**General comments and answers to specific information requests**

**Specific information requests:**

1. **Sectors and (sub-)uses**: Please specify the sectors and (sub-)uses to which your comment applies according to the sectors and (sub-)uses identified in the Annex XV restriction report (Table 9). If your comment applies to several sectors and (sub-)uses, please make sure to specify all of them.
2. **Emissions in the end-of-life phase**: The environmental impact assessment does not cover emissions resulting from the end-of-life phase. To get a better understanding of the extent of the resulting underestimation, (sub-)use-specific information is requested on emissions across the different stages of the lifecycle of products, i.e. the manufacture phase, the use phase and the end-of-life phase. Please provide justifications for the representativeness of the provided information. In particular:
3. Please provide, at the (sub-)use level, an indication of the share of emissions (as percentages) attributable to these three different stages. An indication of annual emission volumes in the end-of-life phase at sector or sub-sector level would also be appreciated.
4. If possible, please provide for each (sub-)use what share of the waste (as percentages) is treated through incineration, landfilling and recycling. Please provide information to justify the estimates as well as information on the form of recycling referred to.
5. **Emissions in the end-of-life phase**: With respect to waste management options, additional information is requested on the effectiveness of incineration under normal operational conditions (for different waste types, e.g. hazardous, municipal) with respect to the destruction of PFAS and the prevention of PFAS emissions.
6. **Impacts on the recycling industry**: To get an understanding of the impacts of the proposed restriction on the recycling industry, information is requested on:
7. The impacts that the concentration limits proposed in paragraph 2 of the proposed restriction entry text (see table starting on page 4 of the summary of the Annex XV restriction report) have on the technical and economic feasibility of recycling processes (together with a clear indication on the waste streams to which the described impacts relate).
8. The measures that recyclers would need to take to achieve the proposed concentration limits.
9. The costs associated with these measures.
10. **Proposed derogations – Tonnage and emissions**: Paragraphs 5 and 6 of the proposed restriction entry text (see table starting on page 4 of the summary of the Annex XV restriction report) include several proposed derogations. For these proposed derogations, information is requested on the tonnage of PFAS used per year and the resulting emissions to the environment for the relevant use. Please provide justifications for the representativeness of the provided information.
11. **Missing uses – Analysis of alternatives and socio-economic analysis**: Several PFAS uses have not been covered in detail in the Annex XV restriction report (see uses highlighted in blue and orange in Table A.1 of Annex A of the Annex XV restriction report). In addition, some relevant uses may not have been identified yet. For such uses, specific information is requested on alternatives and socio-economic impacts, covering the following elements:
12. The annual tonnage and emissions (at sub-sector level) and type of PFAS associated with the relevant use.
13. The key functionalities provided by PFAS for the relevant use.
14. The number of companies in the sector estimated to be affected by the restriction.
15. The availability, technical and economic feasibility, hazards and risks of alternatives for the relevant use, including information on the extent (in terms of market shares) to which alternative-based products are already offered on the EU market and whether any shortages in the supply of relevant alternatives are expected.
16. For cases in which **alternatives are not yet available**, information on the status of R&D processes for finding suitable alternatives, including the extent of R&D initiatives in terms of time and/or financial investments, the likelihood of successful completion, the time expected to be required for substitution (including any relevant certification or regulatory approvals) and the major challenges encountered with alternatives which were considered but subsequently disregarded.
17. For cases in which **substitution is technically and economically feasible** but more time is required to substitute:
    1. the type and magnitude of costs (at company level and, if available, at sector level) associated with substitution (e.g. costs for new equipment or changes in operating costs);
    2. the time required for completing the substitution process (including any relevant certification or regulatory approvals);
    3. information on possible differences in functionality and the consequences for downstream users and consumers (e.g. estimations of expected early replacement needs or expected additional energy consumption);
    4. information on the benefits for alternative providers.
18. For cases in which **substitution is not technically or economically feasible**, information on what the socio-economic impacts would be for companies, consumers, and other affected actors. If available, please provide the annual value of EU sales and profits of the relevant sector, and employment numbers for the sector.
19. **Potential derogations marked for reconsideration – Analysis of alternatives and socio-economic analysis**: Paragraphs 5 and 6 of the proposed restriction entry text (see table starting on page 4 of the summary of the Annex XV restriction report) include several potential derogations for reconsideration after the consultation (in [square brackets]). These are uses of PFAS where the evidence underlying the assessment of the substitution potential was weak. The substitution potential is determined on the basis of i) whether technically and economically feasible alternatives have already been identified or alternative-based products are available on the market at the assumed entry into force of the proposed restriction, ii) whether known alternatives can be implemented before the transition period ends (taking into account time requirements for substitution and certification or regulatory approval), and iii) whether known alternatives are available in sufficient quantities on the market at the assumed entry into force to allow affected companies to substitute.

A summary of the available evidence as well as the key aspects based on which a derogation is potentially warranted are presented in Table 8 in the Annex XV restriction report, with further details being provided in the respective sections in Annex E.

To strengthen the justifications for a derogation for these uses, additional specific information is requested on alternatives and socio-economic impacts covering the elements described in points a) to g) in question 6 above.

1. **Other identified uses – Analysis of alternatives and socio-economic analysis**: Table 8 in the Annex XV restriction report provides a summary of the identified sectors and (sub-)uses of PFAS, their alternatives and the costs expected from a ban of PFAS. More details on the available evidence are provided in the respective sections in Annex E.

For many of the (sub-)uses, the information on alternatives and socio-economic impacts was generic and mainly qualitative. In particular, evidence on alternatives was inconclusive for some applications falling under the following (sub-)uses: technical textiles, electronics, the energy sector, PTFE thread sealing tape, non-polymeric PFAS processing aids for production of acrylic foam tape, window film manufacturing, and lubricants not used under harsh conditions.

More information is needed on alternatives and socio-economic impacts to conclude on substitution potential, proportionality, and the need for specific time-limited derogations. Therefore, specific information (if not already included in the Annex XV restriction report or covered in the questions above) is requested on alternatives and socio-economic impacts covering the elements listed in points a) to g) in question 6 above.

1. **Degradation potential of specific PFAS sub-groups**: A few specific PFAS sub-groups are excluded from the scope of the restriction proposal because of a combination of key structural elements for which it can be expected that they will ultimately mineralize in the environment. RAC would appreciate to receive any further information that may be available regarding the potential degradation pathways, kinetics or produced metabolites in relevant environmental conditions and compartments for trifluoromethoxy, trifluoromethylamino- and difluoromethanedioxy-derivatives.
2. **Analytical methods**: Annex E of the Annex XV restriction report contains an assessment of the availability of analytical methods for PFAS. Analytical methods are rapidly evolving. Please provide any new or additional information on new developments in analytics not yet considered in the Annex XV restriction report.

