DIGITALEUROPE views on upcoming proposal for EU REACH restriction of flame retardants

Executive summary

The EU REACH Restrictions Roadmap published April 2022 anticipates the European Commission's plans to issue a mandate to ECHA in 2023 to prepare a proposal for an EU REACH restriction of flame retardants. The agenda for the CARACAL meeting on 28 March 2023 included a discussion about ECHA's regulatory strategy on flame retardants published 15 March.

DIGITALEUROPE members have been key contributors to EU REACH since its inception. As such, we look forward to continuing to share views, experiences and concrete recommendations with all stakeholders to jointly explore how better regulation can benefit society.

DIGITALEUROPE welcomes the balanced outlook in the regulatory strategy which proposes a phased approach to addressing specific groups of flame retardants. We agree that regulations should focus on ensuring that the appropriate safe chemistry is used — the right flame retardant for the right use. In this paper, we recommend ways in which this strategy can be best implemented for electronic products.

Introduction

The average home contains more than 20 electronic products, including televisions, smartphones, computers, gaming systems, and tablets[1]. For decades, flame retardants have provided an important layer of fire protection that helps save lives and property by preventing ignition of electronic products or slowing combustion if ignition does occur.

Fire prevention remains a serious public health issue. Since the introduction of strict fire safety standards in the U.S. — including those standards where flame retardants are a useful tool — fires have been reduced by over 50% between 1980 and 2016[2]. The U.S. National Institutes of Standard and Technology notes:

> 66 *"The fact that fires originating from consumer electronic equipment represents less than 1% of all residential fires in the United States is largely credited to the use of flame retardants."* [3]

Essential for electronics safety

Electronic products are unique because they have potential ignition sources arising from essential components of the product — circuit boards, batteries, and other electrified components. Since 2017, about 500 different types of electronic products have been recalled, withdrawn, or banned from sale in the EU due to fire hazards. One of the most important benefits of flame retardants in product design is they can stop small ignition events from turning into larger fires.

▶▶ **Electrical current:** For electronics to operate, the circuit boards and other interior parts like fans, cables, and connectors carry electrical currents. These currents generate heat and can be potential sources of internal ignition, which is why flame retardants are used to mitigate the risk of fire and to help meet flammability standards.

▶▶ **Power source:** Batteries are also potential sources of internal ignition. Over-current and over-temperature conditions can be created by external shorts and overcharging and can cause flame ignition within the electronic product. Flame retardants can help fire harden the battery compartment and serve as a critical layer of protection between the battery and the rest of the product.

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[1] TJ McCue, '24 Electronic Products Per Household -- Got Recycling?' Forbes, 13/01/2013

[2] Hylton J.G. Haynes, 'Fire Loss in the United States 2016, 'National Fire Protection, 06/2018

[3] https://www.flameretardantfacts.com/wp-content/uploads/2020/06/Safety-and-Benefits-of-Flame-Retardants-in-Electronics.pdf
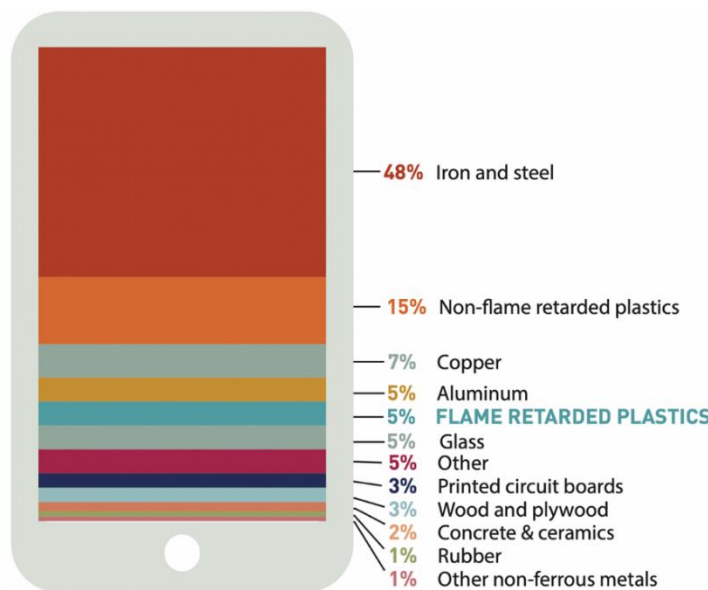
Composition of flame retardants in electronic products

