

Earthwise™ GreenArmor™ saves lives and protects the planet.

Recyclability comparison highlights positive attributes for environment and sustainability.



The use of flame retardants can result in up to 15 times the amount of escape time.

GreenArmor, a new innovative flame retardant technology material marks a new direction in fire safety for hundreds of millions of people worldwide.

Every day it seems we are surrounded with more and more electronics of every kind: laptop and desktop computers, music players, cell phones, smart phones, flat screen televisions, scanners and copiers. Even home appliances like coffee makers, toasters, ranges and refrigerators have now gone high-tech. Each one of these items can be a huge source of convenience for society. And in certain cases, all can pose a risk of fire.

To protect against the possibility of fire, companies have developed chemical solutions. Fortunately, Albemarle®, with a history of making life-enriching chemicals for over 100 years, is the leading manufacturer of flame retardants that not only save lives, but protect the planet.

Flame retardants slow the ignition and growth of flames, giving consumers as well as firefighters valuable time to escape danger, saving lives and property.

Flame retardant facts.

Room burn tests of flame retardant products have shown that they provide more than 15 times the amount of escape time. This valuable time can mean the difference between life and death.

In Room burn tests where a TV was the first item ignited, the non-flame retardant TV caught fire and resulted in flashover in approximately 7 minutes. In the same test, the flame retardant TV did not support combustion and could not be ignited.

GreenArmor is non-bioaccumulative, non-toxic and recyclable.

GreenArmor is an innovative polymer solution, which means the chemical is too large to be absorbed by the body or animal life. As a result of its polymeric character, GreenArmor exists in a pelletized form rather than in powder form and is designed to be an environmentally preferred product. GreenArmor is a highly stable product that lends itself to efficient recycling of plastics. When combined with the good practices driven through such programs as VECAP (Voluntary Emissions Control Action Program), a program pioneered by Albemarle, we can be confident that emissions are truly minimal.

What happens to products containing these chemicals when their useful life is complete?

Albemarle has done extensive research on the best ways to help protect the planet after the chemical is finished saving lives. There are a number of methods of recycling specifically for plastics of electronics and electrical equipment (EEE). All of the following are acceptable



options and include: mechanical recycling, feedstock recovery (for brominated flame retardant systems), and waste-to-energy recovery.

Mechanical recycle of plastics from EEE applications is growing in importance and in many cases, fire safety treated product materials can simply be used again to make new products.

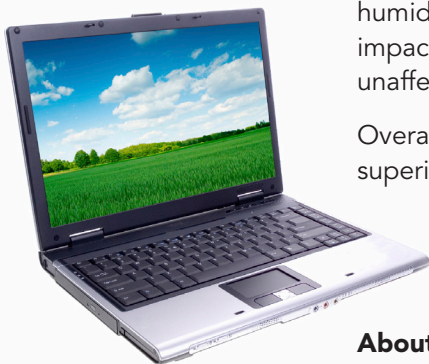
Staying fire safe after products are recycled.

The ability to maintain superior flame retardancy after being recycled is a crucial factor in the success of this process and GreenArmor tested very well in this important area.

Exposure to harsh environments.

Another important factor to consider is the exposure of electronics and other fire safety protected property like furniture to harsh environments, such as outdoor storage or in hot, humid environments for extended periods of time. These conditions can have a dramatic impact on the results of recycling. Again, materials containing GreenArmor were virtually unaffected by these conditions and displayed excellent recyclability.

Overall, the results of all testing clearly show that the materials containing GreenArmor has superior recyclability to the most common fire safety alternatives.



About Albemarle

Albemarle Corporation, headquartered in Baton Rouge, Louisiana, is a leading global developer, manufacturer, and marketer of highly-engineered specialty chemicals for consumer electronics, petroleum and petrochemical processing, transportation and industrial products, pharmaceuticals, agricultural products, and construction and packaging materials. The Company is committed to global sustainability and is advancing its eco practices and solutions in its three business segments, Polymer Solutions, Catalysts, and Fine Chemicals. Albemarle employs over 4,100 people and serves customers in approximately 100 countries.

About the author

Susan D. Landry, *Albemarle Corporation, Advisor, Fire Safety & Advocacy*

With over twenty-five years with Albemarle, Susan D. Landry serves as the company's Advisor, Fire Safety & Advocacy. In this role, Susan promotes the benefits of Albemarle's flame retardant products with a wide variety of stakeholders, particularly in the U.S. A respected expert on flame retardants, Susan has received fourteen patents related to these products and has presented numerous papers and presentations on flame retardants, with a particular emphasis on fire safety, regulatory, and recyclability. She recently authored a chapter ("Changing Chemical Regulations and Demands") in the American Chemical Society Book entitled, "Fire Retardancy of Polymeric Materials, 2nd Edition." Susan has served on an assessment panel in the Building & Fire Research Laboratory at the National Institute of Standards and Technology and she is a member of the SPE, SFPE, and SAE. Susan received a Bachelor of Science in Polymer Science from the University of Southern Mississippi in 1984.