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| 6320 | Date:  2023/07/26 14:43  Content:  Scope or restriction option analysis  Environmental emissions  Description of analytical methods  Information on alternatives  Other socio economic analysis (SEA) issues  Request for exemption  Type:  BehalfOfAnOrganisation  Org. type:  Company  Org. name:  <redacted>  Org. country:  United States of America  Company name confidential:  Yes  Attachment:  <redacted>  Privacy statement:  The document includes commercially sensitive, strategic, confidential business, proprietary and company-identifiable information. This type of information needs to be protected to ensure our competitive advantage. | General Comments:  - |
| Answer to specific info request 1:  Please see the attached document. |
| Answer to specific info request 2:  Please see the attached document. |
| Answer to specific info request 3:  Please see the attached document. |
| Answer to specific info request 4:  Please see the attached document. |
| Answer to specific info request 5:  Please see the attached document. |
| Answer to specific info request 8:  Please see the attached document. |
| Answer to specific info request 10:  Please see the attached document. |

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| 6321 | Date:  2023/07/26 14:50  Content:  Scope or restriction option analysis  Hazard or exposure  Environmental emissions  Information on benefits  Request for exemption  Type:  BehalfOfAnOrganisation  Org. type:  Industry or trade association  Org. name:  PU Europe  Org. country:  Belgium  Attachment: | General Comments:  PU Europe is the European Federation of manufacturers of polyurethane thermal insulation products, from construction products manufactured in factories to in-situ formed foam, based in the European Union and the UK. PU Europe would like to raise the below comments which call for the fluorinated gases that are used in our industry(1) to be fully exempted from the scope of the restriction proposal: • In divergence from what the dossier submitters state, those substances are not classified as (very) persistent under REACH (they have atmospheric lifetime of days or months) and more importantly, they do not decompose in the environment into trifluoroacetic acid (TFA) in a meaningful fraction (see the EFCTC evidence (2)). Information submitted on hazard, exposure and risk assessments by the manufacturers and importers of those substances shall be carefully read by ECHA experts; • The objective to establish a very broad definition of PFAS, therefore covering thousands of substances with different (eco-) toxicity profiles, is not aligned with science and with ECHA’s own guidelines on Read Across policy. Furthermore, the OECD Expert Group on PFAS issued in 2021 (3) the following position that supports a more targeted restriction: “As PFASs are a chemical class with diverse molecular structures and physical, chemical and biological properties, it is highly recommended that such diversity be properly recognized and communicated in a clear, specific and descriptive manner. The term “PFASs” is a broad, general, non-specific term, which does not inform whether a compound is harmful or not, but only communicates that the compounds under this term share the same trait for having a fully fluorinated methyl or methylene carbon moiety”. The latter approach was again supported in 2022 by the majority of experts in the UNEP Environmental Effects Assessment Panel; • European risk management measures for products containing HFO/HCFO are in place and get continuously strengthened to achieve a European circular economy. In many countries, measures targeting the recovery and treatment of construction products when they reach their end of life (which might be in 50 years from now for insulation products) are discussed at the time of writing. Furthermore, several industry activities at national level aim to put in place take back schemes for construction waste at first; • Others jurisdictions in the world like the UK Health and Safety Executive and the US Environmental Protection Agency do not target HFOs/HCFOs in their efforts to regulate PFAS, they rather focus on certain groups of substances and certain applications. PU Europe sincerely hopes that the above comments will be taken into consideration and would like to recall the support of its members to the EU long term carbon neutrality goal. Our products are critical in curbing energy consumption, and hence CO2 emissions, during the use phase of buildings, including commercial, industrial, and public dwellings. Footnotes 1, 2, and 3 avaulable in the attachment. |
| Answer to specific info request 1:  Applications of fluorinated gases (Annex E.2.8.) -> Foam blowing agents |
| Answer to specific info request 9:  Our industry would like to ECHA to carefully assess the information prvoided by suppliers/importers of HFO-1336mzz-Z, HCFO-1233zd-E & HFO-1234ze-E. To our knowledge, the information already made public (via the EFCTC for instance) does support the conclusion that very limited to insignificant amount of TFA might be generated from the use of those susbtances. |

