

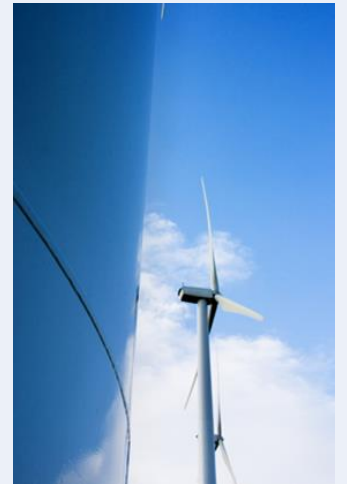
Global PFAS regulations: A manufacturer's perspective

The AGC logo is located in the top right corner of the slide. It consists of the letters 'AGC' in a bold, blue, sans-serif font. A small red square is positioned between the 'G' and 'C'.A solid white rectangular box is positioned above the company name, likely used to redact a name or title.

AGC Chemicals Europe, Ltd.

Your Dreams, Our Challenge

- Introduction to AGCCE
- Applications and Products
- Case studies
 - Fluon[®] Polytetrafluoroethylene
 - FORBLUE[™] FLEMION Ion Exchange Membrane
 - AMOLEA[™] yd
- Regulations and challenges
 - UK and EU
 - Asia and Oceania
- Summary



- **Established in 2007**

UK and NL offices merged & became "AGC Chemicals Europe"

- **Head Office in Thornton Cleveleys, Lancashire**

ICI, previous owner of this UK production site, established a joint venture with AGC in 1981.

In 1999, AGC became the sole owner of this joint venture plus the PTFE businesses in the US and the UK.

- **Approx. 200 employees**

- **Production:**

Fluon® PTFE/ETFE Fluoropolymers

- **Sales & Marketing:**

- Fluon® PTFE/ETFE/PFA Fluoropolymers
- AFLAS® Fluoroelastomers
- Fluorochemicals (Coatings, Films, etc.)
- Other Speciality Chemicals



Head Office (UK)



Commercial Centre (NL)

Product Range from AGC Chemicals Europe

Fluon® PTFE

Resins
Compounds
Micropowders
Dispersions

Main Applications:

- Seals, Washers, Tape
- Semi-Finished Parts
- Thermoplastic Blends
- Dry Lubricants
- Glass cloth Fabric Coating



Fluon® ETFE

Resins
Compounds
Powders

Main Applications:

- Wire & Cable Insulation
- Moulded Parts
- Packings
- Corrosion-Resistant Linings
- Fuel Hose & Coolant Hose



Fluon® ETFE FILM

Main Applications:

- Architectural Film
- Release Film

F-CLEAN™

Main Applications:

- Greenhouse Film



AsahiGuard®

Main Applications:

- Waterproof
- Stain-Repellent
- Coating for:
 - Textiles & Apparel
 - Automotive Parts
 - Synthetic & Natural Leather



LUMIFLON™

FEVE Resin

Main Applications:

- UV/Corrosion-Resistant
- Coating for:
 - Bridges
 - Buildings
 - Ships
 - Airplanes
 - Windmills



Fluon® PFA

Resins
Compounds
Powders

Main Applications:

- Wire & Cable Insulation
- Moulded Parts
- Packings
- Corrosion-Proof Coatings
- Film



AFLAS®

Fluoroelastomers

Main Applications:

- O-Rings
- Cables
- Packings
- Seals
- Pump Covers



Solvents

Main Applications:

- Precision Cleaning (Metals, Plastics)
- Drying Agent (After Cleansing with Alcohol / Hydrocarbons)
- De-Watering (After Aqueous Cleaning)



AMOLEA™ 1224yd

Main Applications:

- Air Conditioning
- Refrigeration



FORBLUE™ FLEMION

Ion Exchange Membranes

Main Applications:

- Desalination
- Chemical Separation
- Electrodialysis



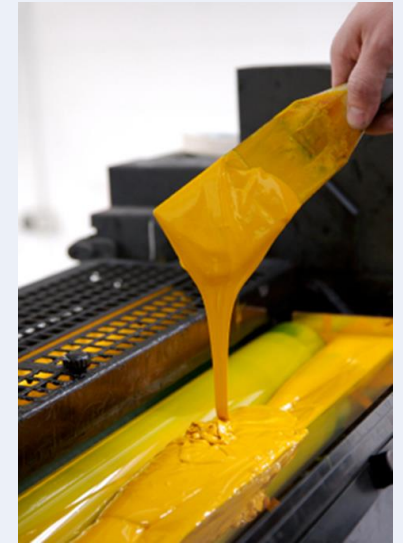
See www.agcce.com for further details

PTFE comes in many varieties:

- Micropowders
- Fine powders
- Aqueous dispersions
- Granular

Unique combination of properties:

- Heat resistance – usable in a wide temperature range
- Chemical resistance to most chemicals and solvents
- Nonflammability
- Low Dielectric Constant
- Low Friction
- Non stick
- Weather resistance



Fluorinated cationic ion exchange membranes for chlor-alkali production

Advantages

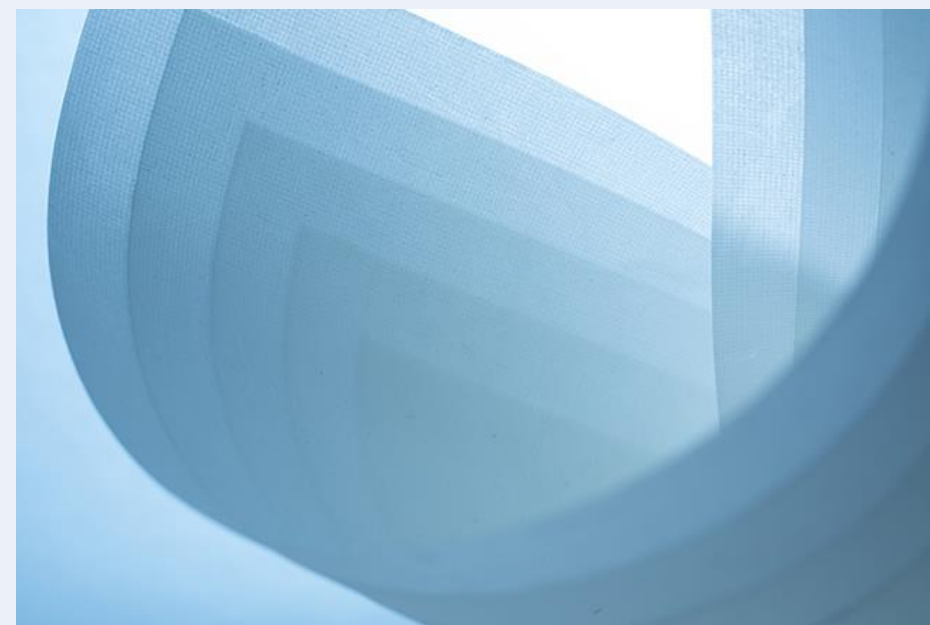
- Resistant to chlorine & caustic soda
- Energy savings from low electric resistance
- High current efficiency
- More stable performance; minimises the impact of brine impurities
- High quality NaOH & KOH production