Electronic product manufacturers must balance the need to meet consumer demand for smaller, lighter, and more powerful electronics with the need to ensure that those products meet safety standards. Manufacturers use plastics to achieve product performance goals. If left untreated, many of these plastics are flammable, so flame retardants serve as a critical line of defense against fire. Replacing plastics with materials like metals in some applications would not only increase weight, it would also increase the risk of shock and heat transfer. In other applications flame retardant plastics are critical and can't be substituted for other materials, example is printed circuit boards. In many applications, flame retarded plastics are the best choice for manufacturers seeking product safety and fire protection.

On average, flame retarded plastics account for less than 5% of materials found in electronic products, Figure 1, according to the United Nations . While flame retarded plastics are essential to product, they are used in electronics in a targeted manner, encapsulated or reacted into the plastic, and often only on the inner workings of the product.

Figure 1: Average material composition of electronic products

Electronics manufacturers include specific flame retardants in their products based on the product's attributes, properties, usage, and potential ignition threats. The term "flame retardant" refers to a function, not a distinct family of chemicals. Many different chemistries, with different properties and molecular structures, act as flame retardants, and these chemicals are often combined for effectiveness. A variety of flame retardants are necessary because plastic materials that need to be made fire-resistant are very different, as are the end-use performance requirements of the final product.

Safety standards and environmental protection

Striking the right balance between environmental protection and fire safety is an objective we all share. The electronics industry works with regulators, standards-setting bodies, and other stakeholders to continuously evaluate the materials it uses in its products to ensure products meet safety standards and environmental protection requirements.

Regulatory bodies such as the U.S. EPA and CPSC, and standard-setting organizations such as IEC, NFPA, ICC, and UL have an important role in testing, approving, and overseeing the safe use of flame retardants and the products in which they are used. Considerable efforts are made to continuously improve these standards, such as EN IEC 62368-1:2020 as a harmonised standard to the EU Low Voltage Directive 2014/35/EU. This standard replaces the prescriptive approaches in the superseded EN 60065 and EN 60950-1 standards and gives electronics manufacturers greater flexibility to design safety measures in keeping with their products, while at the same time requiring rigorous analysis to ensure that all products are safe to use and cannot cause bodily injury or fire.

Policy recommendations

DIGITALEUROPE members emphasise that our use of flame retardants in electronic products provides essential fire protection to the public. We welcome the balanced and phased approach in the regulatory strategy and agree that **regulations should focus on ensuring that the appropriate safe chemistry is used — the right flame retardant for the right use.** We recommend a sector-specific approach for implementing the strategy, particularly for electronic products which are unique because they have potential ignition sources arising from essential components of the product.

- ▸ For electronic products, **a better option than the EU REACH regulation would be a potential restriction under the EU RoHS Directive**, which has been implemented very successfully and has become an example for RoHS-type laws across the world, reflected in global regulations in over 50 jurisdictions outside the EEA.

- ▸ The EU RoHS Directive includes several important advantages, including **clear processes for managing time-limited exemptions and the 'repair as produced principle' which is essential for a circular economy** and saving resources by extending the lifetime of products already placed on the market.

- ▸ RoHS has largely influenced how the electronics industry manages compliance with substance restrictions and suppliers' expert understanding of the RoHS Directive ensures very high levels of compliance with RoHS restrictions. **These successful processes may**

be weakened if chemicals restrictions become fragmented across different regulations.

▶▶ Finally, we recommend establishing **defined thresholds and a list of chemical identifiers for the most harmful substances** for potential restriction under the EU RoHS Directive.

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