Flame Retardants: Achieving Safety and Performance Requirements for Consumer Electronics

Date: November 6, 2024

Location: UL Prospector Webinar

American Chemistry Council | North American Flame Retardant Alliance

Moderator

Owen Jappen – Director, Chemical Products & Technology at American Chemistry Council

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Disclaimer

This webinar is for informational purposes only.

Any reference to brand names is purely for context and does not imply endorsement.

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Antitrust Compliance

Do not, in fact or appearance, discuss or exchange information on:

Prices, including:

- Individual company prices, price changes, price differentials, markups, discounts, allowances, credit terms, etc.;
- Individual company data on costs, production, capacity, inventories, sales, etc.; and
- Industry pricing policies, price levels, price changes, differentials, etc.

Production, including:

- Plans of individual companies concerning the design, production, distribution or marketing of particular products, including proposed territories or customers; and
- Changes in industry production, capacity, or inventories.

Transportation rates:

- Rates or rate policies for individual shipments, including basing point systems, zone prices, freight equalization, etc.

Market procedures, including:

- Company bids on contracts for particular products; company procedures for responding to bid invitations; and
- Matters relating to actual or potential individual suppliers or customers that might have the effect of excluding them from any market or influencing the business conduct of firms toward them.

Meeting Agenda

1. 12:00 – Welcome, Opening Remarks & Anti-Trust Guidelines
2. 12:10 – Panel Discussion: Flame Retardants in Consumer Electronics
3. 12:35 – Case Study Presentation: Impact of Flame Retardants in Consumer Electronics Product
4. 12:45 – Q&A Session
5. 12:55 – Next Steps & Resources
6. 1:00 – Closing Remarks

NAFRA's Mission is to enhance fire safety through the development and promotion of flame retardant technologies in a wide range of products.

NAFRA represents the world's foremost producers of flame retardants.

Our members are dedicated to improving fire safety performance in consumer products, promoting compliance with rigorous safety standards.

NAFRA advocates for strong, science-based chemical safety regulations that protect both users and workers who may be exposed to flame retardant chemicals.

While safeguarding users, NAFRA also promotes fire safety as a vital public health issue, helping to prevent fire-related injuries and loss of life.

Opening Remarks

WELCOME

Steve Scherrer, LANXESS Corporation

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The Critical Role of Flame Retardants in Fire Safety

Life-Saving Benefits of FRs

Fire Hazard Reduction: Flame Retardants reduce fire risks by slowing the spread of flames in products, providing critical time for evacuation.

Protection: These technologies have helped reduce fire-related deaths and injuries.

Regulatory Requirements

Fire Safety Standards: Flame retardants meet stringent regulations such as UL 94 for electronics.

Global Compliance: We support compliance with regulations like those from the U.S. CPSC and Canadian standards.

Role in Electronics

Preventing Failures: Flame retardants help prevent electrical fires caused by overheating or malfunctions.

Sustainability: Ongoing innovations make them safer and more environmentally friendly.

Panel Discussion

Tim Cassidy
Retired, Best Buy

Welcome

Rony Khoury,
Panasonic

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Selecting Materials

For Consumer Electronic and Electrical Product Designs

Timothy Cassidy - October 2024

Key Properties

Material Properties for Designs

- Electrical Isolation
  - Prevention of shock
  - Prevention of Arcing and Tracking
- Fire Prevention
- Burn Prevention
- Impact Resistance and Mechanical Properties
- Aesthetic and Form Considerations
- Material Costs and Availability

New Materials

Selection Considerations

- Compliance with Standards
- Manufacturability
- Availability
- Relative Costs of Materials


Panasonic
Flame Retardants:
Achieving Safety and Performance Requirements for Consumer Electronics
Rony Khoury
Chemical Regulatory Engineer
November 6, 2024
Create Today. Enrich Tomorrow.

Keeping Electronics and People Safe

- At Panasonic, we focus on building and selling high quality products to consumers, emphasizing durability and product safety. One area of promoting product safety is through the prevention of fire hazards, where flame retardants play a key role in suppressing fires and ensuring safety in everyday use of our products.
- Through our Panasonic Green IMPACT Plan, we also strive to find and implement sustainable solutions in our products, such as our resource recycling vision, taking recycled plastic resins and optimizing them to bring new life to these recycled materials.