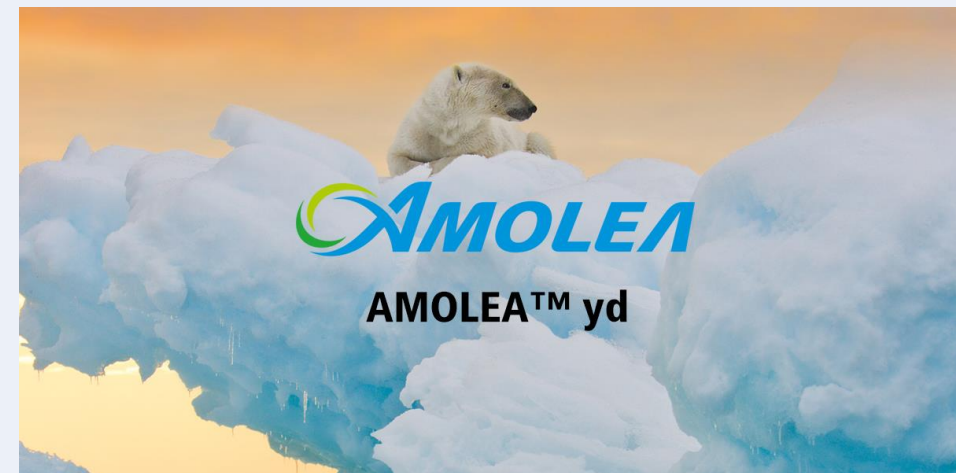
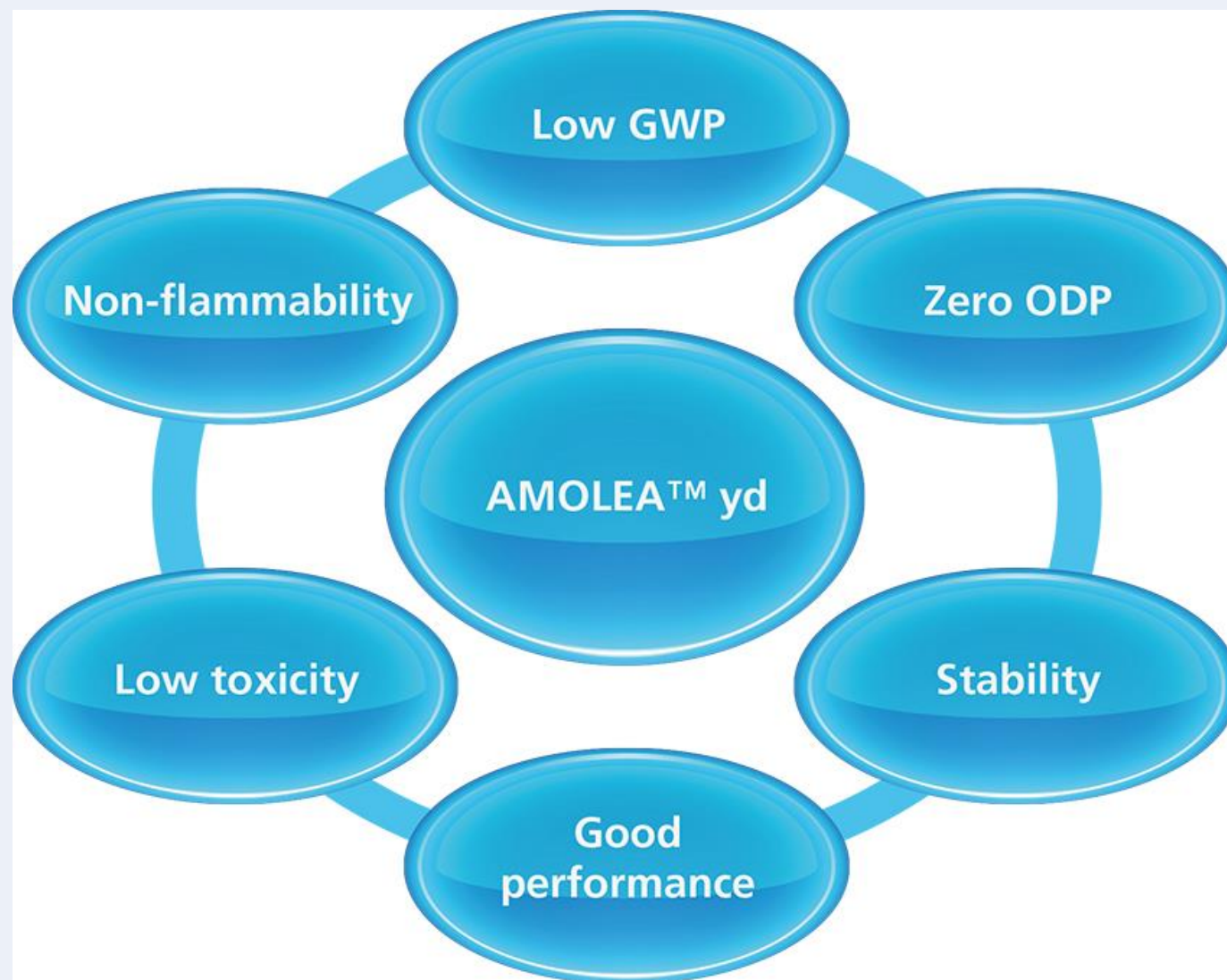
Features

- High resistance to both chemicals & acids
- High mechanical strength & stability
- Highly efficient at dissociation of strong acids
- Achieves both high ionic conductivity & ionic selectivity
- Flexible, even though it is an ion exchange membrane

Applications

- Manufacture of caustic soda (sodium hydroxide)
- Manufacture of caustic potash (potassium hydroxide)
- Manufacture of chlorine





Applications

- Centrifugal Chillers
- Rankine Cycle System
- Waste Heat Recovery Pumps
- Blowing Agent



UK

PFAS Strategy – draft RMOA expected spring 2022

PFOA POP restriction

F-Gas regulations (expected to be updated in 2022)

