

Panasonic Group Position Paper: PFAS Restriction Public Consultation

22 September 2023

1. Introduction

We, Panasonic Group, operate globally and we actively work to protect the human health and the environment, while remaining compliant with chemical substance regulations in each country. We have supported EU's attempts to reduce hazardous chemical substances by responding honestly and sincerely to the requirements laid out by EU chemical substance regulations such as REACH. We would like to express our gratitude to the European Commission and ECHA for giving us the opportunity to respond to the public consultation regarding the draft proposed restriction of Per-and Polyfluoroalkyl Substances (PFAS).

2. About Panasonic Group

Panasonic Group is a comprehensive electronics manufacturer, who is involved in development, production, sales, and service activities in a broad array of business areas from components to home and commercial electronic equipment, equipment for telecommunications, industry, automotive and aviation, housing equipment, and more. Our Group, since its establishment, has operated its business under its business philosophy, "contributing to the progress and development of society and the well-being of people worldwide through its business". We will continue to work diligently to create new values and challenge ourselves to remove barriers at present and in future, by facing global environmental and social issues head-on.

We regard "solving global environmental issues" as our most important management priority. For fulfilling our responsibility to eliminate CO2 emissions in all business activities, we will make use of knowledge and technologies in electrification, energy saving, and energy transformation, and contribute to society and decarbonization goals by increasing the volume of avoided CO2 emissions.

Panasonic Group has sales transaction totaling to more than 7,1 billion Euros for EU region, 25% of which are made up by automotive electronics – an essential element for the automotive industry in EU. Furthermore, our Group directly employs approximately 19.000 people in Europe, which shows that our Group is closely connected with EU economy and life of people.

Europe is a leader in terms of environmental protection and the introduction of legal initiatives with this purpose. In addition, a rapid transformation to reduce the usage of natural gas has been started in Europe in response to the energy crisis. In Panasonic sites, energy sources have been changed from gas to electricity to further reduce our CO2 emission, and we have hugely contributed to EU environmental policy by focusing on hydronic and air-to-air heat pumps that help to decarbonize EU's homes and buildings. When it comes to

refrigerants used in our equipment, we use both fluorinated and non-fluorinated refrigerants. We were the first Japanese manufacturer in Europe to announce our residential 'natural refrigerant' propane self-contained hydronic heat pump. This is the reason why the Panasonic Heating, Ventilation and Air Conditioning (HVAC) Company will prepare their own separate input to the public consultation on proposed PFAS restriction, to be able to dive in full depth into the HVAC-related applications.

The number of suppliers who provide components and Electrical and Electronic Equipment (EEE) to the Panasonic Group in the world is over 13.000. The upstream supply chains from our direct suppliers to chemical manufacturers are intricately intertwined and multilayered. To manage this complexity of the global supply chains, we are relying on the international standard IEC62474, in order to acquire the information on chemical substances contained in our products.

As a comprehensive electronics manufacturer, our Group has always kept global environmental issues in mind and conducted business closely tied to the European economy. We have also been working closely with our suppliers, who are connected through a complex supply chain, to ensure that we comply with chemical substance regulations one by one. We call upon the European Commission to consider the actual situation and concerns of our company and industry so that our Group can continue to strengthen the development of the European economy.

3. General comments

I. Substances in the scope of restriction proposal

We call upon the European Commission to ensure:

- ◆ Implementation of appropriate risk assessment of subject substances (Identification of risks in accordance with REACH regulations)
- ◆ Exemption for PFAS confirming to Polymers of Low Concern OECD criteria

The PFAS covered by the proposed restriction are grouped together and include a wide variety of more than 10.000 substances. However, because risk assessments have not been properly conducted for each individual substance, many PFAS are included for which no risk has been identified. As such, they do not meet the scope of the restriction referred to in Article 68 of REACH, which is "when there is an unacceptable risk to human health or the environment, arising from the manufacture, use or placing on the market of substances, which needs to be addressed on a Community-wide basis". In other words, contrary to Article 68, the proposed restriction would regulate many PFAS that have not been demonstrated to be unacceptable risks. We understand that persistency applies to many PFAS, however only some PFAS (e.g., PFOA, PFOS, PFHxS, restricted under REACH and POPs Regulations or the Stockholm Convention) have been identified as having toxicity, bioaccumulation, or other risks. Persistency alone is not enough to determine that a PFAS is "an unacceptable risk to human health or the environment".

For the scope of the restriction, we would like to ask you to review the conditions of the PFAS restriction again for each sub-group, as we see it necessary to carefully discuss the scope after identifying unacceptable risks and considering risk reduction effects of the regulation.