Fire Safety Standards

- Our electronics are compliant with IEC 62368-1 and certified by UL.
- Applies to a wide range of Panasonic electronics, including:
  - Computing and networking products (military-grade Toughbook laptops)
  - Consumer electronics (Lumix cameras)
  - Displays and display units (Panasonic 4K OLED televisions)
- Products are designed to reduce the likelihood of ignition and spread of fire, specifying the type of protection required and acceptable voltages.

Flammability of Plastics

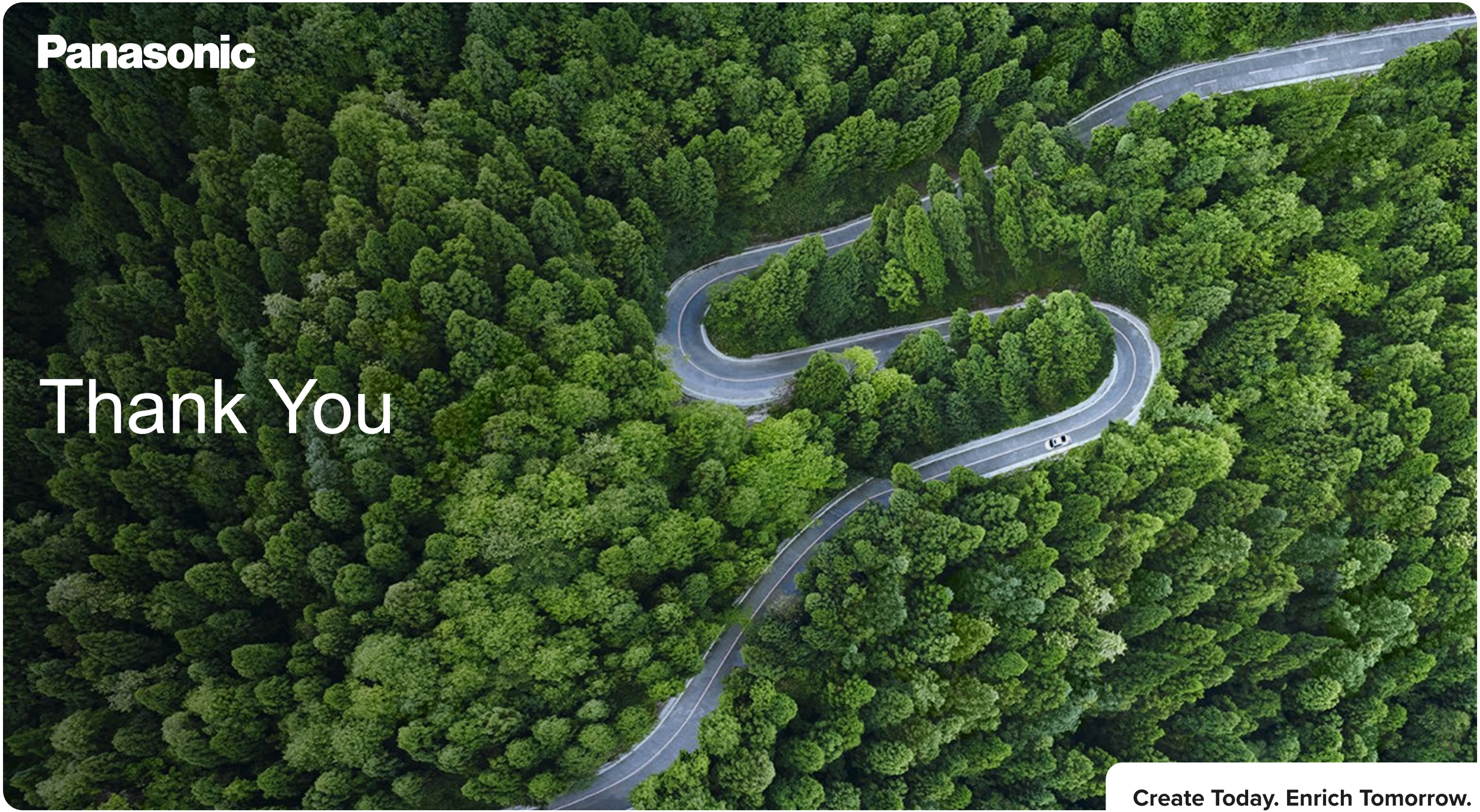
- UL 94 is a plastics flammability standard that tests how plastics burn in different orientations and thicknesses, categorizing them on their flammability rating. This standard guides us to select materials that are resistant to fire hazards.
- The plastics we use for our electronics are compliant with UL 94. The flame retardant used in each plastic is dependent on the type of plastic used in each component. Our products undergo rigorous testing to ensure that only the highest quality plastics and most effective flame retardants are used.