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| 6322 | Date:  2023/07/26 15:14  Content:  Scope or restriction option analysis  Hazard or exposure  Environmental emissions  Baseline  Information on alternatives  Information on benefits  Transitional period  Request for exemption  Type:  BehalfOfAnOrganisation  Org. type:  Company  Org. name:  Klüber Lubrication München GmbH & Co KG  Org. country:  Germany  Attachment:  <redacted> | General Comments:  General comments/Executive Summary  Lubricants play a vital role, for energy savings, emission reduction, resource saving, durability and longevity (for-life-lubrication), uninterrupted operation of vehicles and machines needed for the proper functioning of society. In principle, it can be said that lubricants are essential to move the mechanical components used worldwide. Without lubricants no car, no wind turbine, no plane, no machine nor any factory would work. This includes industrial and professional uses as well as machines and articles used by consumers. According to the Study "Influence of tribology on global energy consumption, costs and emissions" [Kenneth Holmberg et al] 23 percent of the global energy consumption is caused due to friction and reconditioning of worn components. As a result of the study the potential to reduce energy losses in short term (8 years) of 18 percent and in long term (15 years) of 40 percent are possible if new technologies to reduce friction and protection against wear will be used. This will lead to a reduction of 1.460 million tons CO2 emissions in short term and a reduction of 3.140 million tons of CO2 emissions in long term. All Lubricants, including those containing PFPE (Perfluoropolyethers) and/or PTFE (Polytetrafluoroethylene), play an important role in this reduction of CO2 Emissions, what is a major goal in the European Green Deal. The fields of application of lubricants and the requirements under which these lubricants need to work are very broad (wide temperature range, different pressures, inert or aggressive environment, for life lubrication, etc.) Many of these applications (high performance applications) are covered by harsh conditions but there are also other applications and conditions which require high performance lubricants to enable reliable, healthy and safe use of the lubricated equipment (e.g. oxygen supply, drinking water supply, production of food and pharmaceuticals, …). The above-mentioned applications require thermal and chemical stable polymeric PFAS like the Fluoropolymers (e.g. PTFE) and perfluoropolyethers (PFPE). For the manufacture of polymeric PFAS based lubricants (grease, lubricating oil and dry lubricant), in general Fluoropolymers like PTFE and PFPE Oil are being used. Fluoropolymers fulfill the OECD criteria as polymer of low concern (PLC) and are not considered a hazard for public health or the environment. PFPE oils as well as PTFE are high molecular weight polymers (more than 10.000 Da), they are not soluble in water, not bioavailable, not toxic and fall outside the definition of hazardous products, both for human and for the environment (information on PFPE oils are based on the information provided in the Safety Data Sheet and written information by our suppliers). Based on a scientific study addressing blanket risk assessment of PFAS conclude that ‘all PFAS should not be grouped together, persistence alone is not sufficient for grouping PFAS for the purpose of assessing human health risk and the definition of appropriate subgroups can only be defined on a case-by-case manner’ [J.K. Anderson et al., Regulatory Toxicology and Pharmacology, 2022] The REACh regulation requires in its Article 68 an "unacceptable risk to human health or the environment" for substances to be included into Annex XVII. Fluoropolymers (FP) and perfluoropolyethers (PFPE), classified as Polymers of Low Concern (PLC) do not pose such a risk during use or placing on the market. Furthermore, the manufacturing processes are highly controlled and will be further developed to reduce the risk of PFAS emissions. Therefore, it is highly questionable whether the legal requirements of Art. 68 of the REACH Regulation are met at all for PLC manufactured in a safe an controlled manner, in particular as a risk is constituted by the two factors “hazard and probability of emissions”. Klüber Lubrication supports the restriction of harmful PFAS or subgroups based on a scientific and risk-based approach. We are committed to develop, manufacture and place on the market products which are valuable for industry, society, and the environment and, in particular contribute to decarbonization strategies. Klüber Lubrication supports the goals of the EU Green Deal and the Chemicals Strategy for Sustainability. The current PFAS restriction proposal is contradictory to net-zero-carbon emission, energy transition, green mobility, digitalization. It will lead to even extended dependencies from non-EU countries and the imponderability of global supply chains. These major elements of the EU Green Deal and the Chemicals Strategy for Sustainability are at stake. Furthermore, and in contradiction to the EU Green Deal as well, it will increase the dependency of the EU from Non-EU countries which will continue using safe PFAS, in particular polymeric PFAS at least for their production processes. The basic misleading approach is a ban based on structural rather than on physical, chemical, and toxicological properties. This leads to a ban of valuable PFAS which can be safely manufactured, processed, used and disposed or re-used. Moreover, the unique and overarching properties of PFPE’s and PTFE’s for tribological applications are not even closely fulfilled by other lubricant systems available on the market. Either for harsh conditions or for demanding applications (sum of different fluoropolymer and perfluoropolyether properties) various tested alternatives fail (further details only available in our confidential attachment) In particular, fluoropolymers containing a C-C- backbone (e.g. PTFE) and polymeric perfluoropolyether containing a C-C-O backbone (e.g. PFPE), meeting the Polymer of Low Concern (PLC) criteria, shall be completely excluded from the ban. This shall include applications and uses where the current restriction proposal only grants an 18 month transition period or a 5 year derogation. |
| Answer to specific info request 1:  Our comments apply to following sectors and (sub-) uses • Lubricants • Solvents • Additives For detailed information please see confidential attachment |
| Answer to specific info request 2:  During our work we found out that there are already projects running to develop processes for the recycling or up-cycling of used PFAS based materials. As an example Dyneon/3M already developed an up-cycling processes for fluoroplastics Dyneon/3M up-cycling plant: article can be found under following link: www.kunststoffe-international.com/841786 This plant is active and collects data for the planning of future PFAS up-cycling plants. There is also a company called InverTec located in Bayreuth which developed an up-cycling process and plans to build such up-cycling plants. https://www.invertec-ev.de/en/ For the collection of the used fluoropolymers a company named Element9 KG was formed which will collect the materials and put them into the up-cycle plants to close the cycle. For further detailed information to this question please see confidential attachment. |
| Answer to specific info request 3:  The effectiveness of incineration under normal operational conditions with respect to the destruction of PFAS and the prevention of emissions was evaluated in the following two studies: Waste incineration of Polytetrafluoroethylene (PTFE) to evaluate potential formation of Per- and Poly-Fluorinated Alkyl Substances (PFAS) in flue gas [Aleksandrov et al, 2019] Pilot-Scale Fluoropolymer Incineration Study: Thermal Treatment of a Mixture of Fluoropolymers under Representative European Municipal Waste Combustor Conditions [Gehrmann et al, 2023] Additionally, the prevention of emission is regulated in the European industrial emission directive 2010/75/EU. For further detailed information please see confidential attachment. |
| Answer to specific info request 5:  Proposed derogation 5 s for Lubricants For detailed information please see confidential attachment. |
| Answer to specific info request 6:  Additional exemption for chemical processing, machinery and laboratories are needed We and in general industry and professional users need the following exemptions for use of polymeric PFAS for chemical processing and laboratories: 1. Spare parts for existing equipment 2. A general, unlimited exemption for use of polymeric PFAS for chemical processing and laboratories of whatever kind. Without these exemptions former long-term investments would be at stake, which may lead to a relocation of the affected operations to non-EU countries even for the production and analysis of non-PFAS products. As these PFAS polymers are polymers of low concern and are used by industrial or professional users, there are no significant risks during use and at end-of-life. For detailed information please see confidential attachment. |
| Answer to specific info request 8:  In the explanatory notes for the Lubricants derogation 5 s of the current PFAS restriction proposal derogation there is a limitation to professional and industrial uses under harsh conditions and for safe functioning and safety of equipment limited to industrial and professional settings. In several applications PFAS lubricants in very small amounts ensure a safe functioning even under non harsh conditions. Failure or even reduced performance may lead to a complete failure not only of the lubricated component but complex machines (e.g. machine tools, passenger cars, trucks, trains, aviation), facilities (e.g. oxygen and air separation, operation of electrical grids e.g. power switches) and plants (e.g. steel manufacturing, automotive production, food and pharma production). Furthermore PFAS based lubricants ensure the durability and longevity of consumer products and therefore support the goals of the European Green Deal to conserve resources and protect the environment Reduced availability or even sudden failure of transport systems (bus, passenger and cargo trains) may have severe impacts on people, society and economy. Unsafe conditions could occur in an industrial and professional setup and as well during consumer use. Very important! In our opinion harsh conditions, safe functioning and safety of equipment is also essential for consumer used products like the already mentioned passenger cars, electrical equipment, etc. Industrial and professional use shall therefore include industrially or professionally manufactured or maintained consumer used products. For detailed information please see confidential attachment. |

