created by fast-tracking regulatory processes. Instead of officials spending years proving chemicals pose an “unacceptable risk”, a streamlined approach will be applied to thousands of chemicals with the potential to either cause cancer, harm the immune system, reproduction, endocrine systems or have other hazardous properties. The process is known as the generic approach to risk management ([GRA](#)). Its details are still being decided, but the EEB believes that any substance classified as a [substance of concern](#) should be banned from all products within months. Making GRA the default approach to EU chemical controls requires changes to the REACH Regulation and product laws, changes the Commission has scheduled to be in place by between 2025 - 2027.

[Research](#) paid for by the European chemical industry body CEFIC, published on 2 December 2021, pointed to two legal instruments. “According to this first study, as many as 12,000 substances could potentially be in the scope of the two upcoming legislative proposals alone – the changes to Classification, Packaging and Labelling Regulation ([CLP](#)) and the application of a Generic Risk Approach (GRA).” The study found that “74% of products in scope to be impacted by the addition of hazards to CLP and the extension of the GRA are professional or consumer products”

Aiming to make a point about disruption to the production of its toxic products, CEFIC acknowledged that as many as 12,000 substances are present in 74% of consumer or professional products that have one or more of the following properties of serious concern: endocrine disrupting; persistent, bioaccumulative and toxic; very persistent and very bioaccumulative, persistent, mobile and toxic; very persistent and very mobile; are toxic to our immune system, brain functions or specific organs (e.g. liver), cause respiratory allergies, are suspected carcinogens or are toxic to aquatic life. In other words, millions of varieties of consumer products on the shelves throughout Europe today have the potential to cause serious health and environmental impacts.



What is new? The 'Restrictions Roadmap'

In order to make progress before GRA comes into force (2025-2027), the Commission today tabled a [Restrictions Roadmap](#), an initiative [supported](#) unanimously by member governments. This will use the existing slow system, but will restrict large groups of some of the most hazardous chemicals still in use. Though a minority of chemicals in the roadmap are not facing new ban proposals, having been tabled in previous years, the majority of restriction proposals are entirely new. This represents the biggest move to detoxify the European economy that the EU has ever taken, the EEB believes.

The roadmap for the first time restricts groups of chemicals as a rule, rather than as an exception. The group approach means regulating all substances according to characteristics that distinguish one family from another, paired with a principle known as 'read-across', where all the substances in a family are considered as hazardous as the most dangerous member of the family. The roadmap covers thousands of chemical compounds, all of which the public is widely exposed to and all of which are known to be highly hazardous. NGOs consider the roadmap to be the first serious test of the Commission's Chemical Strategy.

A 'Pool 0' lists 12 proposals for bans that are not new. A 'Pool 1' lists new proposals by the Commission and member states, including large families of substances that have gained a bad public reputation going back decades, including plastic PVC, and flame retardants (see below for detail). A 'Pool 2' lists different regulatory actions foreseen for other groups of hazardous chemicals beyond restrictions.

The EEB singles out 6 groups of chemicals that it dubs the 'Sick Six'. These have two things in common: they are highly hazardous but still widely used in European consumer goods. The restriction roadmap is a political commitment, it is not the formal beginning of regulation. The proposal will see all the Sick Six in the regulatory pipeline by 2023. It then takes at least two years before the chemical bans are in force.

The European Chemicals Agency acknowledges that laboratory test animals can be saved if the [grouping and read-across](#) approaches are applied correctly. The EEB believes a large number of test animals could be saved.

The Sick Six



- Polyvinyl Chloride (PVC) and its additives

Reason for NGO priority: PVC is one of the most problematic forms of plastic for human health and the environment, and the least recyclable of all plastics. Safer [alternatives](#) are already available for virtually all PVC uses.

Rough chemical group numbers: there are many [types of PVC](#): rigid, flexible, chlorinated, low-smoke, etc.

Chemical additives, used in significant quantities to transform the properties of PVC (durability, colour etc), are included in the scope of the restriction proposal. Additives are used in rather high proportions (10-60%). For example, PVC toys may contain up to 40% of phthalates.

Typical toxic additives of PVC are: phthalates (around 30 chemicals), highly fluorinated chemicals, such as PFAS (more than 4,000), brominated flame retardants (around 25), bisphenols (over 200) and heavy metals (around 40, including cadmium, lead, mercury, chromium VI).

