

CEMA
European Agricultural
Machinery Association



EUROMOT

The European Association of Internal
Combustion Engine and Alternative
Powertrain Manufacturers



JOINT INDUSTRY POSITION PAPER

In Response to ECHA's Call
for Evidence on Aromatic
Brominated Flame
Retardants (ABFRs)

17 March 2026



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17 MARCH 2026, BRUSSELS

The co-signatories of this paper welcome the opportunity to contribute to ECHA's consultation on aromatic brominated flame retardants (ABFRs). Our members manufacture engines, power systems, and equipment used across non-road mobile machinery, agricultural and forestry machinery, construction equipment, marine and stationary applications, as well as power tools and garden machinery. This includes the membership of **EUROMOT, CEMA, EGMF and EPTA**.

These products rely on complex electrical, electronic, and mechanical assemblies where fire safety is critical. ABFRs, both additive and reactive, play a key role in ensuring the necessary flame resistance, thermal stability, and electrical insulation performance for components operating under high heat, vibration, and electrical loads.

Any regulatory measures affecting the availability or use of AFRs must therefore carefully consider **technical feasibility, supply-chain realities**, and the **essential safety functions** these substances provide across diverse industrial applications.

1. Functional Role of ABFRs in our Applications

ABFRs are used either as **reactive** flame retardants integrated into epoxy resins (e.g., PCB laminates) or as **additive** flame retardants blended into polymers such as ABS, PC/ABS, PA, and PBT. Their presence is critical to:

- Preventing ignition from electrical overloads, arcing, and thermal hotspots.
- Maintaining mechanical and insulation properties under vibration and fluctuating temperatures.
- Ensuring compliance with stringent industry fire-safety and performance standards.

2. Use Across Components and Material Systems

Industry evidence confirms that ABFRs are embedded across a wide range of components essential to our products. They appear in:

- **Wiring and harnesses:** insulation layers, heat-shrink tubing, sleeves, protective sheathing.
- **Control units and sensors:** housings, adhesives, sealants, protective casings.
- **Motors, pumps, alternators, cooling systems:** wiring, connectors, composite housings, embedded electronics.
- **PCB assemblies:** epoxy laminates, resin systems, and electronic modules incorporating reactive ABFRs.
- **Battery systems:** housings, connectors, wiring, and protective structures facing both electrical and thermal risk.
- **Mechanical and electromechanical parts:** switches, converters, brackets, gauges, and polymer housings.

These components frequently involve multilayer material structures, polymers, rubbers, adhesives, and reinforced composites, requiring ABFRs to ensure consistent flame-retardant performance across the complete system.

3. Supply Chain Realities and Embedded Dependencies-Chain Realities and Embedded Dependencies

Many ABFR-containing components originate from global suppliers. This creates practical challenges for:

- **Traceability:** limited visibility of ABFR content across multi-tier supply chains.
- **Regulatory convergence:** aligning global suppliers with evolving EU requirements.
- **Substitution coordination:** ensuring alternatives, where available, meet technical and safety standards across complex assemblies.

In numerous cases, ABFRs are deeply integrated into imported parts, particularly PCBs, adhesives, coatings, and encapsulants, making material level substitution neither immediate nor straightforward.

4. Environmental and Safety Considerations

The co-signatories recognise the importance of addressing environmental and health concerns. However, not all ABFRs present the same risk profile. Reactive ABFRs, for example, are firmly bound within polymer matrices and exhibit very low release potential. Polymeric ABFRs also show high stability compared to small-molecule additive types.

While ECHA has identified waste stage emissions as a potential concern, our sector already operates under strict end-of-life and WEEE requirements that mitigate such risks. Many ABFR-containing materials used in our applications are inherently stable and designed to minimise release through the full product life cycle-stage emissions as a potential concern, our sector already operates under strict end-of-life and WEEE requirements that mitigate such risks.

Fire safety remains non-negotiable. Premature removal of ABFRs without validated alternatives would jeopardise electrical safety, reliability, and compliance with essential performance standards.