Specifically, we highlight that the fluoropolymers are polymeric PFAS which have carbon polymer backbone with the fluorine atoms attached directly to the carbon backbone, and they do not lead to the formation of long-chain PFAS or PFAC as a result of degradation. It was concluded in 2018¹ and 2022² studies that fluoropolymers fulfill the Organization for Economic Co-operation and Development (OECD) criteria of polymers of low concern (PLC). The 2020 EU Commission study on criteria for polymers requiring Registration under REACH³ supports the 2018 findings and states:

Fluoropolymers are generally very high molecular weight (>100 000 Da); have high thermal, chemical, photochemical, oxidative, hydrolytic, and biological stability; have low flammability, neutral electrical charge, and resistance to degradation; have negligible residual monomers and low molecular weight oligomer content; have limited low molecular weight leachables; and have no reactive functional groups of concern.

We consider this a reasonable point and believe that there is no justification in the dossier for restricting such a substance group.

During the use of articles like EEE, it is presumed that an exposure amount of PFAS is generally negligibly low compared with the exposure of the PFAS as chemicals on their own^{4,5}, and the dossier submitters recognize

¹ Henry, B. J.; Carlin, J. P.; Hammerschmidt, J. A.; Buck, R. C.; Buxton, L. W.; Fiedler, H.; Seed, J.; Hernandez, O.: A Critical Review of the Application of Polymer of Low Concern and Regulatory Criteria to Fluoropolymers. Integr. Environ. Assess. Manage. 2018, 14 (3), 316–334, [<https://setac.onlinelibrary.wiley.com/doi/10.1002/ieam.4035>]

² Korzeniowski, S. H.; Buck, R.C.; Newkold, R.M.; Kassmi., A.; Laganis, E.; Matsuoka, Y.; Dinelli, B.; Beauchet, S.; Adamsky, F.; Weilandt, K.; Soni, V. K.; Kapoor, D.; Gunasekar, P.; Malvasi, M.; Brinati, G.; Musio, S.: A critical review of the application of polymer of low concern regulatory criteria to fluoropolymers II: Fluoroplastics and fluoroelastomers. Integrated Environmental Assessment and Management 2023, 19 (2) , 326-354. [<https://setac.onlinelibrary.wiley.com/doi/10.1002/ieam.4646>]

³ Wood. Scientific and Technical Support for the Development of Criteria to Identify and Group Polymers for Registration/ Evaluation under REACH and Their Impact Assessment. Final Report, 2020, [<https://op.europa.eu/en/publication-detail/-/publication/1cc811ff-d5fc-11ea-adf7-01aa75ed71a1>].

⁴ According to the U.S. ADSTR research, PFAS exposure routes to human and environment are mainly oral ingestion from PFAS-containing foods, food packaging and/or drinking water, exposure from consumer products is low [<https://www.atsdr.cdc.gov/pfas/health-effects/exposure.html>].

⁵ According to Duke Nicholas School of the Environment, PFAS percutaneous exposure via skin contact is negligibly low although inhalation of PFAS absorbed to house dust migrated out from PFAS-containing carpets and/or furniture might be possible. [<https://sites.nicholas.duke.edu/pfas/files/2020/08/Duke-NSOE-PFAS-Background.pdf>].

that electronics and semiconductors sectors account for less than 1% of all PFAS uses and releases. For example, the U.S. Agency for Toxic Substances and Disease Registry (ATSDR) concluded that the route of human and environmental exposure to PFAS is mostly through ingestion of drinking water or food, and the exposure is negligible through consumer products. In articles, PFAS are firmly integrated into polymer matrix in most cases and are contained in very small amounts. Furthermore, due to an extremely low vapor pressure (about 10-4 Pa), PFAS are not emitted into the environment. Even if a very limited amount would be emitted or eluted from articles, it is not considered to be a level that affects humans or the environment.

It is also presumed that environment impact of PFAS from EEE (i.e., articles) is extremely low since certain EEE distributed to general consumers are properly managed in accordance with EU WEEE Directive 2012/19/EU, ELV Directive 2000/53/EC, and Battery regulations (Battery Directive 2006/66/EC), and the like.

The blanket restriction on PFAS will affect many industries and therefore we call upon the European Commission to consider our recommendations and information in the following sections and make a scientifically and technically sound decision about the scope and feasibility of a restriction.

Going further this also means that we call for the full exemption from the restriction scope of fluoropolymers that are classified as "polymers of low concern" according to the OECD definition. Polymers of low concern are those having "insignificant environmental and human health impacts"⁶.