Volumes in use in the EU: In Europe, PVC is the fourth most common type of plastic, with around 6.5 million tonnes of PVC products manufactured annually.

Common uses: PVC is used in a very wide range of products, from toys and inflatable products (pools, water sports accessories, trampolines) to packaging and food contact materials, such as food wraps, to artificial Christmas trees, textiles like 'vegan leather', furniture, shoes, building materials, etc.). Citizens and the environment are widely exposed on a daily basis.

Known health or other impacts:

PVC is very harmful, in production, use and in waste streams. It is nearly 60% chlorine by weight. Chlorine production consumes huge amounts of energy. PVC is manufactured with vinyl chloride monomer, a known carcinogen. Its production requires large amounts of very toxic additives. Many additives are highly volatile, so exposure continues during use.

Regarding the hazards of [additives](#), several **phthalates** are classified as reprotoxicants and endocrine disruptors; all **highly fluorinated chemicals** are highly persistent, most either bioaccumulative or mobile and many toxic; several **brominated flame retardants** (BFR) are well known persistent organic pollutants and cause a wide range of health problems (see below); many **bisphenols** (BPA, BPS, BPF, BPAF): are endocrine disruptors and are linked to damage to the reproductive system, obesity, diabetes, breast cancer, damage to neurodevelopment and immunotoxicity; **heavy metals** (including cadmium, lead, mercury and chromium VI) are well known carcinogens and reprotoxicants.



PVC waste is highly problematic. Incineration or landfilling causes very damaging effects to the environment and human health by releasing dioxines, very potent carcinogens that are also highly persistent in the environment.

PVC is one of the five top hazardous polymers following CPA's [Plastics Scorecard](#).

Proposal from: European Commission.

- PFAS (non essential uses)

Reason for NGO priority: Perfluoroalkyl and polyfluoroalkyl substances ([PFAS](#)) are a large family of hazardous chemicals found in many products and polluting the environment. They are virtually impossible to remove and so are known as 'forever chemicals'. The vast majority of humans throughout the planet are contaminated and babies are born with PFAS already in their bodies.

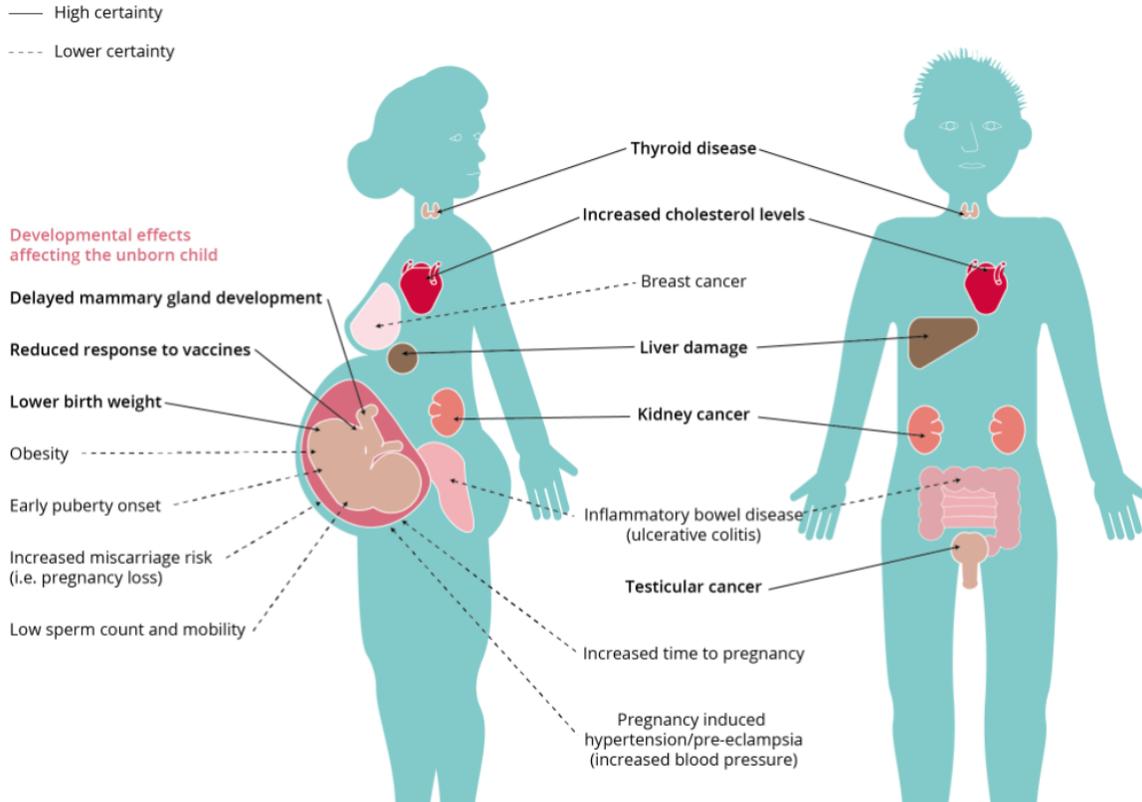
Rough chemical family numbers; [More than 4,700](#).

