PFAS restriction

BCR stakeholders meeting

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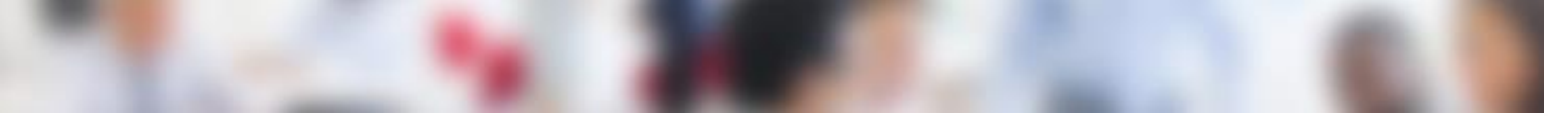

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PFAS within the technological industry

- **Broad ranges of uses within Agoria:**
  - Cooling/heating gases
  - Sealings, gaskets, …
  - Semiconductor fabrication
  - Filters for off-gas and waste water treatment, …
  - Electronics, cables, …
  - Foams,
  - Lubrificants
  - Batteries,
  - ….
- **Both in the products provided as well as in the production processes of our members**

Challenges:

- **Identification of all uses = impossible**
- **Alternatives = not existing/known for multiple uses**
- **Fear of negative impact of substitution:**
  - Performance,
  - Reliability,
  - Environmental performance,
  - Life time impact,
  - ….
- **Detailed information = need for in-depth analysis which is impossible in short timeframe**

Multiple companies @Agoria will be affected.
Proper designed exemptions/derogations will be needed !!

Some generic elements

- **General exemption needed for repair (as produced), maintenance, re-use …:**
  - No drop in alternatives are existing for most of the specific identified uses
  - Maintenance and repair will become impossible after the application of the restriction
  - Clarity whether re-use is still possible …
- **A clear, transparent procedure to define & review exemptions/derogations is needed:**
  - Only about 20 exemptions are foreseen for 10.000 substances and multiple uses
    - ROHS directive with 239 exemptions for 6 substances
  - Given multiple use cases with no clear alternatives in view – need of proper exemption/derogation scheme integrated in the restriction process:
    - Generic exemption 13,5 years include review clause (also for derogations) after 6,5 years
- **PFAS & recycling = challenging with proposed low concentration values:**
  - The proposed concentration values are very low and could have a dramatic impact on plastic recycling – with small traces of PFAS
  - Include generic exemption for recycled material in order to avoid any supplementary burden for plastic recycling

PFAS: cooling & heating applications

- **What is the issue?**
  - The low GWP F-gasses are PFAS substances falling under the scope of the restriction
  - The F-gas regulation (under revision) with a gradual phase out of high GWP F-gasses pushes industry towards the use of PFAS given that natural gasses still have technological challenges/limitations
- **Products are designed with a specific F-gas:**
  - No drop in alternative are existing for the product (impact on energy efficiency & ecodesign)
  - Means that complete installations have to be replaced once restriction is in place and maintenance is needed
- **Substitution of PFAS in specific use case, will be challenging:**
  - Strong increasing market due to push towards climate neutrality
  - Push to PFAS as cooling/heating gas through the F-gas regulation
  - Product design has to comply with multiple regulatory frameworks (eco-design/ESPR)
- **Timeline from design to product on the market is challenging:**
  - Impossible to achieve in a short time frame for large existing product portfolio:
    - Push from F-gas regulation to lower GWP gasses (typical PFAS) and huge jump in short time to complete phase out !
  - Potential impact on decarbonization targets due to potential negative impact on availability of certain products

PFAS: cooling & heating applications

- **Potential emissions covered through stringent regulation on emissions of F-gasses**
  - Only certified installers are allowed for maintenance, repair, …
  - Obligation of regular maintenance in order to avoid leakages
  - Multiple leakage tests: during manufacturing, installation, etc…
- **End-of-life F-gas/PFAS:**
  - Legal obligation to evacuate F-Gas at the end-of-life
  - Recycling route (linked to purity): limiting the amount of new F-gasses put on the market = will be impossible through the restriction !!!!
  - Destruction by incineration at high temperature in order to avoid negative impact on greenhouse gas effect = destruction PFAS
- **Need for a time-limited derogation (incl. review clause) of the use of PFAS in cooling / heating equipment**
  - Use the F-gas regulation with the gradual phase out of F-gasses rather than the restriction