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| 6323 | Date:  2023/07/26 15:35  Content:  Other socio economic analysis (SEA) issues  Transitional period  Type:  BehalfOfAnOrganisation  Org. type:  Industry or trade association  Org. name:  <redacted>  Org. country:  Belgium  Company name confidential:  Yes | General Comments:  As an industry, we agree with the general objective of REACH to avoid harmful substances from entering the environment. However, because of the partial overlap of the PFAS restriction with the ongoing revision of the F-gas regulation on the use of refrigerants for heat pumps and on the use of foam-blowing agents in insulation tanks, some considerations need to be made. Indeed, while the new F-gas regulation will progressively introduce bans on the use of fluorinated gases with a high global warming potential as a refrigerant in heat pumps, the PFAS restriction may ban the non-flammable fluorinated gases to which some manufacturers switched as a result of the current F-gas Regulation. Therefore, the new F-gas regulation and PFAS restriction absolutely need to be aligned in content and timing. Furthermore, the combination of both legislations may only leave natural refrigerants available, which are flammable for residential and small commercial hydronic heat pumps and may need to follow certain safety requirements. Our members are therefore in the process of assessing their full hydronic heat pump product portfolio to ensure that refrigerants are available for all applications. For monoblock hydronic heat pumps with a rated capacity ≤ 70 kW, that are completely installed outdoors, we can say with certainty that we can agree with a full phase out of fluorinated gases. For these appliances, the applicable national, local or regional legislation or safety rules are limited, because the flammable refrigerant does not enter the house. However, to ensure sufficient time for component availability and redesign of the heat pumps and to avoid stranded investments, this phase-out cannot be introduced before 2030. What do we propose practically? To set the 1st January 2030 as the date of application for the PFAS restriction for monoblock hydronic heat pumps with a rated capacity ≤ 70 kW. In addition, we support derogations for maintenance of existing installations, as well as for buildings where safety standards prevent the use of non-PFAS alternatives. For the other appliances, we will need more time to evaluate, and we will come back in written in September. Regarding foam blowing agents here as well the timing of the PFAS restriction needs to be aligned with the revision of eco-design and energy labelling requirements for lots 1 & 2. Indeed, blowing agents used for thermal insulation of hot water storage tanks contain fluorinated gases considered as PFAS. While non-PFAS alternatives to these blowing agents exist, making the switch will require manufacturers to adapt their manufacturing process and sites. This will take time and, combined with increasing minimum energy efficiency requirements via the revision of eco-design and energy labelling requirements, limit further the number of storage tanks available on the market, at least until all manufacturers have successfully made the switch. Thus, we recommend aligning the restriction for PFAS used in foam blowing agents with the timing of the F-Gas Regulation as well as ecodesign and energy labelling delegated acts, . We are in the process of evaluating how this should be translated in the REACH restriction, and we will come back with additional input in written in September. |
| Answer to specific info request 1:  Our comments apply to applications of fluorinated gases, in particular a) heat pumps and b) foam blowing agents. a) EHI members manufacture hydronic heat pumps which rely on fluorinated greenhouse gases (F-gases), such as hydrofluorocarbons (HFCs) and hydrofluoroolefins (HFOs). Heat pumps are acknowledged by the Commission as key technologies for the decarbonisation of building and for achieving the EU’s 2030 and 2050 targets, and the REPowerEU Plan communication aims at deploying 10 million hydronic heat pumps in the next 5 years. Refrigerants, fluorinated and non-fluorinated, used in heat pumps are essential to their functioning, because they are the working fluid of heat pumps that allow heat to be transferred from source to sink. When heat pump manufacturers select alternative lower-GWP refrigerants, they take into account the substance’s flammability, toxicity and/or high pressure, but also the intended application and energy efficiency of the heat pump when using the refrigerant. And although natural refrigerants are being used as non-PFAS alternatives, they are not suitable to all heat pump systems due to their high flammability, toxicity and/or high pressure or their inferior energy efficiency. For instance, the safe use of propane requires hermetically sealing, which is not possible in split heat pumps. b) In addition, blowing agents used for thermal insulation of hot water storage tanks contain fluorinated gases considered as PFAS. Hot water storage tanks are a good mean to store energy, as water accumulates a lot of energy per unit of weight. As such, they are an important equipment to reduce the energy consumption from heating in buildings. The insulation foams used in storage tank to keep the heat is made in many appliances using HFOs, such as HFO-1233zd and HFO-1336mzz(z)). While non-PFAS alternatives to these blowing agents exist, making the switch will require manufacturers to adapt their manufacturing process and sites. This will take time and, combined with increasing minimum energy efficiency requirements via the revision of eco-design and energy labelling requirements, may limit further the number of storage tanks available on the market, at least until all manufacturers have successfully made the switch. In turn, this increases the risk of supply disruption, which is problematic for the roll-out of heat pumps that the European Commission aims at: as hot water storagesare highly relevant for heat pumps, a shortfall in storages would dramatically harm the heat pump ramp up. |
| Answer to specific info request 4:  We do not have detailed data on the impact of the proposed restriction on the recycling industry. However, here, we would like to stress the role of the current and future F-gas regulation, which already limits the emissions of HFCs and HFOs as much as possible, by setting requirements on leak checking and recovery as well as installation and maintenance by F-gas accredited specialists. In addition, any transfer of refrigerant needs to happen in closed systems in order to minimise or eliminate emissions. At the end of life, HFCs and HFOs needs to be recovered by F-gas accredited specialists so that the gases are recycled, reclaimed or destroyed. |
| Answer to specific info request 5:  We do not have detailed data on the tonnage and emissions of PFAS related to the proposed derogations. However, we have the following comments on the proposed derogations: • Derogation 5.i for maintenance of existing installations: we think that a 13,5 years derogation is not sufficient; Indeed, heat pumps have a longer expected life-time, which can vary from one brand to another and from one product to another, on top of being very sensitive to the way they are installed. A 13.5 years-derogation period for their maintenance and refilling would be too short and contradict the principles of circular economy and right to repair. To accommodate the diversity and ensure that all heat pumps installed before the application date of the PFAS restriction will be maintained during their entire lifetime, we recommend a time-unlimited derogation. • Derogation 5.j for buildings where safety standards prevent the use of alternatives: We will provide comments to this derogation at a later stage of the consultation. |
| Answer to specific info request 8:  Regarding non-PFAS alternatives to foam blowing agents: as indicated earlier, non-PFAS alternatives exist, although they require adapting the manufacturing processes and construction site (i.a. non-PFAS alternatives based on hydrocarbons might require additional safety measures by means of e.g. underground tanks). We are in the process of evaluating how this should be translated in the REACH restriction, and we will come back with additional input in written in September. One of our member companies is currently investigating switching from an HFO thermal insulation foam to cyclopentane. According to their analysis, although the initial economic investment is quite high, the switch can bring economic annual savings in the order of 16%. The savings are driven by two factors: • Mixing ratios: Cyclopentane has a lower cost than the comparable HFO; considering the total mixing ratios, an economic saving of 14% can be obtained. • Density: In addition, if we consider that cyclopentane has a lower density than the HFO thermal insulation foam, there is also a reduction in material consumption that has to be taken into account. As such, it appears that the substitution for a non-PFAS alternative for the thermal insulation of storage tanks is economically feasible. However, as the switch to non-PFAS alternatives will require manufacturers to adapt their manufacturing process and sites |

