Paris, 22 May 2023

EUROPEAN SPACE SECTOR COMMENTS ON THE REACH RESTRICTION PROPOSAL FOR CERTAIN BISPHENOLS

Reference: ECHA Public Consultation on the Annex XV restriction report of 7 October 2022 submitted by Germany (BAuA) for 4,4'-isopropylidenediphenol (Bisphenol A) and bisphenols of similar concern for the environment[1]

PREFACE

This is the joint contribution of the European Space Industry, represented by ASD-EUROSPACE – with the support of European Space Agency (ESA), national space agencies and the European Defence Agency (EDA) as an observer – to the ECHA Public Consultation on the Annex XV restriction report of 7 October 2022 submitted by Germany (BAuA) for 4,4'-isopropylidenediphenol (Bisphenol A / BPA) and bisphenols of similar concern (BoSC) for the environment (hereafter also "BPA+").[2]

It has been prepared by the participants of the **Space Restrictions Task Force (RTF)** under the Materials and Processes Technology Board of the European Space Components Coordination (ESCC MPTB).[3] The RTF was kicked off on 10 February 2023.[4]

The proposed restriction (preferred option RO2 by BAuA) prohibits the placing on the market (incl. import from outside EU) of BPA and the BoSCs identified in Appendix X[5] in mixtures and articles in a concentration equal to or greater than 10 ppm (0.001 % by weight). The restriction shall not apply where the bisphenols are either covalently bound to any type of matrix (e.g. via functioning as a cross-linker) or are used as intermediates in the manufacture of polymers, and for which contact to aqueous media in any form can be excluded during their reasonable and

[1] Available at https://echa.europa.eu/documents/10162/450ca46b-493f-fd0c-afec-c3aea39de487.

[2] Restriction process summary page: https://echa.europa.eu/restrictions-under-consideration/-/substance-rev/71401/term.

[3] A list of RTF participants can be found at the end of this contribution.

[4] https://eurospace.org/new-space-sector-task-force-on-large-scope-reach-restriction-initiatives-on-pfas-and-bisphenols.

[5] Initially the following five bisphenols are proposed for inclusion: **Bisphenol A** (CAS# 80-05-7); **Bisphenol B** (CAS# 77-40-7); **Bisphenol S** (CAS# 80-09-1); **Bisphenol F** (CAS# 620-92-8); **Bisphenol AF** (CAS# 216-036-7).

foreseeable use throughout their service life. Derogations are proposed (Appendix Y) for fluoroelastomers (concentration limit 50 ppm for 10 years), Polycarbonates (PC) and polycarbonatebased mixtures (concentration limit 150 ppm) and epoxy resins (concentration limit 65 ppm for the placing on the market of articles manufactured with solid and semisolid epoxy resins), among others.

A. GENERAL COMMENTS

At the outset we would like to express our **general support to the joint ASD & AIA contribution to this consultation**, including but not limited to the additional time and derogation claims.[6] We share similar chemistries in our products and have similar challenges regarding the communication and (limited) visibility in complex global supply chains. The **specificities of the European Space Sector with regard to chemicals management** have recently been summarised in the ASD-Eurospace contribution to the CSS REACH Revision (MPTB-ES-PO-0098). [7] Group restrictions such as presently proposed pose additional challenges for our sector.

BPA and BoSC can currently be found in a **multitude of space-related applications**. In particular, BPA containing **epoxies** are widely used in epoxy adhesives for structural and non-structural bonding over a wide temperature envelope. In addition, BPA and BPF based epoxy composites are critical for satellites and launchers. In satellites, composites form the backbone of both platform and payload structures, support structures, solar arrays, tanks, as well as being used in reflectors and antennas. Similarly, launchers require composites in their fairings, adapters, stage and interface structures, skirts, tanks, etc.

According to REACH Article 33(1) declarations received BPA is also present above 0.1% w/w in a number of **electronic components** for space applications. Unless a derogation or other limitation of scope (e.g. with regard to bisphenols *"covalently bound to any type of matrix"*) can be applied in these cases, the proposed restriction would cover such components as well.

To ensure the continued uninterrupted functioning of the European and global space industry supply chain, the final restriction should not prevent (either directly or indirectly) the availability of BPA and BoSC reliant mixtures and articles, including but not limited to the use cases above, before viable alternatives have been developed, tested and qualified for use in all affected space parts, products and processes.

With regard to the proposed **Extension mechanism** to include additional BoSC in the restriction scope (Appendix X) in the future – without the participation of ECHA and its RAC/SEAC Committees – we would like to recall that industrial stakeholders should be

[6] ASD and AIA follow-up response to the consultation on the EU REACH proposed restriction of bisphenol A and bisphenols of similar concern dd. 28.2.2023 ; available on the ECHA website, ref. 3818.

[7] Available at https://eurospace.org/wp-content/uploads/2022/04/eurospace_sfg_position-paper_reach-rev_opc_13042022.pdf; see page 3-4.

consulted nevertheless by the European Commission prior to any such extension, and that enough time and additional economic resources to develop new qualified alternatives are available until such extensions would become effective. Moreover, specific provisions on imported chemicals, in order to have complete information and properly manage the supply chain, should be discussed.