Admitting that not all PFAS are the same in terms of their impact on human health and the environment, we believe that a distinctive approach is beneficial when it comes to minimizing the negative effects of a broad ban. Exempting fluoropolymers that fulfill the criteria for polymers of low concern will avoid unnecessary interruptions in the supply chains. Along with this, the uses of PFAS where their risks have been scientifically demonstrated shall be restricted.

II. Understanding status of the use of PFAS in supply chains

We call upon the European Commission to ensure:

- ◆ Identification of PFAS as SVHC in accordance with the REACH procedure
- ◆ Setting of a derogation period of at least 5 years for EEE, in addition to general 18 month transition period
- ◆ Incorporation of a review clause into the derogation for EEE

As stated before, EEE supply chains are spread all over the world and are highly complex. Due to this complexity, the information on intentional let alone unintentional uses of PFAS is very scarce in the supply chain, especially when it comes to the non-European suppliers. As long as there is no regulatory obligation for

⁶ OECD. Data Analysis Of The Identification Of Correlations Between Polymer Characteristics And Potential For Health Or Ecotoxicological Concern. 2009 [<https://www.oecd.org/env/ehs/risk-assessment/42081261.pdf>]

tracking the data on PFAS, many suppliers simply refuse to share this data in the supply chain.

In order to acquire precise information on products that contain chemical substances in question from the huge supply chains spread all over the world, such substances must be listed on a substance database in accordance with the international standard IEC62474 (particularly, Declarable substance groups and declarable substances list (DSL)⁷). We propose you to evaluate each PFAS substance in accordance with the REACH procedure to possibly identify them as SVHC for that reason, too. As of now, the IEC62474 DSL Reference substance list dated Jan. 17, 2023, is only limited to the 629 PFAS substances and that is the list against which we are able to request our suppliers to provide information on the content of chemicals. Therefore, we are not able to know the information of all 10.000 PFAS contents; it is impossible to know specific usage of each of the PFAS substances in such a short period of public consultation for the draft restriction proposal. As a consequence it is also impossible to verify whether any substitutes for all the PFAS substances are available.

With this in mind, we would like to request a general derogation of 5 years for all electronics applications of PFAS additionally to the 18-months transition period to have the necessary time for investigation of all applications and availability of alternatives.

Although we will proactively seek alternative materials and technologies to PFAS during this period we need to be aware that in some specific cases there may be no feasible or even known alternatives. As such we request for inclusion of a review clause specifying that before the end of a general 5-year EEE derogation a review process will be started to reassess the PFAS restriction and derogations to account for further research and development for new substitute materials or technologies to replace PFAS. The derogation deadline should be understood as the date for its review, not the derogation expiry date. Under these conditions, we believe that the regulation will not impede smooth distribution of products including EEE in the world and it will be ensured that the restriction can be implemented in the supply chain.

III. Spare Parts and Products Already Placed on the Market

We call upon the European Commission to ensure:

◆ Exemption of the spare parts and products that were placed on the market before the enforcement date of the regulation

Maintaining the availability of spare parts is crucial to ensuring the longevity and repairability of electronic devices and is moreover a requirement under the EU Green Deal and Circular Economy. We thus urge the European Commission to include an exemption for PFAS in spare parts, enabling the repairs of electronic

⁷ International Electrotechnical Commission IEC 62474 – Material Declaration for Products of and for the Electrotechnical Industry [https://std.iec.ch/iec62474]

components and devices, as per the repair as produced principle.

Pursuing the same goals as above, it shall be ensured that products that have already been placed on the market for the first time are exempted from the PFAS restriction. We propose an exemption that allows the sale and use of products already placed on the market, provided they comply with all other relevant safety and environmental regulations.

IV. Usage of EEE and Concrete Derogations

We call upon the European Commission to grant:

◆ Derogations for specific PFAS functions in EEE

In addition to the requested general derogations and exemptions above, we would like to request the specific derogations for the identified uses as below. Working tightly with the Four Electrical and Electronic Industry Associations in Japan (Japan 4EE), we have identified 12 different functions in the EEE that only PFAS can fulfill based on a number of reasons. We explain these functions and the PFAS properties necessary to fulfill these functions, as well as comparison to the alternatives in the Annexes 1 and 2.