PFAS: sealing/gaskets/filters …

- **What is the issue?**
  - Due to technical features PFAS are used in multiple applications such as sealings, gaskets, filters, …
  - Substitution is mostly not straightforward and will have multiple undesired effects
    - Leakage of hazardous substances, environmental impact, complete redesign of products, ….
- **Products are designed taking into account the characteristics of the PFAS containing sealing, gasket, filters, …:**
  - No drop in substitutes available = huge issue for maintenance, repair which is done on regular basis
- **Substitution:**
  - Most products/installations have a long life time with regular maintenance & repair
  - No maintenance/repair possible with original part = scrapping of product/installation = huge costs
  - Substitution in filters will lead to unwanted effects: increased environmental pollution (BAT!)
  - In almost all cases where PFAS is used for its technical performance: to date no known substitute is available – other applications are substituted (PFAS = higher cost)
- **Timeline: lots of uncertainties with other regulatory challenges such as ESPR/IED/…**

PFAS: sealing/gaskets/filters …

- **Emissions**
  - During the production of the sealing/gasket/filter/.. : emissions should be regulated through IED
  - Typical no emissions during the integration & use phase
- **End-of-life phase – more complex situation/depending on type of product:**
  - Products falling under take-back obligations:
    - Metallic recycling – mostly at high temperature = destruction of PFAS
    - Plastic recycling – mostly mechanical = problem with low concentration values for plastic recycling
    - Recycling obligations (metallic & plastic fraction)
  - Other products = industrial waste mostly with dedicated waste treatment
- **Need for a proper exemption for use of PFAS sealing/gaskets/filters in which the PFAS gives a specific properties:**
  - Dealing with corrosive substances, high fluctuating temperature, pressure, dust, water, oil, polluting substances, ….
  - How to define this exemption properly?

PFAS: batteries (binders)

- **What is the issue?**
  - In batteries (cells) PFAS (fluoropolymers) are typical used as a binder
  - Needed for the good functioning of the battery providing the properties of PFAS (e.g. heat resistance)
- **Substitution:**
  - Challenging as PFAS provides specific functionalities for a higher efficiency to multiple batteries chemistries
  - To date no real substitutes are know
- **Timeline: lots of uncertainties with challenges for testing, requalification, supply chain issues….**

PFAS: batteries (binders)

- **Emissions**
  - During the production of the battery & application of PFAS: IED
  - Once the battery is sealed: under normal conditions no PFAS (or other material) is released during the use-phase
- **End-of-life phase - products falling under take-back obligations:**
  - Repair: how to deal with the complexity of battery packs with PFAS and repair once restriction is in place
  - Re-use/remanufacturing: in principle with complete modules – no changes to the battery cell & no emissions of PFAS to be expected – not clear whether this will be possible with a PFAS restriction?
  - Recycling – first step is dismantling (under development): always need for proper protection measures to avoid emissions (exposure) to PFAS and other hazardous materials
  - Metal recycling:
    - Pyrometallurgy – high temperature recycling with destruction of PFAS
    - Hydrometallurgy – not clear
- **Need for an exemption for the use of PFAS as binder material in batteries**

Conclusions to date

- **High uncertainties of impact of the PFAS restriction in multiple applications:**
  - Alternatives for several applications are not available to date
  - Important impact on the circular economy: life-time extension (maintenance, repair, re-use, reman) + recycling
  - Development to market will take several years
  - Multiple crucial applications remain under the radar
- **Need for proper derogations & exemptions**
  - General for the circular economy (life-time extension & recycling)
  - Identified applications: derogation for avoiding double regulation & exemptions with proper timeline - 13,5 years + review in 6,5 years to provide enough time for R&D on substitution
- **No general process for exemption/derogation within REACH restriction process**
  - Important to integrate and avoid blanket restriction with huge effects on multiple Belgian companies

How to avoid unwanted side effects?

- **No general process for exemption/derogation within REACH restriction process**
  - Important to integrate and avoid blanket restriction with huge side effects
- **Multiple contributions already with a link to the technological industry:**
  - Orgalim, Digital Europe, Recharge, EPEE, Applia, EISA, ….
  - Including several impacted companies
- **To date > 3.500 comments (> 50.000 pages) already available & uploaded during the consultation and multiple yet to be (incl. Agoria) …:**
  - Multiple questions for derogations/exemptions for specific use cases …

HOW WILL BE RESPONDED TO THOSE MULTIPLE QUESTIONS FOR DEROGATIONS/EXEMPTIONS ?

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Thank you

For your attention

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