

# Composition of Electronic and Electrical Equipment

FLAME RETARDANTS ARE CRITICAL SAFETY TOOLS

## INTRODUCTION

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.

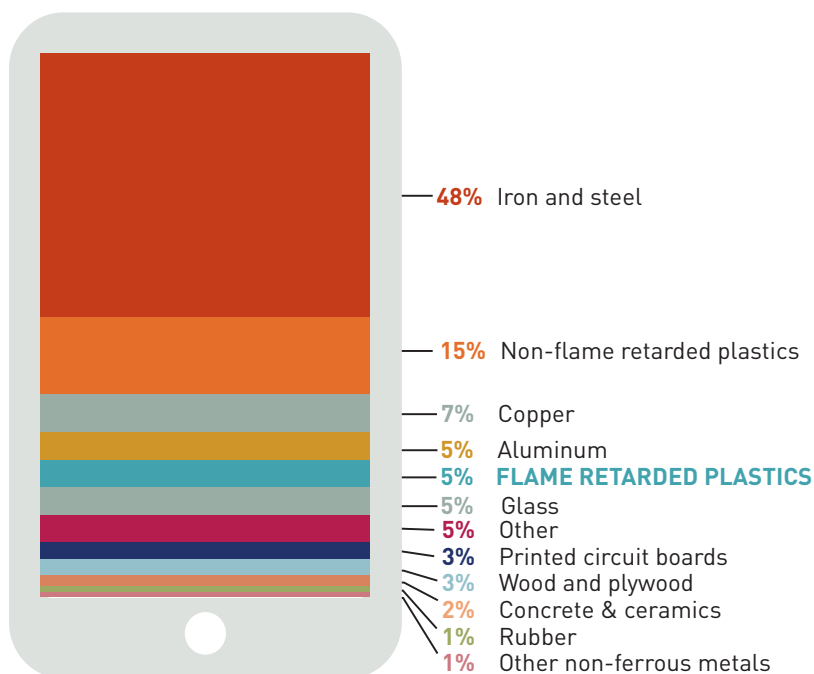
Electronic and electrical products are composed of a wide variety of materials that enhance usability, performance, and safety. On average, flame retarded plastics account for less than five percent of materials found in electronic and electrical products, according to the United Nations<sup>1</sup>. Flame retardants are a critical safety component because electronics have a variety of potential ignition sources generated by the essential components of the product, including circuit boards, batteries, wiring, fans, connectors, and even plugs.

*What is one of the most important benefits of flame retardants in product design? They stop small ignition events from turning into larger fire scenarios — no ignition, no fire.*

While flame retarded plastics are essential to product safety, they are used in electronics in a targeted manner, encapsulated or reacted into the plastic, and often only on the inner workings of the device. Consequently, they are not a significant source of exposure.

Within electronics, each product category (e.g., TVs, phones, computers, appliances) has unique design, performance, and safety requirements. Electronic manufacturers need a broad array of material choices, including various plastics and flame retardants, to help meet these requirements. Material selection has a direct impact on utility, functionality, safety, cost, and weight of the product.

### AVERAGE COMPOSITION OF ELECTRONICS AND ELECTRICAL EQUIPMENT



While flame retardants are essential to product safety, they are in **less than 5%** of materials that compose electronics and electrical equipment.<sup>1</sup>

FOR MORE INFORMATION: [americanchemistry.com/flameretardants](http://americanchemistry.com/flameretardants)

<sup>1</sup> United Nations University, 2008 Review of Directive 2002/96 on WEEE, Aug. 2007.