

3M Science.
Applied to Life.™

Meeting with EC DG GROW (Director Carlo Pettinelli & Team)

Online meeting
24 September 2020

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Agenda

- Tour de Table
- Introduction to 3M
- EU Policy Agenda: Green Deal & Circular Economy
- Chemicals Strategy for Sustainability
- PFAS

The background of the slide is a complex, abstract pattern of overlapping triangles and polygons in various shades of blue, ranging from light cyan to deep navy. The shapes are sharp and angular, creating a dynamic, crystalline effect.

Introduction to 3M

3M in Europe, Middle-East & Africa



- 3M located in 53 countries across 7 regions
- 21,000+ employees including 1,500 scientists, 5,800 customer-facing employees, and 11,100 workers in Manufacturing & Supply Chain
- 44 manufacturing sites and 20 Distribution Centers

**We are the company
with ideas that stick.**



Our 4 Business Areas for Government, Industry & Society

Safety & Industrial



- Personal safety
- Adhesives and tapes
- Abrasives
- Closure and masking
- Electrical markets
- Automotive aftermarket
- Industrial minerals

Transportation & Electronics



- Automotive and aerospace
- Electronics
- Transportation safety
- Display materials
- Commercial solutions
- Advanced materials

Health Care



- Medical solutions
- Oral care
- Separation and purification sciences
- Health information systems
- Food safety

Consumer



- Stationery and office supplies
- Home improvement
- Home care
- Consumer health care

The background of the slide is a complex, abstract geometric pattern composed of numerous triangles in various shades of blue and teal. The triangles are of different sizes and orientations, creating a dynamic, crystalline effect. The colors range from deep navy blue to bright cyan, with some areas appearing lighter due to the way the triangles are layered.

EU Policy Agenda & Green Deal

3M supports the EU Single Market & Green Deal: science based legislation to support innovation & jobs

- ☐ 3M is committed to promoting innovation, safe use of our products, sustainable manufacturing and stewardship across the industry.
- ☐ 3M advocates for a balanced regulatory environment based on scientific facts to ensure European industries remain competitive and sustainable.

3M & PFAS:

- ☐ 3M manufactures, imports, uses, and supplies various PFAS and PFAS containing products for numerous, primarily industrial, applications.
- ☐ We produce PFAS in 2 sites: Zwijndrecht, Belgium and Gendorf, Germany.
- ☐ 3M participated to the Call for Evidence related to an evaluation of restriction options for PFAS.



Sustainability at 3M - Apply science to improve every life



Design solutions that do more with less material, advancing a global circular economy.



Innovate to decarbonize industry, accelerate global climate solutions and improve our environmental footprint.



Create a more positive world through science and inspire people to join us.

[2020 3M Sustainability Report](#)

Alignment with the UN Sustainable Development Goals

The UN SDGS serve as a global pledge to leave no one behind in pursuit of social, environmental and economic peace and prosperity



Circular Economy: Up-Cycling Fluoropolymers in Germany



Up-Cycling Ground breaking for a closed loop!

Why Up-Cycling perfluoropolymers?

Perfluorinated polymers are materials with very special features everybody appreciates in their applications, from cook and baking equipment and contemporary architecture to making our cars more efficient and less oil and gas consuming to protecting our chemical plants from harmful substances.

Life became cleaner and safer with using perfluoropolymers in many aspects, but when the end of life has been reached the valuable material goes to incineration or landfill disposal. So across countries we see that landfill deposits flow over – cost for waste management is increasing and valuable (irreplaceable) raw materials are disposed instead of being kept in the value chain. Fully fluorinated, unfilled material commonly goes into Re-Cycling processes, degrading the material to very fine powder or wax, but with limited usability.

This document will show you the benefits for all parties involved, if fully fluorinated polymers are Up-Cycled instead of disposed. How we do it and how you can contribute to saving resources and cost.