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| 6324 | Date:  2023/07/26 18:31  Content:  Scope or restriction option analysis  Hazard or exposure  Environmental emissions  Information on alternatives  Information on benefits  Other socio economic analysis (SEA) issues  Request for exemption  Type:  BehalfOfAnOrganisation  Org. type:  Company  Org. name:  Honeywell Advanced Limited  Org. country:  Ireland  Attachment: | General Comments:  Honeywell is a global manufacturer and importer of various fluorinated gases to the European Union (EU), including hydrofluorocarbons (HFC) and hydrofluoroolefins (HFO) refrigerants and their mixtures (blends), primarily used in commercial, industrial as well as domestic refrigeration, heating, ventilation and air conditioning (RHVAC or HVAC, including heat pumps) applications.  Contrary to what the Dossier Submitters claim, there are a range of PFAS substances, including various fluorinated gases, that are not very persistent (vP) as such and do not degrade to vP substances in meaningful amounts. For instance, the gases HFC-125, HFC-143a, HFC-245fa, HFO-1234ze(E), HFO-1233zd(E), HFO-1336mzz(E), HFO-1336mzz(Z), HCFO-1233zd(E) degrade in the atmosphere to carbon dioxide (CO2), Hydrogen fluoride (HF) and insignificant amounts of the only PFAS arrowhead substance - trifluoroacetic acid (TFA). Also comprehensive conclusive scientific evidence, including from respective REACH registration dossiers, confirms that many PFAS (comprising, HFC/HFO) are low hazard gaseous substances that do not exhibit risks similar to PBT/vPvB substances under Article XIII REACH. Thus, they should be excluded from the scope of the Proposal.  According to the REACH registration dossier and Chemical Safety Report (CSR) for TFA, although the substance fulfils certain criteria for persistency, it has scientifically established DNEL/PNEC thresholds and is not classified as PBT or vPvB substance under Annex XIII REACH. It does not raise equivalent levels of concern under Article 57(f) REACH. In this respect, ECHA already reviewed and evaluated a TFA dossier without concluding on the need for further regulatory actions.  Moreover, according to the most recent 2022 UNEP/WMO report: “TFA abundance and its environmental impacts have been assessed in many previous Assessments (e.g., Montzka, Reimann et al., 2011; Montzka, Velders et al., 2018; Carpenter, Daniel et al., 2018). Previous Assessments concluded that the environmental effects of TFA due to the breakdown of HCFCs and HFCs are too small to be a risk to the environment over the next few decades based on the projected future use of hydrocarbons, HCFCs, and HFOs.”  The most recent EEAP 2022 Assessment Report also concludes that “based on projected future use of these precursors of TFA [incl. HFC/HFO], no harm is anticipated” and that TFA “is unlikely to cause adverse effects out to 2100”.  Detailed analysis on HFC/HFO degradation products and relevant hazard, exposure and risks assessments of TFA is provided in the Honeywell submission reference no: 76bb3d12-2101-4390-82cf-3498b47e8015.  In addition, many HFC/HFO gases are already comprehensively/adequately regulated in EU and beyond, including via effective Risks Management Measures (RMMs) under the EU F-Gas Regulation, MAC Directive (F-Gas Regulation), ELV Directive, Industrial Emissions Directive and other legislation. These laws mandate inter alia progressive limitations on placing on the market (e.g., HFC (F-Gas) quotas and certain equipment bans), comprehensive containment measures (leaks controls, servicing certification for HFC/HFO in RHVAC), product (eco-)design and safe use standards (e.g., ISO 5149-1:2014, EN 378, disposal and end-of-life requirements (e.g., recuperation and re-use of F-gases)). These regulations could be strengthened at any time, if warranted.  Therefore, even those HFC/HFO gases that degrade to TFA in substantial rates, such as HFO-1234yf, HFC-134a or HFC-227ea, should be excluded from the PFAS restriction scope due to the absence of unacceptable or not adequately controlled risks within the meaning of Articles 68 - 69 REACH.  Furthermore, contrary to the requirements of Part II, Section 3 of Annex XV REACH Regulation, the Proposal is missing an objective, credible and specific enough assessment of “information on the risks to human health and the environment related to the manufacture or use of the alternatives” as well as on consistency of these alternatives with wider-EU decarbonization and sustainability policies (including, European Green Deal, Fit for 55, REPowerEU, etc.). These assessments are particularly important as far as certain key RHVAC uses of HFC/HFO are concerned.  In this respect, the “careful and impartial” assessment of all available information, including submitted by stakeholders during two Calls for Evidence (CfE) preceding the Proposal, unequivocally demonstrates the scarcity of safe and sustainable alternatives for many uses of HFC/HFO fluorinated gases including in commercial, industrial, and domestic RHVAC applications. Bans on such uses as suggested in the Proposal will result in very high costs on the society and the environment (climate change) and will be contrary to wider-EU policies as well as principles of the EU law.  In this respect, alternative refrigerants referred in the Proposal (often misleadingly called “natural refrigerants”), including CO2 (R-744), ammonia (R-717) and certain hydrocarbons (e.g., propane (R-290), isobutane (R-600a)) are suggested by the Dossier Submitters without adequate assessments of corresponding safety risks such as flammability, toxicity, very high operating pressures, etc. In the meantime, objective assessments of their intrinsic properties and reported incidents (Annexes II-IV) involving those refrigerants demonstrate that respective risks are considerably higher, and often cannot be adequately controlled, than from “fourth generation” HFC/HFO refrigerants specifically designed for these respective uses.  Moreover, two comprehensive studies in Appendixes 1 and 2 of our submission demonstrate that in case of substitutions proposed by Dossier Submitters for RHVAC sector the electricity consumption and respective GHG emissions will result to additional annual 6.9 TWhr/yr of demand and 2.7 MTonne/yr of CO2eq GHG emissions, and will incur additional electricity cost of 1-3.4 Billion €/yr for ~44% of the overall EU air conditioning and heat pumps (AC/HVAC) sector. The proposed substitutions will also add 5.7 TWhr/yr to annual demand on the electricity grid, 2.4 MTonne/yr of CO2eq emissions and additional electricity costs of 0.8-3 Billion €/yr in ~64% of the total commercial refrigeration sector. These costs, combined with potential losses or damages from potential incidents (see above) are too high and disproportionate in comparison with alleged concerns due to persistency of the TFA substance, which is negligible and we have demonstrated in our submission to ECHA with reference. This approach to alternatives is also against wider EU policies on climate change, decarbonization and sustainable energy. It will also add, as we state above 1-3.4 Billion €/yr for ~44% of the overall EU air conditioning and heat pumps (AC/HVAC) sector.  Considering all available information, Honeywell submits that the following HFC/HFO fluorinated refrigerants should be excluded from the scope of the Proposal: HFC-125, HFC-143a, HFO-1234ze(E), HCFO-1233zd(E), HFO-1336mzz(E), HFO-1336mzz(Z), HFC-245fa, HFC-365mfc, HFO-1234yf, HFC-134a, HFC-227ea, HFC-236fa, or their uses in commercial RHVAC/HVAC applications should be subject to time unlimited derogations in line with the provisions of Articles 68 and 69 REACH.  In line with previous practices this exclusion or derogation should also cover maintenance or repair, refitting and reselling activities involving second hand RHVAC systems already placed on the market or installed. |
| Answer to specific info request 1:  Honeywell is a global manufacturer and importer of various fluorinated gases to the European Union (EU), including hydrofluorocarbons (HFC) and hydrofluoroolefins (HFO) refrigerants and their mixtures (blends), primarily used in commercial, industrial as well as domestic refrigeration, heating, ventilation and air conditioning (RHVAC or HVAC, including heat pumps) applications. |
| Answer to specific info request 2:  see attachment |
| Answer to specific info request 3:  see attachment |
| Answer to specific info request 4:  see attachment |
| Answer to specific info request 5:  see attachment |
| Answer to specific info request 8:  see attachment |
| Answer to specific info request 9:  see attachment |