5. Substitution Challenges

Alternatives to ABFRs frequently lack the combined properties required for high-performance components, including:

- Heat resistance and thermal stability
- Electrical insulation performance
- Mechanical strength under continuous vibration
- Resistance to oils, fuels, cleaning agents, and environmental exposure

Substitution is further complicated by the need for complete component redesign, extensive requalification, and global supplier alignment. Such processes require long development timelines and significant resources. Additionally, electronics and components continue to be subject to very strained supply chains.

6. Potential Impacts of Restriction

A restriction risks:

- Compromising fire and electrical safety.
- Delaying product development cycles due to redesign and recertification needs.
- Disrupting supply chains and availability of compliant components.
- Increasing production costs and operational risks.
- Creating unintended obstacles to recycling and circularity strategies.

Realistic and sufficiently long transition periods are essential to avoid disproportionate impacts.

7. EUROMOT, EGMF, EPTA and CEMA Recommendations

The co-signatories urge ECHA and the European Commission to adopt a balanced, evidence-based approach and recommends:

- ✓ **Differentiated regulation** reflecting the distinct properties and risk profiles of reactive, polymeric, and additive ABFRs.
- ✓ **Critical use exemptions** for applications where no technically feasible or safe alternatives currently exist, including:
 - spare parts
 - marine, garden and forestry machines;
 - marine recreational craft as defined in Art.2.1.a of Regulation (EU) 2013/53
 - inland Waterway vessels as Art.3 (34) of Regulation (EU) 2016/1628;
 - non road mobile machinery according to the definition art. 3 (1) of the Regulation (EU) 2016/1628;
 - stationary machinery as defined in Art.3 (36) of Regulation (EU) 2016/1628;
 - stationary gen sets as defined in Art.3 (35) of Regulation (EU) 2016/1628;
 - rail cars & locomotives as defined in Art. (41), (42) & (43) of Regulation (EU) 2016/1628;
- ✓ **Adequate transition periods** that reflect long product development and certification cycles.
- ✓ **Support for coordinated R&D** into safe, technically viable alternatives.

- ✓ **Proportionate requirements for imported components**, reflecting global supply-chain realities.
- ✓ **Avoidance of a restriction that is too wide in scope** that could endanger product safety or industrial competitiveness.

8. Conclusion

ABFRs are deeply integrated into the electrical, electronic, and mechanical systems essential for the safe and reliable operation of engines and related equipment. While we support the EU's sustainability and chemical safety objectives, regulation must remain proportionate, technically grounded, and attentive to safety-critical applications.

A targeted, risk-differentiated approach is essential to balance environmental goals with industrial feasibility, product safety, and the competitiveness of European manufacturers.

THE CO-SIGNATORIES

EUROMOT

EUROMOT is the European Association of Internal Combustion Engine and Alternative Powertrain Manufacturers, representing the key manufacturers of internal combustion engines and alternative powertrains installed in Construction, Agriculture and Industrial; Forestry, Lawn and Utility; Marine; Rail; and Stationary Power Plant applications that are operating in Europe and globally.

CEMA

CEMA aisbl is the association representing the European agricultural machinery industry. With 11 national member associations, the CEMA network represents both large multinational companies and numerous European SMEs active in the sector. CEMA represents about 1,300 manufacturers, producing more than 450 different types of machines with an annual turnover of about €40 billion and 150,000 direct employees. CEMA companies produce a large range of machines that cover any activity in the field from seeding to harvesting, as well as equipment for livestock management.

EPTA

The European Power Tool Association (EPTA) represents 25 European manufacturers of electrical power tools with a strong production base in central Europe. Its members represent around 90% of corded and cordless power tool sales in Europe (by value), the latter of which use lithium-ion rechargeable batteries.

EGMF

The European Garden Machinery Federation (EGMF) represents large and small manufacturers of garden, landscaping, forestry, and lawn maintenance equipment and is registered in Europe since 1977. Through its 37 member bodies – 7 national associations and 30 companies – EGMF represents about 20,5 million cordless and corded units placed on the European market every year, accounting for around 80% of garden machinery, and EGMF members employ over 120,000 people in the EU.

FOR FURTHER INFORMATION PLEASE CONTACT

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