Volumes in use in the EU; Around [100,000 sites](#) in Europe are estimated to cause PFAS pollution into the environment, many near [urban areas](#). [Registered volumes](#) in Europe vary from 33,000 to 334,000 tonnes per year.

Common uses; PFAS are used in a wide variety of consumer items, from takeaway and other food packaging to non-stick coatings, stain-free and waterproof clothes to sun-cream and cosmetics, even dental floss.

Known health or other impacts; All PFAS are very persistent chemicals that either accumulate in humans, animals and the environment or are very mobile so they travel long distances and accumulate in water, including drinking water. Of the relatively few well-studied PFAS, most are considered moderately to highly toxic, particularly for children's development. Many PFAS are highly accumulative or mobile, found in air, soil, plants and animals across Europe and in drinking water in Austria, Belgium, Denmark, France, Germany, Italy, the Netherlands and Sweden.

Figure 1. Effects of PFAS on human health



Source: EEA: <https://www.eea.europa.eu/publications/emerging-chemical-risks-in-europe>

Proposed by 5 member states: Germany, the Netherlands, Sweden, Norway and Denmark. No definition for “essential uses” has yet been defined by the European Commission, so this will be left to member states.

-Bisphenols, including BPA

Reason for NGO priority: bisphenols are endocrine disruptors used in very high volumes in plastics like PVC and polycarbonate and epoxy resins. Citizens are widely exposed through plastic food and beverage packaging. As an endocrine disruptor, there is no safe level of exposure.

Rough chemical family numbers: over 200 substances, 37 of which may have endocrine disrupting properties as described in the EU biomonitoring programme [HBM4EU](#).



Volumes in use in the EU: bisphenols are among the highest volume chemicals produced globally. In the EU, between 100,000 and a million tonnes are produced annually.

Common uses: BPA is [found](#) in a wide range of consumer goods, such as sports equipment, CDs, DVDs, automobile parts and food containers, such as reusable beverage bottles and reusable plastic tableware.

Known health or other impacts: BPA [harms](#) fertility and the unborn children and disrupts hormones. Scientific studies suggest BPA could be linked to obesity, diabetes and may harm our immune systems.

Scientists have found [common](#) replacement chemicals, such as BPF, BPS, BPAF, along with Bisphenol Z (BPZ), Bisphenol E (BPE) and Bisphenol B (BPB) are [suspected](#) to be hormone disrupting and have been [linked](#) to health effects, including early puberty, disrupted metabolism and thyroid function and behavioural effects, among other impacts.

Proposed by: the European Commission.

-Flame retardants

Reason for NGO priority: High environmental and health concern, broad public and environmental exposure, little action by the EU so far. Decades-long pattern of regrettable substitution to avoid regulation.

Rough chemical family numbers: 50-100

Volumes in use in the EU: likely a few hundred thousand tonnes per year.

Common uses: These chemicals are required by law to be used in a broad range of household goods, including childcare products (such as crib mattresses), furniture (e.g. children's high chairs) and textiles (e.g. car seats), building materials and electronics "[to delay fires](#)". However, they have a [dubious record](#) of actually slowing fire.

Known health or other impacts: many are persistent, bioaccumulative and toxic, frequently linked to cancer, reproductive toxicity, neurodevelopmental problems and other serious health concerns. Toxicity to aquatic organisms is also common. Firefighters say smoke from fires has become more [toxic](#) because of flame retardants, warning "[it's killing us](#)".

Proposed by: the European Commission.