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| 6325 | Date:  2023/07/26 18:39  Content:  Scope or restriction option analysis  Environmental emissions  Information on alternatives  Information on benefits  Other socio economic analysis (SEA) issues  Request for exemption  Type:  BehalfOfAnOrganisation  Org. type:  Company  Org. name:  EPTA SPA  Org. country:  Italy  Attachment:  <redacted>  Privacy statement:  The information in the attachments is confidential and was prepared by Epta solely for ECHA's use. It is not to be relied on by any third party without Epta prior written consent. | General Comments:  Epta is a multinational Group operating in the commercial refrigeration sector with its brands Costan, Bonnet Névé, Eurocryor, Misa, Iarp and Kysor Warren. Headquartered in Milan (Italy), EPTA operates in the Retail, Food & Beverage and Ho.Re.Ca. sectors. Epta is a commercial refrigeration specialist with 6,300 employees, a far-reaching presence all over the world covered by 40 technical and commercial sites, more than 100 countries reached with our products and 11 manufacturing facilities, for a total surface area of over 390,000 m2 and annual output of 490,000 units. Our offer includes traditional refrigerated display cases, vertical and semi-vertical positive temperature cabinets, vertical and horizontal negative temperature cabinets, built-in refrigerator cabinets (Plug-in) for Retail and Food&Beverage, medium and high-power refrigeration units, refrigerated cabinets and cold rooms for the catering industry. Along with our products we offer a complete range of services, from designing and planning for stores and refrigerated lines to aftersales services, maintenance, remote monitoring and retrofitting cabinets. Epta is a complete system provider for commercial refrigeration, combining its range of products with a host of services supplied by its specialist brands: from designing store layouts to refrigerating plants, refrigerated cabinets and services, installation and end-of-lifecycle services. Since several years the appliances and systems we supply use exclusively natural refrigerants in order to achieve an drastic reduction of the carbon emissions while ensuring that our systems do not cause any chemical impact on the environment. Commercial refrigeration products and systems based on natural refrigerants today are widely available on large scale and their diffusion in the last few years has increased significantly in Europe and all over the world, making them today the preferred choice of the contractors and end users. However, we still have to use several fluorinated PFAS refrigerants for the maintenance of existing equipment and systems to compensate for the leakages in operation and maintenance. Besides, PFAS substances are used in a significant number of components, subassemblies and spare parts used in the refrigeration equipment, most of which do not have alternatives to date, such as compressors, fans, cables, electronic components, cabinet paints and coatings, heat exchangers, o-rings, gaskets, insulation and foams, which are critical for the refrigeration industry. It needs to be highlighted though that PFAS substances contained in solid objects are not subject to be released in the environment during the product lifetime. Furthermore, these products are properly treated at the end of their life under the WEEE Directive. Therefore, in reason of their negligible PFAS release factor and considering that the majority of these components, sub-assemblies and spare parts currently used by the industry do not have non-PFAS alternatives to-date, for those components a time unlimited derogation should be put in place, also to ensure the availability of spare parts for the repair of the existing equipment in line with the Resource Efficiency and Circular Economy action plan. |
| Answer to specific info request 1:  Applications of fluorinated gases (Refrigeration) |
| Answer to specific info request 2:  Direct emissions in a refrigeration system are comprised of the effects of refrigerant released into the atmosphere over the lifetime of the unit and afterwards. This includes: • Losses during manufacturing and charging of the unit with the refrigerant • Annual refrigerant loss from gradual and continuous leaks during usage and/or the leakages that occur during the operation of service and maintenance • Losses at the end of life disposal of the unit • Atmospheric reaction products from the breakdown of the refrigerant in the atmosphere. Units have become more reliable over the past decades and continue to improve. The values are displayed hereafter for various types of units. For the commercial refrigeration systems average unit lifetime is assumed 10 years. The EU Commission Preliminary Impact Assessment for the revision of the F-Gas Regulation (EU 517/2014) indicates the Annual lifetime, disposal and manufacturing emission factors (2020) in Refrigeration: - Central systems 9% (LE) / 18% (DE) - Condensing units 6%(LE) / 25% (DE) - Hermetic units 1% (LE) / 35% (DE) - Industrial (food) 4% (LE) / 30% (DE) - Industrial (other) 5% (LE) / 30% (DE) where LE = lifetime emissions, DE = disposal emissions. The manufacturing emission factor is generally considered very close to 0. The amount of refrigerant that is lost annually must be every time recharged in order to maintain the expected system performance, particularly the capability to maintain the food products at the correct conservation temperature, and the targeted energy efficiency. The EOL of a refrigerating system includes a first phase of remediation, through which the residual refrigerant is recovered. • After the remediation, the refrigerator and the refrigerant are treated separately • The former is disposed in waste recovery plants for the recovery of the materials through manual disassembly, hulk shredding, material separation, recycling of the materials in different percentages, and the remaining part by incinerating or landfill • On the other hand, the recovered refrigerant will be regenerated by filtering and distillation • During dismantling of the equipment the foaming agent partially present in the insulation material may be recovered. |
| Answer to specific info request 5:  Ref.: Maintenance and refilling of existing HVACR equipment put on the market before [18 months after EiF] and for which no drop-in alternative exist until 13.5 years after EiF Critical is the maintenance of existing equipment and systems that are generating continuing emissions, which maintains a considerable consumption of HFC/HFOs to compensate for the leakages in operation and maintenance. For example, R-404A and R-507a (market standard since 2009) are banned in all new commercial refrigeration equipment from January 1st, 2020, but they can still be used for the maintenance of existing plants to regularly compensate for the leakages. The main source of emissions of PFAS substances in the refrigeration sector is the consumption of HFC/HFOs during the lifetime of the equipment. The quantity of HFC/HFO refrigerant used by our company and in the Italian refrigeration market for the servicing and maintenance of the existing systems in operation in the market is indicated in Section V. There do not exist non-PFAS drop-in alternatives for existing systems, but the alternatives to those conventional HFC/HFO refrigerants are available on the refrigeration market as deep retrofitting or new equipment using natural refrigerants (R744/CO2 and R290/propane). In order to address this issue it is of highest importance to raise the attention of the member states towards a structural program of green transition in commercial refrigeration, supporting food retailers to replace existing plants using PFAS and highly climate-impacting HFC/HFOs with new commercial refrigeration systems that use natural refrigerants. |
| Answer to specific info request 7:  PFAS are used in a significant number of components, subassemblies, spare parts used in the refrigeration equipment, most of which do not have alternatives to date, such as compressors, fans, cables, electronic components, cabinet paints and coatings, heat exchangers, o-rings, gaskets, insulation and foams, which are critical for the refrigeration industry. PFAS substances contained in solid objects are not subject to be released in the environment during the product lifetime. Furthermore, these products are properly treated at the end of their life under the WEEE Directive. Therefore, in reason of their negligible PFAS release factor and considering that the majority of the components, sub-assemblies and spare parts currently used by the industry do not have non-PFAS alternatives to-date, for those components a time unlimited derogation should be put in place also to ensure the availability of spare parts for the repair in line with the Resource Efficiency and Circular Economy action plan. |
| Answer to specific info request 8:  There is growing acceptance of the use of natural refrigerants in the commercial and industrial refrigeration markets. The commercial refrigeration industry has fully adapted its technologies and product portfolio replacing HFC/HFOs with natural refrigerants, carbon dioxide (R744, CO2 - GWP1) and propane (R290 – GWP3), which are currently used in the market for new refrigeration systems and which do not cause direct greenhouse effect nor are PFAS substances. Refrigerant R744(CO2) is used for centralized refrigeration systems, with power racks and/or condensing units, for medium and large stores and supermarkets in commercial and industrial refrigeration. Commercial refrigeration products and systems based on natural CO2 refrigerant are widely available on a large scale and their diffusion has increased significantly in Europe and all over the world. According to market analyst Atmosphere (2022), 57,000+ supermarkets in EU were using transcritical CO2 systems in Dec 2022, with 60% annual growth rate. Natural refrigerant R290(propane) is used for self contained and/or hermetically sealed equipment in commercial, professional and household refrigeration according to the ISO/EN 60335 safety standards, 5 million display cases and beverage coolers in EU installed to date. Different natural refrigerant based solutions are available in the market from a several different suppliers and companies and compete against each other in this sector, and in most cases for a given application there are several possible solutions using natural refrigerants. The wide adoption of natural refrigerants is mainly due to - Near-to-zero GWP and HFC quota free - Beneficial for the world environmental targets, and as such not covered by F-Gas Regulation - Free from any potential chemical risk for the environment, including PFAS harmful effects - The cost is low and stable compared to chemical refrigerants (especially if patented) - Pure fluids, free from any glide effect, hence highly performant and efficient - Compliant with any future environmental regulation - Exempted from obligations of regular leakage checks (CO2eq based), record keeping (5 years), labelling of products and equipment, certification of personnel performing the maintenance, annual reports, etc. The expected benefits of the transition to natural refrigerants are: • Environmental, a considerable reduction in climate altering and PFAS chemical effects • Modernization of the food distribution network • Create green jobs in the manufacturing and and reskilling service companies • Reduction of operating costs, in particular those related to the maintenance due to the high cost of HFC/HFOs and bureaucratic burdens related to the documentation, leakage inspection and administrative prescriptions • Stop the big business in the illegal HFC market |

