



BISPHENOL AF

Consortium

Input into public consultation on the restriction of PFAS : BPAF crosslinker and its uses in FKM : request for exemption

Brussels, 22 September 2023

I. General

ETRMA and the Bisphenol AF Consortium welcome the opportunity to submit comments on the REACH restriction proposal.

The Bisphenol AF Consortium groups the registrants of Bisphenol AF in Europe, both manufacturers and importers. Members of the Bisphenol AF Consortium are; Central Glass Europe, Chemours Netherlands BV, Daikin Chemical Europe GmbH, Solvay Specialty Polymers Italy SpA.

***ETRMA** is the voice of tyre and rubber goods producers to various European institutions. ETRMA activities focus on the following key interdependent areas: representation, coordination, communication, promotion and technical liaison. The primary objective of ETRMA is to represent the regulatory and related interests of the European tyre and rubber manufacturers at both European and international levels. ETRMA is the sole interlocutor, specifically designated by the European tyre and rubber producers to carry out this critical task.*

BPAF (EC 216-036-7) is used as a crosslinker in the production of fluoroelastomer articles (FKM). The substance itself or in mixtures (compounds and precompounds) is only used at industrial level.

BPAF is currently subject to 2 restriction processes.

1. BPA and BoSC restriction proposal under REACH: BPAF (and its salts) is considered a bisphenol of similar concern to BPA based on its endocrine disrupting properties for the environment. This restriction proposal has been temporarily withdrawn but expected to be resubmitted by the German Competent Authorities after analysis of all the inputs received in the public consultation.
2. Universal PFAS restriction proposal under REACH: BPAF is covered in the restriction on PFAS due to its chemical structure.

The common denominator of both restriction proposals is the objective to minimize emissions to the environment in order to address the concerns for which, according to the dossier submitters, no threshold can be determined (endocrine disrupting properties, persistence).

The BPAF Consortium submitted detailed contributions to the BPA and bisphenols of similar concern (BoSC) public consultation (#3791 and 4744) and we kindly invite ECHA, in particular RAC and SEAC members, to review these contributions (attached). We demonstrate that cumulated releases of BPAF in the environment are expected to be minimal (28 to 115 kg in 20 years), whilst cost will be in the order of magnitude of billions € (750 million € for the compounding and converting sector alone, without quantifying downstream impacts). BPAF based FKM are used in many critical applications contributing to achieve key European political objectives like the Green Deal.

The now temporarily withdrawn restriction proposal of BPA & BoSC includes a residual limit of 10 ppm, a migration limit of 0,04 mg/l and an exemption for mixtures and articles that have no contact with aqueous media during their service life. Specifically for FKM, a 10-year derogation for BPAF residuals has been proposed by the German CA. As part of the BPA and BoSC public consultation, the BPAF Consortium asked the derogation limit for residual BPAF content to be set to 150 ppm. [Hereinafter referred to as 'Restriction Conditions']

We consider the Restriction Conditions to be appropriate for the use of BPAF in FKM, assuming that the requested modification of the FKM derogation is integrated.

The fact that the same substance appears in two distinct restriction proposals leads to double regulation and uncertainty.

The BPA and BoSC restriction proposal uses a substance-by-substance approach, while the PFAS restriction proposal is organized by application and covers thousands of substances. The BPA and BoSC restriction provides a more focused and suitable approach to address BPAF specifically.

We therefore request to exempt the use of BPAF as crosslinker in FKM from the scope of the PFAS restriction in order to avoid double regulation.

II. Input to public consultation

Question 1: Sector and (sub-)uses

1.1. Description of uses

FKMs based on BPAF crosslinker may be found in the following sectors and (sub-)uses in table 9.

- Equipment for food and feed production.
- Transport : Use of PFASs applications affecting the proper functioning related to the safety of transport vehicles, and affecting the safety of operators, passengers or goods. **This definition is too narrow as the use of FKMs is necessary to meet current Euro 6 environmental limit or the future Euro 7 (i.e. necessary for the placing on the market of cars meeting those emissions requirements).**
- Semiconductor manufacturing process
- Fluoropolymers in petrol and mining (seals, liners...). **The use is much wider within any industrial manufacturing process involving chemicals when outstanding resistance to temperatures >200°C and chemicals are required to guarantee the safe functionality of the corresponding equipment.**

Uses not described in in table 9

As mentioned above uses of FKM based on BPAF crosslinker are wider than those described in table 9.

FKMs polymers based on BPAF crosslinker are used in in sealings, O-rings, stators for pumps and engines, gaskets, turbocharger hoses, particle filter hoses/Differential pressure hoses, fuel hoses/filler neck hoses, pressure hoses, pumps, sealing used in automotive engine (fossil and electric), transport (ship, train), healthcare & medical devices, pharma, food processing industry, semiconductors, aerospace. In industrial applications: mainly valves and seals for oil and gas lines, hose lines, pneumatic cylinders, pumps, sealing plates and hydraulic systems, closures for heat and/or chemical resistant packaging.

