

The Unique Fire Safety Threats to Electronics

FLAME RETARDANTS ARE CRITICAL SAFETY TOOLS

INTRODUCTION

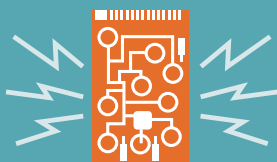
The average home contains more than 20 electronic products, including televisions, smartphones, computers, gaming systems, and tablets¹. These devices are embedded into our everyday lives, yet they could not be used safely if it weren't for flame retardants. Have you ever noticed a spark, overheating, melting, or smoke from an electrical device? Flame retardants are one of the key reasons these failures do not escalate into something more serious like a home or office fire.



INTERNAL IGNITION: ELECTRONICS PRESENT UNIQUE FIRE SAFETY RISKS

The performance properties that make electronics so essential to our lives — utility, speed, durability, and extended use — are powered by potential ignition sources that rely on flame retardants to meet safety standards. Fire is still a very real and present danger. Since 2017, nearly 3 million various electronic products have been recalled due to fire hazards².

ELECTRICAL CURRENTS



In order 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 an internal ignition source, which is why flame retardants are used to mitigate the risk of fire and to help meet flammability standards.

POWER SOURCE



Batteries are a potential source of internal ignition. Over-current and over-temperature conditions can be created by external shorts and overcharging and 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 batteries and the rest of the device.

PLASTICS IN ELECTRONICS

Electronic device manufacturers must balance the need to meet consumer demand for smaller, lighter, and more powerful electronics with need to ensure that those devices meet performance and safety standards. Plastics have revolutionized electronic product designs. Manufacturers use plastics to ensure device performance goals, and plastic casings serve as an enclosure that protects from fire and shock risk. If left untreated, these plastics are flammable, so flame retardants serve as a critical line of defense against fire.

FOR MORE INFORMATION: americanchemistry.com/flameretardants

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

²Consumer Product Safety Commission, '[Recall List](#),' 2/25/2019.