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| 6326 | Date:  2023/07/26 19:04  Content:  Hazard or exposure  Environmental emissions  Type:  Individual  Country:  Sweden | General Comments:  It is of utmost importance that substances that are dangerous to humans will be banned from being used carelessly. |

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| 6327 | Date:  2023/07/26 19:52  Type:  BehalfOfAnOrganisation  Org. type:  Company  Org. name:  <redacted>  Org. country:  France  Company name confidential:  Yes  Attachment:  <redacted>  Privacy statement:  See Confidential Attachment | General Comments:  - |
| Answer to specific info request 1:  See Confidential Attachment |
| Answer to specific info request 6:  See Confidential Attachment |
| Answer to specific info request 7:  See Confidential Attachment |
| Answer to specific info request 8:  See Confidential Attachment |
| Answer to specific info request 10:  See Confidential Attachment |

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| 6328 | Date:  2023/07/27 00:23  Content:  Scope or restriction option analysis  Hazard or exposure  Information on alternatives  Information on benefits  Other socio economic analysis (SEA) issues  Transitional period  Request for exemption  Type:  BehalfOfAnOrganisation  Org. type:  Company  Org. name:  W. L. Gore & Associates GmbH  Org. country:  Germany  Attachment:    <redacted>  Privacy statement:  As disclosure would undermine the protection of commercial interests of a natural or legal person, including intellectual property (Art 4(2) of Regulation (EC) No 1049/2001 | General Comments:  We provide information in the attachments |
| Answer to specific info request 1:  See attachments |

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| 6329 | Date:  2023/07/27 00:32  Content:  Scope or restriction option analysis  Hazard or exposure  Information on alternatives  Information on benefits  Other socio economic analysis (SEA) issues  Transitional period  Request for exemption  Type:  BehalfOfAnOrganisation  Org. type:  Company  Org. name:  W. L. Gore & Associates GmbH  Org. country:  Germany  Attachment:    <redacted>  Privacy statement:  As disclosure would undermine the protection of commercial interests of a natural or legal person, including intellectual property (Article 4(2) of Regulation (EC) No. 1049/2001 | General Comments:  Information is provided in the attachments |
| Answer to specific info request 1:  Pharmaceuticals and Veterinary Products processing |
| Answer to specific info request 6:  Applications in the processing of Pharmaceuticals and Veterinary Products |