The background of the slide is a complex, abstract geometric pattern composed of numerous triangles in various shades of blue and teal. The triangles are of different sizes and are arranged in a way that creates a sense of depth and movement. The colors range from a deep, dark blue to a bright, light teal. The overall effect is a modern, high-tech aesthetic.

Chemicals Strategy for Sustainability

3M Viewpoint on the Chemicals Strategy for Sustainability

- ❖ REACH has helped provide predictability and a level playing field. That needs to be maintained.
- ❖ Any legislative proposal or regulatory process needs to be based on sound science.
- ❖ Unacceptable risks associated with a substance need to be demonstrated before any risk management option is carried out.
- ❖ Regarding the reported PFAS Action Plan:
 - Restricting the 4,000+ PFAS substances risks uprooting the scientific basis of REACH and impacting European industries' ability to innovate in technologies central to achieving a European green deal and the circular economy.
 - An overly narrow regulatory focus on Persistence only will undermine innovation, including to produce durable and high performing materials that support societal sustainability goals.
 - A blanket restriction on PFAS would impact many sectors and have far-reaching effects on innovation, investment and jobs in Europe – need to involve all stakeholders.

The image features a complex, abstract background composed of numerous overlapping triangles in various shades of blue, ranging from deep navy to bright cyan. The triangles are arranged in a way that creates a sense of depth and movement. In the upper-left quadrant, the letters 'PFAS' are displayed in a bold, white, sans-serif font.

PFAS

PFAS: Many Important Applications



**Low Emission
Transportation**
Combustion Engine &
Alternative Energy
Aerospace



**Corrosion Protection & Emission Reduction
Chemical & Power plants**



**Fire-safe, durable
roof for large events**



**Semi Conductor & Pharmaceutical
Manufacturing**



Medical Applications



Fire Suppression



**Energy Recovery
& Heat Transfer**
Data Center Cooling

The majority of PFAS uses today are in applications with high societal value and important to the functioning of our modern life

Some of these critical applications are supporting the Green Deal agenda – example of specialty chemicals



Protecting art & valuable assets from fire



Cooling data centers without using energy



Protecting people from fire with low GWP solution



Reducing climate impact of the energy sector



Cooling batteries in EVs

Fluoropolymers are also in critical applications

Fluoropolymer sales to key sectors in the EU (2015)			Example application and benefit of fluoropolymers	Statistics on sectors where fluoropolymers are used
Transport	18,500 Tonnes	300 €m	 Fluoropolymer fuel hoses enable fuel savings and reduce damage from emissions, worth ~ €140m per year in EU	> 13 million employed
Chemicals & power	16,500 Tonnes	220 €m	 Corrosion prevention saving hundreds of millions of € each year in the EU	Nearly 3 million employed
Cookware	3,500 Tonnes	60 €m	 Easy clean non-stick properties, allows cooking with less fat	Production value in the order of €2 billion
Electronics	3,500 Tonnes	50 €m	 Critical in semiconductor manufacturing, enabling progression in IT that has generated trillions of € globally in the last 20 years	EU semiconductor market worth circa €25 billion
Food & pharma	3,000 Tonnes	40 €m	 Safer and cheaper food and pharma by preventing contamination and material failure	Nearly 5 million employed
Textiles & architecture	3,000 Tonnes	40 €m	 Enabling novel and unique 'landmark' architectural designs	> 2 million employed
Medical applications	1,500 Tonnes	20 €m	 Reduces the risks of failure, cross-infections and clogging of medical equipment	Europe accounts for 41% of global medical device patents
Renewable energy	500 Tonnes	<5 €m	 PV module production efficiency increases which save €40m – €90m each year in the EU	Europe leading the global market in installed capacity
Other	2,000 Tonnes	30 €m	 –	–
TOTAL	52,000 tonnes	780 €m		

Source: Plastics Europe (2017) Socio-economic Analysis of the European Fluoropolymer Industry