FKM are mandatory for applications that require resistance and ultra low permeation to fuel mixtures and solvents, such as fuel hoses and seals used in the transport sector as well as in chemical processing industry (CPI). Injection and compression moulding grades, extrusion grades and lower temperature grades are available.

For a more detailed description of the uses and applications, see in appendix submission #3791 (sections 1.1, 1.5) and #4744 (section 5.4.1.) to BPA and BoSC public consultation.

Question 2: Emissions during end of life

BPAF emissions during end of life, mainly assumed to occur during landfill, as it is expected that BPAF would be fully decomposed during incineration [1-3]. Assuming a maximum of 150 ppm of BPAF residual content in FKMs, would range between 9,9 (own modelling based on migration testing) and 80,9 kg (OECD exposure scenario document, ESD)[4] over 20 years considering all stock of product placed on the market during that period. **For detailed calculation and discussion, see in appendix submission #4744 to BPA and BoSC public consultation section 10.**

[1]Aleksandrov, K. Waste Incineration of Polytetrafluoroethylene (PTFE) to Evaluate Potential Formation of Per- and Poly-Fluorinated Alkyl Substances (PFAS) in Flue Gas. 2019, 226, 898-906., DOI: <https://doi.org/10.1016/j.chemosphere.2019.03.191> ;

[2]Taylor, P. H. Investigation of Waste Incineration of Fluorotelomer-Based Polymers as a Potential Source of PFOA in the Environment. Chemosphere 2014, 110, 17-22, DOI: <https://doi.org/10.1016/j.chemosphere.2014.02.037> ;

[3] Bakker, J., et al. Per- and Polyfluorinated Substances in Waste Incinerator Flue Gases. Rijksinstituut voor Volksgezondheid en Milieu (RIVM) Report 2021-0143. DOI: <https://doi.org/10.21945/RIVM-2021-0143>]

[4] OECD Environment Health and Safety Publications, Series on Emission Scenario Documents No. 3, Emission Scenario Document Plastics additives, <https://www.oecd-ilibrary.org/docserver/9789264221291-en.pdf?expires=1694011368&id=id&accname=guest&checksum=511DD8B4F91DB362643FB439D0FFFC79>

Question 5: Tonnages and emissions

5.1 Industrial and service life emissions

Industrial emissions are negligible during the precompounding, compounding and converting stages (see in appendix submission #3791 section 9).

Assuming a maximum of 150 ppm of BPAF residual content in FKMs, cumulated installed stock emissions during service life would range between 17,9 (migration testing and modelling) and 33,4 kg (OECD ESD plastics additives, 2009) over a period of 20 years.

5.2 Conclusions (emissions including end of life releases)

Table 1. Comparison total releases to environment (20 years)

BPAF consortium-ETRMA:

OECD ESD: $33,7 + 80,9 = 115$ kg Modelling: $17,9+9,86 = 27,8$ kg
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We estimate cumulated BPAF emissions over 20 years over the whole life cycle to be around 27,8 kg (modelling). Taking the OECD ESD on plastics as a reference worst case, those would amount to 115 kg.

For a more detailed calculation, see submission #4744 to BPA and BoSC public consultation section 10.

Question 6: Alternatives and socio-economic impact “missing uses”

We would like to refer to our general comments in section I. In our view, BPAF and its uses should be covered in the restriction on BPA and BosC rather than the PFAS restriction. There are at present no viable alternatives to this crosslinker and its FKM applications. For a detailed socio-economic impact and analysis of alternatives, please refer to submission #4744 to BPA and BoSC public consultation section 5.

Question 10: Analytical methods

Residual content of BPAF

We are performing more tests on residual content and develop a harmonized method so as to be able to determine the actual residual level of BPAF in FKM based articles (or cured FKM) in a repeatable manner with an independent lab. The new method in development aims at extracting not only BPAF but also its salts in the scope of the restriction proposal on BPA and BoSC.

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List of appendixes :

Annex A_BPA and BoSC restriction_comment#3791_2023-01-25non conf_BPAF consortium initial input in BPA and BoSC restriction public consultation_non conf

AnnexB_BPA and BoSC restriction_comment#4744_2023-06-21 _non conf_BPAF consortium ETRMA BPA+ public consultation and its related appendixes

Ap1_Preliminary Investigation Report Modelling on BPAF migration from FKM materials

ap2_2023-01-25_BPAF use description for exposure based waiving

ap3 calculation of BPAF releases BPAF consortium & ETRMA final