



Progress beyond

Phasing out Fluorosurfactants at Solvay

A responsible innovation journey



What are PFAS?

PFAS: very broad family of substances, including thousands of different chemicals, all with very different profiles and properties.

Among them, the use of fluorosurfactants in the production of some fluoropolymers represents a global challenge for the industry.



FLUROSURFACTANTS

are process aids that help ingredients work together in manufacturing some fluoropolymers. Solvay is innovating by using a new polymerization process that does not require the use of fluorosurfactants.

FLUROPOLYMERS

are durable and chemically inert materials offering very high resistance to chemicals and high temperatures.

They are fundamental in applications that serve a sustainable future.

Quick Facts on Solvay and PFAS



FIREFIGHTING FOAMS



Solvay never manufactured Firefighting foams, a key source of certain PFAS in the environment

CONSUMER PRODUCTS



Solvay is exiting the use of fluorosurfactants in consumer products (95% already done)

INDUSTRIAL APPLICATIONS



- Aerospace
- Automotive
- Chemical & Power
- Electronics
- Medical devices

Solvay's fluorosurfactant uses concentrate on the manufacture of highly specialised niche products contributing to a more sustainable society

A constant improvement of the sustainability of our products and operations

2013

→ Voluntarily phase out use of first generation fluorosurfactants globally

TODAY

Use of fluorosurfactants only in Spinetta Marengo, Italy

- Manufacture limited quantities of a new generation fluorosurfactant (C6O4) + transition to non-fluorosurfactant technology
- Constant improvement of emission treatment technologies to nearly 100% (technical zero)

2026

→ By 2026 Solvay will manufacture nearly 100% of its fluoropolymers without the use of fluorosurfactants.

Solvay leads the industry in expanding its non-fluorosurfactant technology to manufacture fluoropolymers

Solvay's fluoropolymers are specialty materials that are needed in a variety of applications that support a more sustainable society.



Renewable energy installations



Lithium-ion batteries



Components for compact engines in hybrid vehicles



Medical device components



Smart devices

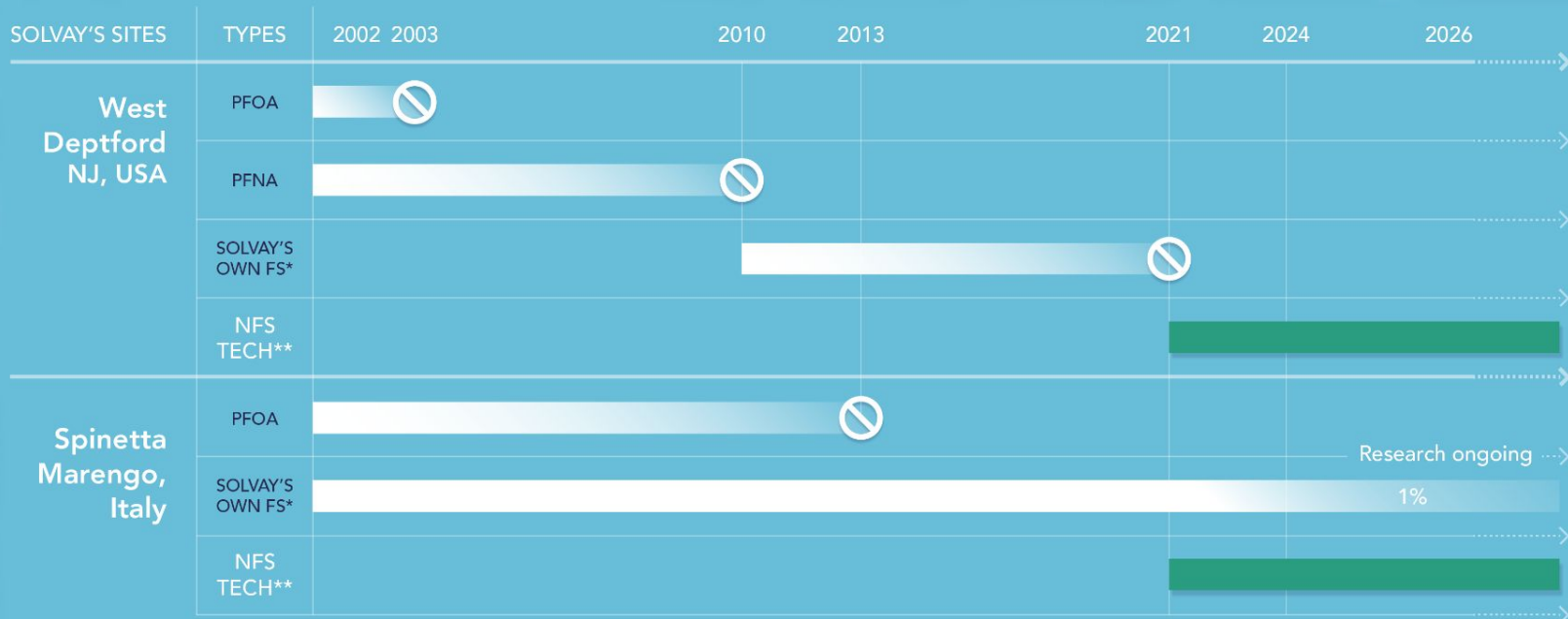
SOLVAY'S PRODUCTS ARE:

- Synthetic rubbers with outstanding sealing properties critical for semiconductors, automotive and healthcare industries, also used as mechanical seals for pumps, compressors, valves, and more.
- Resins used as coatings and lubricants offering a protective coat or lining resisting in harsh environments used in automotive and aerospace applications as well as industrial uses.
- Ionomer key materials for electric storage, fuel cells and electrolyzers.

- Aerospace
- Automotive
- Chemical and Power
- Electronics
- Healthcare



Solvay's fluorosurfactant phase-out journey



*SOLVAY'S PROPRIETARY FLUOROSURFACTANT

** SOLVAY'S PROPRIETARY NON-FLUOROSURFACTANT TECHNOLOGY

Non-fluorosurfactant technology conversion of Solvay's Fluoropolymer Products



| | | | |
|--|--------------------|---|---|
| | Hylar® | Converted in 2021 | Crystalline high molecular weight powder form of polyvinylidene fluoride (PVDF) specifically designed for solvent-based coatings to provide improved gloss. It forms mechanically strong and tough films that have a broad useful temperature range. |
| | Teflon® HS | Converted in 2021 | Synthetic rubbers for industrial purposes (other grades). |
| | Teflon® FKM | Roll out between 2024 and 2026 | Synthetic rubbers mainly used for O-rings, seals and gaskets fitted for a broad range of fluids and chemicals, including gases, oils, lubricants, fuels, and additives. Used for critical sealing applications in Semiconductor, Oil & Gas, Automotive, Chemical Processing and Healthcare industries where high purity and long service life are essential. |
| | Teflon® PFR | Further R&I needed for conversion (1% volume at Spinetta) | Synthetic rubbers offering outstanding sealing behaviour in the widest range of aggressive media along with excellent compression set values and best in class low temperature flexibility These sealing elements can be used in mechanical seals, pumps, compressors, valves, reactors, mixers, sprayers, dispensers, quick connect couplings, controls, instrumentation, etc. in a wide range of industrial sectors. Critical component with no viable alternative for now. |
| | Algoflon® | Grades made with fluorosurfactants will be stopped in July 2023 | Resin mainly used for coatings and films in chemical industry for vessel linings and pipework for reactive and corrosive chemicals; industrial applications, such as plain bearings, gears, side plates. Where used as a lubricant, it reduces friction wear and energy consumption of machinery. |
| | Hyflon® | Grades made with fluorosurfactants will be stopped in July 2023 | Semicrystalline resins that are resistant against aggressive environments and against thermal stress cracking - particularly suitable for pipes and tubes used in chemical transportation and in the oil & gas industry. It can be used for linings of valves, tubes, and fittings that require special thermal and chemical resistance. Used in the electrical industry as primary insulation for high-temperature hook-up wires. |
| | Aquivion® | Full conversion in 2026 | Ionomer enables solutions for megatrend-related challenges such as zero-emission transportation and integration of renewable energy in electrical grids. Key material for electrical storage and conversion devices such as fuel cells, electrolyzers and flow batteries used in conjunction with zero-emission electricity sources. |

Halar, Solef, Fomblin, Galden, Fluorolink, Algoflon (some grades) are Solvay's fluoropolymers that were never manufactured using fluorosurfactants

Thank you.



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[solvay.com](https://www.solvay.com)