Although each EEE has various functions, particularly for the uses specified below (and in the Annexes) it is known that PFAS substances are not replaceable in terms of technology as of now. Therefore, in addition to the uniform derogation (the transition period for 18 months and 5 years) as we requested in the above section II, we further request you for additional specific derogations. We kindly request for 12 years derogations for the below listed functions No 1, 2, 3, 4, 6, 7 and 10. For the usages of No 5, 8, 9, 11 and 12, please refer to the public consultation submissions of related industry trade associations and Panasonic and other company inputs.

1. Optical function
2. High speed communication and transmission function
3. Piezoelectric function (Conversion/Inversion between the mechanical power and electrical voltage)
4. Sliding function in mechanical section
5. Display function (Liquid crystal display / LCD) – Please refer to the submission of the Japan Electronics and Information Technology Industries Association (JEITA)
6. Safety and safety functions
7. Functional surface
8. Semiconductor – Please refer to the submission of the Semiconductors industry association (SIA) and their paper “The Impact of a Potential PFAS Restriction on the Semiconductor Sector”
[<https://www.semiconductors.org/pfas/>]
9. Thin-film device manufacturing process – As the manufacturing process for thin film devices is the same process as for semiconductors and MEMS, please refer to the submission of the Semiconductors industry

association (SIA) and their paper “The Impact of a Potential PFAS Restriction on the Semiconductor Sector”
[<https://www.semiconductors.org/pfas/>]

10. Passive electronic components and manufacturing process
11. Energy supply (Battery, Fuel cells, Solar cells) – Please refer to the submissions by the Battery Association of Japan (BAJ), the Japan Electrical Manufacturers' Association (JEMA) and The Advanced Rechargeable & Lithium Batteries Association RECHARGE
12. RACHP and Refrigerants (F-Gases) – refrigeration, air-conditioning and heat pumps – for this sector, please refer to Panasonic Heating, Ventilation and Air-Conditioning Europe input; as well as submissions by other industry associations (Japan Auto Parts Industries Association (JAPIA), Japan Refrigeration and Air Conditioning Industry Association (JRAIA), Japan Electronics and Information Technology Industries Association (JEITA))

In addition, the specific functions of EEE listed in Annex 1 are essential functions regardless of the market in which the equipment is used, such as home and business electronic equipment, information and communications, industry, automotive, aircraft, and housing-related equipment. In many cases, a single piece of equipment is not relying only on one of these functions, but rather multiple functions are required to make up a single equipment and ensure its proper operation. Therefore, if even one of many functions is missing, the equipment will not operate as required and expected.

Most of the PFAS substances provide various characteristics simultaneously (e.g., durability, moisture resistance, chemical resistance, insulation, and water or oil repellency). We would like to stress out that our preference for PFAS lies not on the convenience or traditional use, but indeed on their irreplaceability. It is important to state that while PFAS are excellent substances in terms of their described physical and chemical properties, they are a very expensive material compared to other materials. Therefore, in order to reduce cost, we only use PFAS if no alternatives exist.

As already explained above in section II, we strongly request you to introduce a derogation evaluation system (a review clause), i.e., a process for continuation or repeal of a derogation in due time before expiry date of that derogation, in order to take into account the progress of technology at that time.

4. Conclusions

As a conclusion, Panasonic Group supports the European Union’s commitment to protect public health and environment, recognizing importance of reduction of PFAS. However, we strongly believe that those PFAS that bear risks to human health and environment which were identified in accordance with the Article 68 of the REACH Regulation, can be efficiently reduced via reviewed restriction proposal taking into account the following points, without causing serious disruption in EU markets:

- ◆ Implementation of proper risk assessment of substances (Identification of risks of the substances in accordance with the REACH Regulation).

- ◆ Exemption for PFAS confirming to Polymers of Low Concern OECD criteria.
- ◆ Identification of PFAS as SVHC in accordance with the REACH procedure.
- ◆ Setting of derogation period of at least 5 years for EEE, in addition to general 18 month transition period
- ◆ Incorporation of a review clause into the derogation for EEE
- ◆ Exemption of the spare parts and products that were placed on the market before the enforcement date of the regulation.
- ◆ Derogation for specific PFAS functions in EEE

Considering the above, we strongly request evaluating PFAS restrictions while maintaining balance with negative effects in society and often unavoidable use of PFAS for HVAC, Battery, Fuel Cell and other applications essential for the decarbonization of Europe.

As EU chemical substance restrictions are role models for laws and regulations for other countries in the world, we hope that EU will effectively contribute to protection of human health and environment through regulations for reasonable and proper chemical substance management based on scientific evidence.

We sincerely hope that the ECHA scientific committees and EU Commission will thoroughly consider our comments stated above.

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