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| 6330 | Date:  2023/07/27 04:50  Content:  Scope or restriction option analysis  Environmental emissions  Information on alternatives  Other socio economic analysis (SEA) issues  Request for exemption  Type:  BehalfOfAnOrganisation  Org. type:  Company  Org. name:  <redacted>  Org. country:  Japan  Company name confidential:  Yes  Attachment:  <redacted>  Privacy statement:  Including our product information | General Comments:  The following two items are included in the attached confidential appendix. 1) Additional request to comment 3967 ・We request that FKM sealing used in hollow fiber filtration membrane modules used in the pharmaceutical manufacturing process be exempt from this PFAS restriction. The reason or basis for the request is the same as for the comment 3967. The reasons why FKM is irreplaceable are described in the appendix file. 2) Supplemental information to comments 3942, 3967, 4291 and 4354 ・Emissions in the end-of-life phase ・Recycling and Disposal ・General toxicology of fluoropolymers ・Addition of reference URLs |
| Answer to specific info request 1:  1. Industrial food and feed production 2. Semiconductors 3. Water supply, wastewater treatment, and water recycling fields 4. Pharmaceutical manufacturing process (3 and 4 are not applied to the sector and (sub-)uses) |
| Answer to specific info request 2:  The percentages of emissions are as follows: ・The manufacture phase 0% ・The use phase 0% ・The end-of-life phase 100% Our products are manufactured outside the EU. Since the articles are imported, the raw materials are not distributed within the EU. According to the guide of Plastics Europe [1], fluoropolymers are inert, resistant to high thermal load, do not contain harmful elements which can leach out and do not emit gases. According to the guide of SPI (the Society of the Plastics Industry) [2], significant decomposition occurs only when fluoropolymers are heated above their recommended processing temperatures. (e.g., PVDF: 232℃, PFA: 380℃) Furthermore, since Fluoropolymer can withstand most chemicals [3], emissions during the use phase are considered to be 0%. Since emissions of the manufacture and use phase are 0%, emissions of the end-of-life phase are considered to be 0%. [1] https://fluoropolymers.plasticseurope.org/application/files/6216/3178/0517/Fluoropolymers\_Safe\_Hand\_EN\_\_June\_2021.pdf [2] https://access.plasticsindustry.org/ItemDetail?iProductCode=BU201&Category=PUBLICATIO [3] https://knf.com/fileadmin/Global\_files/Downloads/Chem\_Resist\_\_Pvdf\_Peek.pdf |
| Answer to specific info request 3:  Fluoropolymers can be incinerated in special waste incinerators, at a minimum temperature of 800℃. Control measures, such as wet scrubbing with alkaline solutions, may be necessary to maintain the emission of hydrogen fluoride below that specified by National or local regulation. This method of disposal is most relevant to disposal where the fluoropolymer is a component of a larger article. [Ref.] https://fluoropolymers.plasticseurope.org/application/files/6216/3178/0517/Fluoropolymers\_Safe\_Hand\_EN\_\_June\_2021.pdf |
| Answer to specific info request 4:  As fluoropolymers are used predominantly in small components of larger finished products it is usually impractical to separate, decontaminate and reclaim the small amounts of fluoropolymers used. The presence of fluoropolymers is not a barrier to recycling the main component. Some of the recycling companies are listed in the appendix file. [Ref.] https://fluoropolymers.plasticseurope.org/application/files/6216/3178/0517/Fluoropolymers\_Safe\_Hand\_EN\_\_June\_2021.pdf |

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| 6331 | Date:  2023/07/27 04:55  Content:  Scope or restriction option analysis  Hazard or exposure  Information on alternatives  Information on benefits  Other socio economic analysis (SEA) issues  Transitional period  Request for exemption  Type:  BehalfOfAnOrganisation  Org. type:  Company  Org. name:  <redacted>  Org. country:  Japan  Company name confidential:  Yes  Attachment:    <redacted>  Privacy statement:  This information has our commercial interests, including intellectual property, would be undermined. | General Comments:  We are a fluoropolymer processing manufacturer who handles PTFE, PFA, FEP etc. Fluoropolymers are socio-economically essential and no-hazardous under appropriate conditions. We believe that the proposed resrtiction is extremley excessive to regulate all PFAS as one category despite the variety of types. We supports the two statements made by JFIA and FCJ on the issues of proposed restriction, as per attached in Section IV. |
| Answer to specific info request 1:  Food contact materials and packaging (Annex E.2.3.) Food contact materials |
| Answer to specific info request 7:  This comment includes "Non-stick coatings in industrial and professional bakeware" identified in Annex E 2.3. Please see attached confidential file in the Section V. |
| Answer to specific info request 8:  This comment includes "Consumer cookware and home kitchen appliances" and "Industrial food, drink and feed processing" identified in Annex E 2.3. Please see attached confidential file in the Section V. |

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| 6332 | Date:  2023/07/27 10:31  Content:  Scope or restriction option analysis  Request for exemption  Type:  BehalfOfAnOrganisation  Org. type:  Company  Org. name:  Gleason-Pfauter Maschinenfabrik GmbH  Org. country:  Germany  Attachment:    <redacted> | General Comments:  Gleason Consultation PFAS Restriction Proposal  We are a leading company in the development and manufacture of production systems for gears of all kinds. Our product offerings include gear and transmission design software, gear cutting and measuring machines, automation solutions, tools, clamping devices, plastic gears, and the interconnection of these individual elements to form intelligent manufacturing systems. The Gleason Group has over 2200 employees, with manufacturing and service offices in all major industrial centers worldwide. Gleason sees itself as a company that promotes and takes environmental protection into account. So we are constantly working on improving things and keeping environmental awareness high. We are committed to a sustainable business model that includes every Gleason employee worldwide. We use best practice concepts for waste avoidance and energy efficiency. Our product design and internal manufacturing methods also follow resource-saving principles. Looking to the future, we are all concerned not to create sustainable problems. To build products that do not contain or release harmful substances and are also unproblematic and recyclable in terms of disposal. We understand the efforts to remove harmful PFAS from the market as soon as possible and welcome this approach. The faster this goal can be achieved, the better it is for people, the environment and nature. In order to understand the difficulties in the overall context of "mechanical engineering", it is important to know that during the development, construction and operation of a machine, a wide variety of requirements must be taken into account for the materials or products used. Thus, in addition to a purely visual requirement for the appearance of a machine, many other requirements take precedence. These are mainly technical requirements such as temperature resistance, chemical resistance, abrasion resistance, UV resistance, etc. At Gleason, the planned PFAS ban will primarily affect the interface elements within a machine. Overall, however, there is a high number of materials and products that are affected. These include, but are not limited to:  - Seals that ensure that lubricating oils, cooling water and cooling lubricants do not leak out of the machine - Hoses that guide the different media through the machine to the place where they are needed - Coatings that are partially applied to our components (protection or function) - Lubricants that ensure that parts can move against each other permanently - Cooling lubricants that make it possible to process metals in the first place - Filters that ensure that the removed metal can be separated from the cooling lubricant and reused - Sliding bushings, which have to be used instead of traditional bearings in order to meet the requirements for the installation space - Cables that enable power supply and signal exchange within the machine  Almost all of the above examples are finished products from other companies. For example, seals are selected according to our needs, but usually from a standard catalog. Hoses are also selected by us according to technical parameters, but not manufactured. The same applies to all other materials. In connection with the PFAS ban, we see above all that we are often not in a position to evaluate the ingredients of the materials. Either because there is no clear information about it or we are simply not familiar with the ingredients or know which ones are harmful or harmless. So, in our case, we are pure end users. If we had the choice to choose a technically comparable product that does not contain PFAS, we would certainly do so. However, in the absence of alternatives, we now have no choice but to choose the products offered by the manufacturers. So the first step must start with the manufacturers. Only when they are able to offer products with identical properties can the end user choose an alternative. If we were forced to implement the PFAS ban today, we would no longer be able to build machines. The ban could be equated with a closure of the company. Unemployment in the entire international mechanical engineering industry (and of course in many other branches of industry) would be the result.  Appendix: - List of questionable elements at the Ludwigsburg site in Germany (excerpt): Stellungnahme\_PFAS\_Datenbeispiel.xlsx - VDW Beispiele\_Fluorpolymerdichtungen\_in\_Wzm.ppt |