Fluoropolymers – 4 reasons for exclusion from a restriction

- Fluoropolymers are highly stable high molecular weight materials. They have no bio-availability and no mobility in the environment
- Fluoropolymers do not degrade in the environment
- They are indispensable in many applications with high societal value
- Fluorinated emulsifiers are used in a controlled way in the manufacture of some fluoropolymers



3M Considerations on PFAS

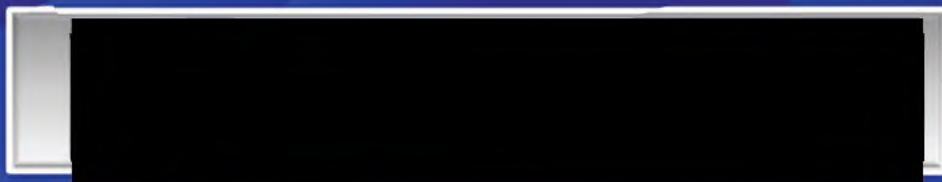
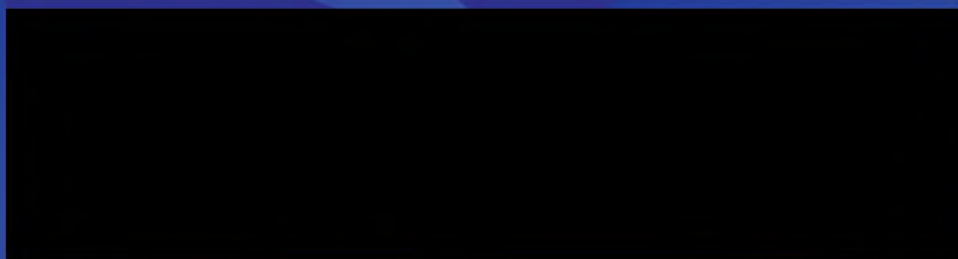
- ❖ Legislative and regulatory measures based on grouping of 4,000+ substances with different chemical structure, physiochemical properties and an extremely wide range of applications across industrial sectors is neither scientifically justified nor appropriate and highly difficult to implement.
- ❖ Instead of a blanket approach, we believe PFAS of concern can be better addressed under REACH when grouped according to their structure.
- ❖ High molecular weight fluoropolymers should be excluded from restriction as they are polymers of low concern and important to many key sectors.
- ❖ Persistence on its own is not enough to assess or demonstrate an unacceptable risk to human health and environment and, therefore to ban or restrict substances being manufactured, imported, or used in products, particularly in such a broad fashion.

3M Considerations on Essential Uses

- ❖ The essential use concept could not replace a proper impact assessment process and could not be used to bypass a proper risk assessment.
- ❖ Applying the essential/non-essential use concept in the absence of a demonstrated unacceptable risk would mean that products would be banned on the basis of unnecessarily intrusive judgements of what is good or bad for society, which is by nature relative and must remain evolutionary.
- ❖ Applying the essential/non-essential use concept should allow the use of substances when the benefits to society, including socio economic benefits, outweigh the demonstrated unacceptable risk, if any, and for which there are no equally performing, technically and economically feasible alternatives available. Such an analysis should also account for a life cycle assessment point of view.

Other Considerations

- ❖ Most PFAS are manufactured for industrial uses. Most are manufactured in closed systems and under controlled conditions. PFAS-enabled articles have well controlled waste streams, including recovery and recycling (e.g. medical devices, automotive, electronics), so typically PFAS-containing materials in those uses would not add to the environment at the end-of-life of products.
- ❖ The majority of PFAS uses today are in applications of high societal value and important to the functioning our modern life (e.g. electronics, automobiles, airplanes, solar panels, medical imaging, medical devices, medicines, buildings, and many others). 3M-manufactured PFAS products are used in many critical mainly industrial applications where they present significant socio-economic benefits and have no technically and economically feasible alternatives with equal performance.



**We are a company
that helped Neil Armstrong
take one small step
on the moon.**