Challenges and Potential Risks

- Mandating less-effective alternative chemistries poses challenges and risks. Existing chemistries undergo rigorous fire safety testing before they are added to plastic resins. Mandating the use of newer alternatives may reduce the flammability rating of plastics, diminishing the quality and safety of the finished product.

Real World Applications

- Organohalogen flame retardants are now restricted for use in the plastic enclosures of select electronics products in the states of New York and Washington.
- By analyzing different alternatives and working through our supply chain, Panasonic has been able to reintroduce a range of new 4K OLED televisions to the US market where the external plastic enclosure is free of organohalogen flame retardants.
- Finding alternatives is not easy, and we rely heavily on the plastics manufacturers in our supply chain to conduct testing and implement safer chemistries.


Panasonic
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Case Study:
Industry Perspectives on Washington State's OFR Restrictions

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WELCOME

LeaAnne Forest, Manager
Chemical Products & Technology
Divison at American Chemistry Council

American Chemistry Council

Background

- Washington State introduced regulatory proposals targeting OFRs in electronics.
- This shift impacts various stakeholders across the electronics manufacturing value chain, raising concerns about safety, performance, and compliance.
- Industry perspectives provide valuable insights into the practical challenges and implications of these restrictions.

Class-Based Regulation Concerns

- Many industry stakeholders question treating all OFRs as a single class.
- Some OFRs are crucial for safety in specific applications; broad restrictions could compromise product performance.
- Industry advocates for data-driven, chemical-specific assessments.

Impact on Product Design and Performance

- Flame retardants are essential in electronics to meet fire safety standards and enhance durability.
- Untreated plastics are flammable; alternatives often lack the mechanical strength or thermal stability required.
- Washington’s restrictions may limit the ability to create high-performance, safe products.

Availability and Feasibility of Alternatives

- Regulatory intent promotes safer alternatives, but industry reports limited availability of equivalent options.
- Non-halogenated alternatives may not meet necessary performance standards, raising durability concerns.

Global Regulatory Misalignment

- Washington’s regulations exceed similar standards in other regions.
- This divergence creates challenges in compliance, disrupting global supply chains and increasing costs.
- Manufacturers face added pressure to adapt to varied regional requirements.

Key Insights from the Value Chain

- **Safety Trade-Offs:** Maintaining fire safety standards remains essential despite the shift towards alternative materials.
- **Targeted, Science-Based Regulation**: Value chain calls for evidence-driven, chemical-specific regulations rather than broad class-based restrictions.
- **Innovation and Compliance Challenges:** Regulatory shifts require significant time and resources to develop new solutions that meet both safety and performance standards.

Conclusion

- The industry’s feedback emphasizes the need for balanced, science-driven regulations that prioritize safety and practicality.
- Stakeholders call for collaborative approaches, further research, and targeted regulations to support both consumer safety and industry innovation.

Next Steps & Resources

Washington State Exemption Process

Temporary Grant: Valid requests receive an automatic temporary exemption until a final decision by the Washington Department of Ecology (ECY).

Key Steps to Submit an Exemption Request

Submit to: SaferProductsWA@ecy.wa.gov.

Include: Justification for necessity, regulatory conflicts, design/safety impacts.

