



BSEF Position Paper (short version)

Circular Economy Action Plan 2020

30 June 2020



Introduction

BSEF, the International Bromine Council, supports the strong EU drive for a more circular economy contributing to a more sustainable and greener future. The recently adopted EU [Circular Economy Action Plan](#)¹ as part of the EU's "Green Deal", sets out a range of actions and initiatives designed to enhance circularity. However, making the EU economy more "circular" also implies changes to its industrial development and innovation models. Close synergy is therefore needed between the Circular Economy Action Plan and the proposed EU Industrial Strategy.

Bromine-based technologies already contribute to sustainability and circular solutions. Bromine offers solutions to a wide range of environmental, social and economic needs including water treatment, reduction of mercury emissions, fire safety, energy storage and generation, production of pharmaceuticals and enhanced quality rubber for durability and safety.

With respect to brominated flame retardants (BFRs), their use in materials and products contributes to their overall safety (reduced propensity of material for ignition). This not only means a contribution to saving lives, but also products and property, thus preventing waste of resources. At the end of life, plastics products containing brominated flame retardants can undergo several waste management treatment options depending on the amount and composition of the plastics waste stream as well as on local conditions. BSEF companies are actively working with value chain stakeholders to further enhance circularity of materials by investing in novel end of life technologies (see annex).

The chemical industry, with its substantial innovative capacity, and is a key enabler in the development of solutions which can accelerate the transition to a circular economy and contribute to meeting the goals of the European Green Deal, the Paris agreement and the UN 2030 Sustainable Development Goals.

BSEF member companies² are members of the European Chemical Industry Council (Cefic) and BSEF itself is a partner organisation of Cefic. It therefore supports the view that guiding principles³ are needed for the development of an EU Circular Economy including:

- Developing a **sustainable business case** in which economic, societal and

¹ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020DC0098&from=EN>

² BSEF member companies are Albemarle, Lanxess, ICL group and Tosoh

³ CEFIC views on circular economy 2.0 – Towards a carbon-smart circular future



environmental aspects are balanced, whilst maintaining the competitiveness of the European industry

- **Increasing the share of circular feedstock**, through reuse of materials, extension of lifetime using more durable materials, resource recovery and mechanical, dissolution and chemical recycling technologies of waste
- **Building on and driving scientific and technological innovations**, to better use resources as well as ensure effective and efficient end of life reuse, recycling or other sustainable end of life solutions
- **Ensuring a life-cycle approach** to effectively ensure the reduction of chemical exposure and emissions
- **Taking a collective value chain approach** over the lifecycle of materials /products to enhance circularity
- **Recognising and reinforcing a risk-based approach** to end of life treatment of materials containing hazardous substances

BSEF, on behalf of the bromine industry, will actively engage in the roll out of the plan and provide input to those elements where it can actively contribute to providing expertise and solutions. Additionally, BSEF member companies will continue innovating and investing in solutions that will help the EU achieving its Circular Economy goals while they also contribute to economic growth and job creation. We look forward to engaging with the Commission, Member States, the European Parliament and other stakeholders in the

upcoming discussions. We will also be actively engaged on sector specific and value chain initiatives designed to address end of life issues.

BSEF has carefully reviewed the specific actions and initiatives proposed by the European Commission in its EU Circular Economy Action Plan. The following are its comments and suggestions with respect to the further development of these proposals in the coming years.

Development of a Sustainable Product Policy Framework

BSEF supports greater producer responsibility based on value chains taking responsibility for achieving sustainability and circularity. For instance, its voluntary emission control action programme - VECAP⁴ has been instrumental in substantially reducing losses and waste of brominated flame retardants from production and downstream user industrial installations.

Priority Product Groups

BSEF welcomes the Commission proposal for a “Circular Electronics Initiative”. The ubiquity and diversity of electrical and electronic equipment in society has been transformative across many economic sectors as well as in our social and leisure activities. Such equipment plays its part too in managing and facilitating our shift to electrical energy as the main energy driver. Flame retardants and particularly brominated flame retardants have been and will be at the forefront in ensuring that such equipment meets fire safety standards keeping people and property safe from fires.

⁴ For more information VECAP visit:
<https://www.bsef.com/sustainability/vecap/>



In terms of circularity, The EU already has several legislative tools in place concerning collection and recycling of electrical and electronic equipment, notably the WEEE Directive⁵. The WEEE CEN Standards⁶ greatly aid the safe end of life treatment of WEEE waste. However, they are voluntary. BSEF would support them being made mandatory to harmonise the approaches to WEEE treatment across the EU. Additionally, BSEF would like to see a review of the WEEE Directive requirement for mandatory separation of BFR containing plastics given the continuing decline of legacy POPs BFRs. Currently, all BFRs are penalised due to this requirement.

Finally, BSEF welcomes the Commission proposal to review *“EU rules on restrictions of hazardous substances in electrical and electronic equipment... to improve coherence with relevant legislation, including REACH and Ecodesign”*. Based on recent and direct experience with both instruments mentioned as well as overlap with the EU’s Restriction of Hazardous Substances (RoHS) Directive, we can only endorse any measures.

Enhancing circularity in toxic free environment

BSEF would like to see a risk-based and practical approach to enabling circularity of products and materials. A risk-based approach will enable maximum recycling of materials at the same time ensuring limit values for hazardous substances that are protective for human health and the environment.