- Chemicals in childcare products that cause cancer, genetic mutation or harm the reproductive system (CMRs)

Reason for NGO priority: Children are [particularly vulnerable](#) to hazardous chemicals, but most are daily exposed to chemicals in childcare articles.

Chemical family numbers: [1,775 chemicals](#) that are known or suspected to cause cancer, genetic mutation or harm the reproductive system (CMRs).

Volumes in use in the EU: The large numbers of chemicals make this calculation difficult.

Common uses: Baby/children pacifiers (dummies), teething toys, bathing products, general body care products (such as baby soaps, shampoos or creams), feeding products (such as children kitchenware or cutlery), etc.

Known health or other impacts: cancer, hereditary mutations such as cystic fibrosis, haemophilia, and sickle cell disease as well as toxicity to the reproductive organs (including male genital deformities), causing reproductive ability or capacity and developmental disorders.

Proposed by: the European Commission.

-Toxic chemicals in single use nappies / diapers

Reason for NGO priority: babies are extremely vulnerable to hazardous chemicals and can be absorbed through the skin. Hazardous chemicals are found in single-use nappies worn by babies almost constantly.

Rough chemical family numbers: dozens of hazardous chemicals have been identified in nappies, including [formaldehyde, PAHs, PCCD/Fs, DL-PCBs and PCB](#).

Volumes in use in EU: more than 90% of families in most of the EU use single-use baby nappies. A baby can use 3,800 to 4,800 nappies during infancy.

Common uses: most of the paper pulp used for manufacturing baby nappies comes from the US and is highly contaminated, a problem [known](#) by industry. It is the same pulp used in menstrual products and incontinence nappies.

Known health or other impacts: formaldehyde is a carcinogen, mutagen and skin sensitiser. PAHs are carcinogens and endocrine disruptors. Dioxins are carcinogens, reprotoxicants and endocrine disruptors. PCBs are carcinogens and reprotoxicants, and long-term exposure is



associated with hepatic, immunological, neurological, metabolic and endocrine effects. Any exposure to PAHs, dioxins and PCBs is considered hazardous.

Proposed by: France.

Next steps

The Restrictions Roadmap will ban chemicals under [REACH Regulation](#). Member states and the Commission will now examine each proposed ban in detail. If either decides to take a ban forward, it will then be submitted to [ECHA](#) for the agency's scientific opinion. This opinion then goes to the Commission (DG Environment and DG Grow) for a 'decision' on whether to approve or reject it. This 'decision' still needs to then be approved through an anonymous, qualified majority vote by member state officials who are part of an opaque body called the [REACH Committee](#), which is formally part of the European Commission. The committee's decisions can be vetoed by the European Parliament or the European Council, but this power is rarely used. Once approved, the ban will likely have a "transition period" of months or years before coming into force.

The European chemical industry has a turnover of €543 billion per year. The fourth largest industry in the EU, it is one of the most polluting, energy and resource-intensive sectors. Owned by some of Europe's richest and most powerful men, it has major lobbying power. The EEB hopes that the list of substances agreed in the Restrictions Roadmap will not be altered. But, based on comparable historic examples, there is a strong risk that industry will win long delays and broad exemptions.

Opposition to regulating chemicals in consumer products is strong, based on weak factors or opinions. On the roadmap specifically, industry has raised a "storm of protest", according to reports. Cosmetics Europe, A.I.S.E. and DUCC say the roadmap's proposed ban of skin sensitisers will affect "many thousands of chemicals and practically all consumer-product sectors".

NGO reaction

EEB chemicals policy manager, Tatiana Santos, said:

"EU chemical controls are achingly slow at the moment. The general rule is that business interests come first, health and environment comes second. It is way too easy to start using poorly tested chemicals and almost impossible to restrict them when we discover they are dangerous and could be doing real harm.



“What the EU is planning is the boldest ‘detox’ we have seen ever. Petro-chemical industry lobbyists are shocked at what is now on the table. It seems clear that the European Commission is serious about the toxic-free environment pledge made in its EU Green Deal. There are some no-brainers in there, like toxic chemicals out of childcare products. But flame retardants and bisphenols are widely used, so it takes more political courage to ban them. Previous administrations sat on their hands for decades.

“Almost every manufactured product in shops and in our homes will be impacted. We are looking at the promise of largely toxic-free products by 2030. Of course industry will oppose this fiercely. But green chemistry is the future and they should accept this wise change in direction.”

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