NAFRA One-Pager

ACC Contact: Owen Jappen, Owen_Jappen@americanchemistry.com

Q&A

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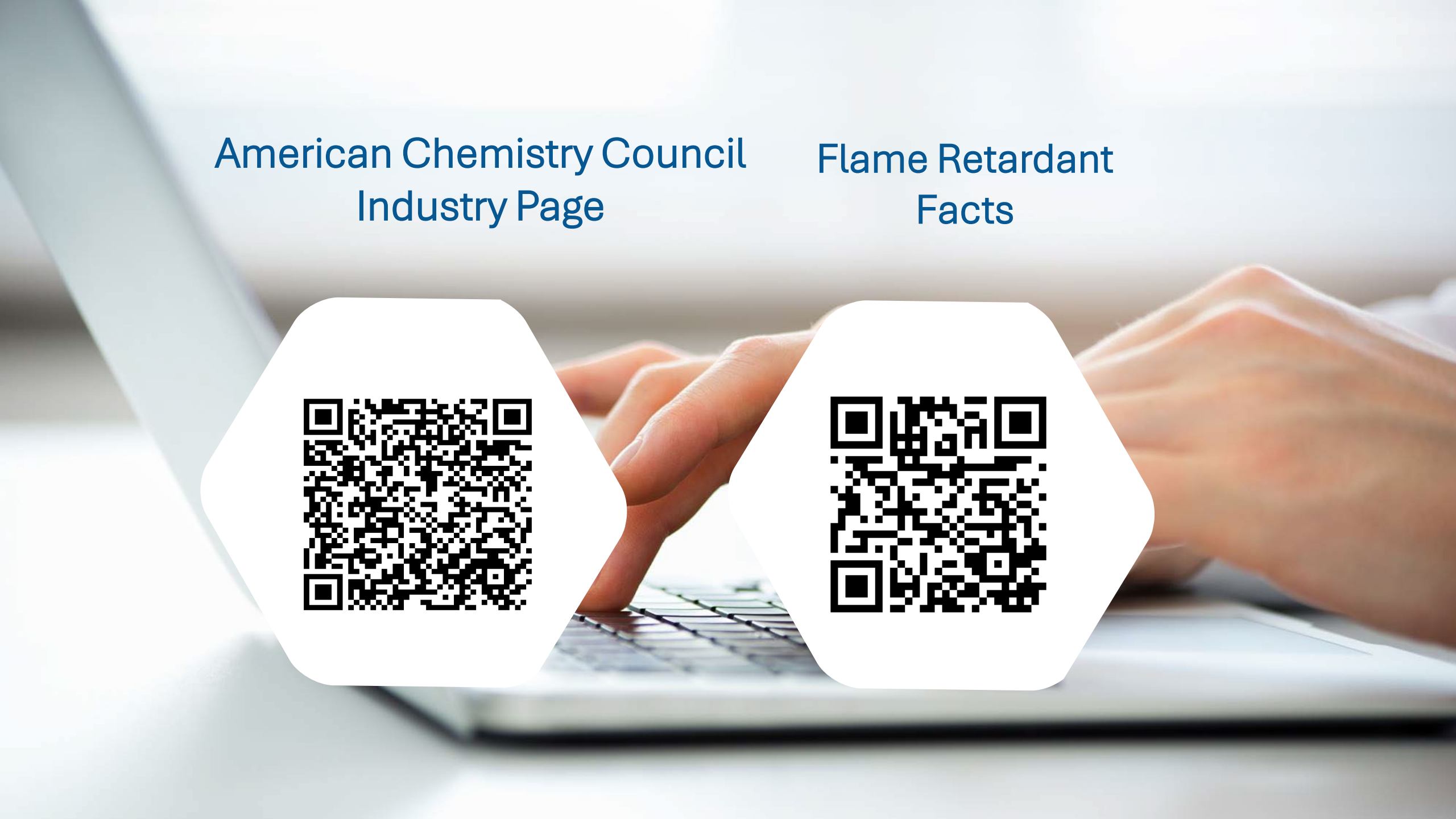
American Chemistry Council Industry Page

Flame Retardant Facts



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Thank you