⁵ Directive 2012/19/EU of the European Parliament and of the Council of 4 July 2012 on waste electrical and electronic equipment (WEEE)

⁶ WEEE CEN Standards – EN 50625 series

⁷ EU LIFE Project 16 ENV/NL/000271.

<https://ec.europa.eu/environment/life/project/Projects/index>.

Revision of the EU POP Regulation limit values for PBDEs and HBCD

BSEF notes the intention of the Commission to review the annexes in the EU POP Regulation Recast of 2018. Any review of the limit values for low POP concentration limits (LPCL) and related unintended trace contaminants values (UTC) contained in the 2018 Regulation, need to be based on a risk assessment as well as consideration of the technical and economic feasibility for recyclers to meet any lower limit values.

In the medium term, the emergence of new chemical recycling technologies (such as dissolution technologies) will allow for further enhancement of treatment of materials containing legacy substances such as POPs thus contributing further to the circular economy. BSEF members and the associated value chain are already working to demonstrate the application of innovative technologies to address legacy substances and material circularity with assistance from the EU LIFE programme⁷.

Revision of the Waste Shipment Regulation

BSEF welcomes the initiation of a review of the EU Waste Shipment regulation⁸ as critical to ensuring circularity within a EU context. With respect to electrical and electronic waste, the problem is particularly acute. On the one hand, this waste, which can be “hazardous” given its multiple material and substance composition, is not being treated safely in a number of third

[cfm?fuseaction=search.dspPage&n_proj_id=6263&docType=pdf](#)

⁸ Regulation (EC) No 1013/2006 of the European Parliament and of the Council of 14 June 2006 on shipments of waste, OJ L 190, 12.7.2006



countries. On the other hand, these products contain valuable raw materials such as precious metals and indeed critical raw materials, which should be recycled within the EU and reused within an EU manufacturing context. Strengthening rules under the WSR on export prohibitions for certain categories of waste and certain destinations should therefore be actively considered.

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About BSEF

BSEF, the International Bromine Council is a Brussels-based trade association that represents the International bromine industry. Founded in 1997, BSEF works to foster knowledge on societal and economy benefits of bromine and its applications. The members of BSEF are Albemarle Corporation, ICL Industrial Products, Lanxess and Tosoh.



Annex

Bromine and the Circular Economy

Bromine-based technologies already contribute to sustainability and circular solutions. Bromine offers solutions to a wide range of environmental, social and economic needs including water treatment, reduction of mercury emissions, fire safety, energy storage and generation, production of pharmaceuticals and enhanced quality rubber.

End of life Recycling of BFR Containing Plastics

Plastics with BFRs have excellent stability during recycling which allows recycled plastics to meet the same levels of fire safety as virgin material and maintains the value originally provided by flame retardants in the material. Where BFRs are used reactively, such as in the fabrication of FR4 printed circuit boards, the treatment is driven by the desire to recover valuable precious metals and other metals. In such treatment process (e.g. metal smelters), the resin base of the circuit boards is consumed as energy.

Where BFRs have been used additively – added to the polymer mix – the recycling of end of life plastics is dependent on the end of life management of the products where these plastics are used. For plastics from end of life automotive, electrical and electronic products, mechanical recycling is used to recover different valuable technical plastics for use again in new plastic parts and components. However, some BFRs are restricted under RoHS or listed as POPs. These four substances, which are no longer allowed in new products, are still present in waste streams and thus must be treated carefully. The WEEE Directive (EU 2012/19/EC) requires the segregation and separate treatment of BFR-containing plastics in order to ensure that restricted substances are removed from the material stream and destroyed. The WEEE CEN Standards⁹ provide the basis for recyclers to achieve this and ensure that plastics being used again do not contain legacy BFRs.

When recycling is not possible for technical reasons, there is a range of waste management options to deal with these fractions including advanced solid waste incineration. New, innovative chemical recycling technologies (e.g. dissolution and pyrolysis) are also emerging which will lead to the recovery of plastic resins and their reuse in new plastics products.

The bromine industry, along with its value chain, is also innovating the way it helps manage materials with legacy chemicals. One example of this is the EU LIFE co-funded Polystyrene Loop Project¹⁰ designed to provide a large scale demonstration plant using the CreaSolv dissolution process (chemical recycling). The Poly Styrene Loop concept uses the CreaSolv® Technology; allowing for the recycling of

⁹ Article 8.5 of the WEEE Directive 2012/19/EU requires the establishment of standards for the collection, treatment and re-use of waste electrical and electronic equipment. These standards are published by CEN as a series – 50625. S.R.CL/TS 50625-3-1:2015 addresses inter alia treatment of bromine containing plastics

¹⁰ <https://polystyreneloop.eu/>



post-consumer construction polystyrene foam waste, the destruction of HBCD (a POP under the Stockholm Convention), while recovering the bromine.

The project provides for a large scale demonstration plant using the CreaSolv dissolution process; this technology, combined with the high-temperature incineration of HBCDD and a bromine recovery unit (BRU) to ensure:

- the recycling of HBCDD-containing PS foam waste into manufacturing grade polystyrene
- the full and safe destruction of HBCDD, and
- the recovery of the bromine present in the HBCDD The demonstration plant is planned for construction at the ICL-IP site in Terneuzen (NL);

The PS Loop demonstration plant (with the capability to handle 3 million tonnes of PS waste per year) is aimed to start up end of 2020.