UK REACH



EU

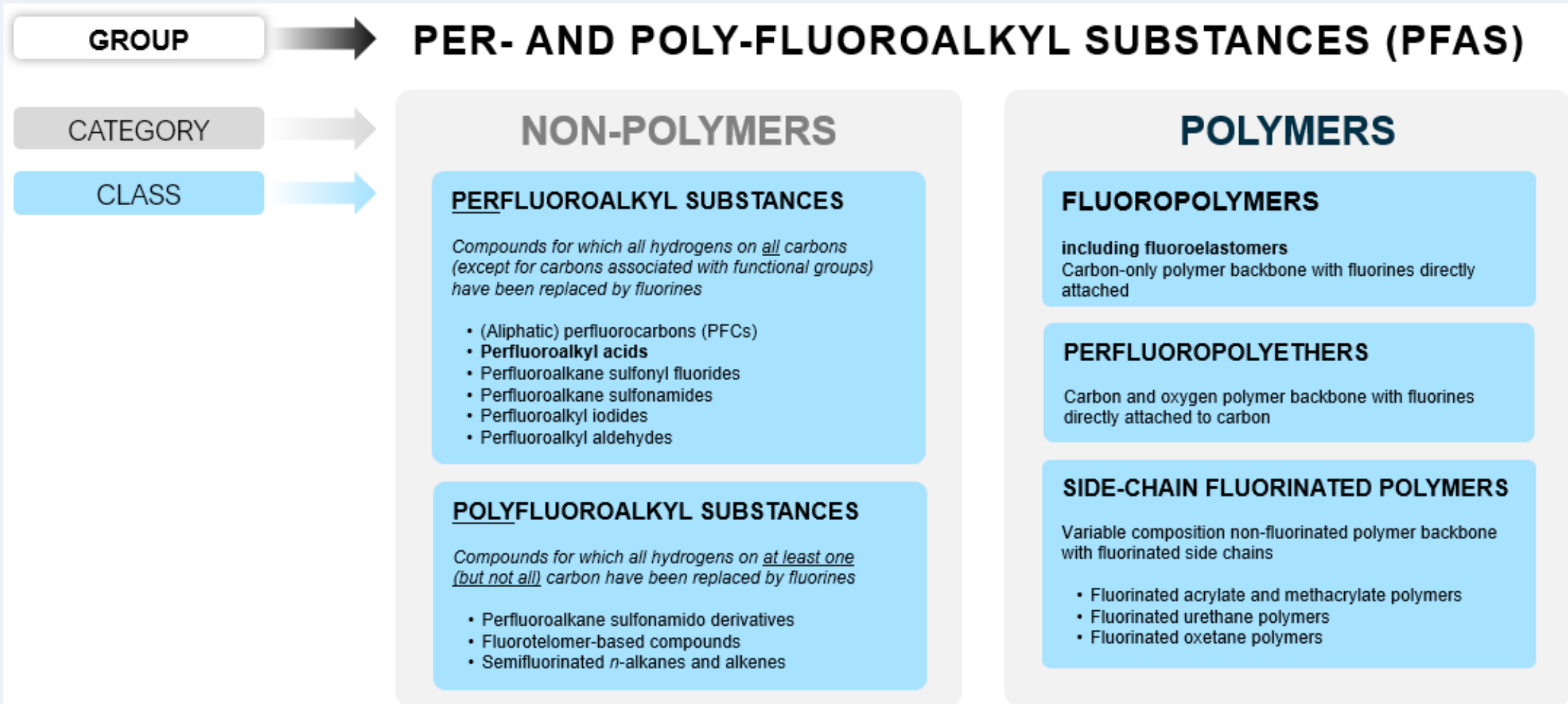
PFHxA – waiting for SEAC opinion

5 member state 'all PFAS' – restriction proposal expected January 2023

PFOA POP restriction

F-Gas regulations (expected to be updated in 2022)

EU REACH



Nearly all PFAS under discussion for Restriction in the EU

Japan



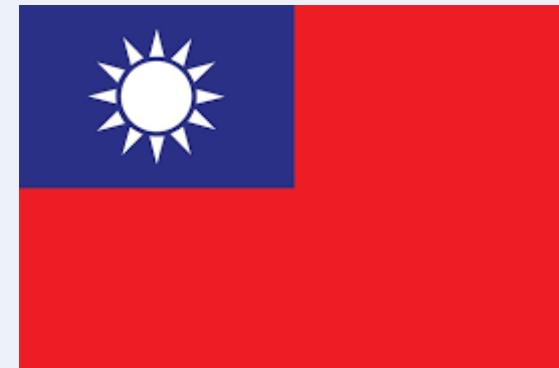
Thailand



China



Taiwan



Singapore



Vietnam



Indonesia



All have regulations relating to PFOA

Source: Envix [アジア諸国のPFOA規制動向 | EnviX](#)

Timeline for PFOA its salts and related substances:

PFOA and its salt

Class 1 Specified Chemicals, Imports restriction, and others

2021 April

Publication

2021 October

Enforcement

No threshold is set under
the Chemical Substances
Control Law CSCL.

PFOA and related substances

Class 1 Specified Chemicals, Essential uses, Imports restriction, and others

2022 Autumn

Publication

2023 Spring

Enforcement

BAT Report: You can submit a report that contains reduction efforts and control management measures on any products with unintentional residue. Upon receipt the report, the products are exempted from the Class 1 specified chemicals.

- PFAS are diverse and should be regulated in groups rather than as a whole.
- Fluoropolymers and other PFAS have unique combinations of properties in which many cases, do not have technical equivalent alternatives.
- Many of the diverse applications of fluoropolymers and other PFAS are critical for modern society and for meeting the EU Green Deal objectives.

Thank you and do get in touch to hear more.

Dr Martyn Shenton
Product and Process Steward, AGC Chemicals Europe, Ltd

www.agcce.com

Thank you for your attention!



Your Dreams, Our Challenge