B. SPECIFIC INFORMATION REQUESTS

1: RESTRICTION CONDITIONS AND TESTING

We believe that this restriction depends entirely on the chemical manufacturers and formulators. Space companies do not specify any need to have BPA or BosC in their chemicals and articles. Therefore, they have to rely on their supply chain, which is the main challenge of this restriction. For this reason also, it is not possible for us to comment on conditions and methods for migration testing.

Regarding the proposed derogation for **fluoroelastomers**, we would like to highlight the possible interference with the Universal PFAS Restriction, unless appropriate derogations will be foreseen.

2: ANALYTICAL METHODS

There are no analytical methods regarding BPA and BosC in our articles and mixtures since such substances are not identified as criteria for the technical performance in our manufacturing. It would be necessary to refer to the producers of the chemical products themselves who produce the SDS to adequately establish the methodology for measuring the substances.

3: SUPPLY CHAIN COMMUNICATION CHALLENGES

We would like to recall that this restriction depends entirely on the chemical manufacturers and formulators. The concentration limit (0.001 % by weight) is much lower than what needs to be reported in Safety Data Sheets and REACH Article 33 declarations for Candidate List substances in articles. As end users we are thus dependent on suppliers declaring the presence of these substances. For substances in articles, it can be generally said that the flow of information is challenging and slow; the supply chain is global/worldwide and complex, and regulatory requirements for substance disclosure differ from country to country.

According to the survey to our task force members for this consultation, we are not aware of any liquid mixture containing more than 10 ppm of BPA/BoSC. However, given the lacking reporting requirement at this low level there are uncertainties associated with this impact assessment. Some of our task force members have reached out to their suppliers to disseminate information on the restriction proposal along the supply chain and at the same

time obtain an answer on the impact that the restriction proposal could have on the products purchased. Within the timeframe for this consultation, no useful answers have been informed.

4: ALTERNATIVES

We would like to recall that this restriction depends entirely on the chemical manufacturers and formulators. At this point we are not able to assess substitution options.

In general we would like to highlight that in order for an alternative to be used in space products and processes, it must be tested and qualified by the company responsible for the design of the particular component or product.

Where a current formulation or polymer based on BPA/BoSC is qualified for use in space products and processes, any potential alternatives will also need to meet equivalent performance. Here, an additional challenge is that space companies do not have sufficient strength to direct manufacturers to develop new test blends.

It is also important to recall the typical long lead times for the qualification and introduction of possible alternatives in the parts and processes, sometimes qualified not only by European organisations (for example ESA), but also by the US NASA for programmes carried out in collaboration.

5: ECONOMIC IMPACTS

As mentioned previously, the impact analysis is impeded by the fact that space companies depend on upstream supplier declarations about BPA/BoSC contents in mixtures and articles supplied. However, to our present (limited) knowledge either the concentration limit of 0.001 % by weight is not exceeded or the bisphenols are excluded from the restriction according to Par. 2 lit i. or Par. 3 with Appendix Y. Further information about possible economic impacts can be found in the ASD & AIA contribution to this consultation.[8]

6: PRODUCT SPECIFIC QUESTIONS: EPOXY RESINS

European space companies part surveyed for this contribution have not yet identified any of these substances in their epoxy resins. However, it has been mentioned that, should the Appendix X be expanded to other BoSCs further impacting the majority of common epoxy resins, the whole space industry could be impacted, specifically telescopes, electronics, photonics, all the application where high stability (high stiffness) epoxy joints are required. Should this happen, multiple projects of ESA for the European Commission are going to be

[8] See above Footnote 6.

affected, possibly causing delays and cost overruns directly to Commissions contracts (e.g. Galileo, Copernicus new priority missions, telecom, etc..).

C. LIST OF RTF PARTICIPANTS

This contribution has been prepared by REACHLaw Ltd. in the frame of the Space Restrictions Task Force (RTF), based on a dedicated survey to the RTF participants to address the questions in this consultation. It reflects the best knowledge available from experts in their field, thanks in particular to the support of ASD-EUROSPACE,

the following corporations:

AIRBUS DEFENCE AND SPACE

ARIANEGROUP

AVIO

BEYOND GRAVITY

ESR TECHNOLOGY (ESTL)

LEONARDO COMPANY

MAXON

OHB

THALES ALENIA SPACE

W. L. GORE & ASSOCIATES

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AGENZIA SPAZIALE ITALIANA (ASI)

CENTRE NATIONAL D'ETUDES SPATIALES (CNES)

GERMAN AEROSPACE CENTER (DLR)

the EUROPEAN DEFENCE AGENCY as an observer;

as well as TNO, an independent research organisation.

Further information about the RTF is available on the ASD-EUROSPACE website: https://eurospace.org/new-space-sector-task-force-on-large-scope-reach-restriction-initiatives-on-pfas-and-bisphenols.

Kind regards,

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