

Welcome



Chemours®

**COURAGEOUS
CHEMISTRY™**

We are Chemours

Chemours is a different kind of chemical company, focused on creating a better world through the power of our chemistry: essential products, produced in a responsible way.



Chemours worldwide



60+

Production and
research sites, joint
ventures, and offices

6,400

Employees

120

Countries where we
deliver



Chemours Dordrecht

Founded in

2015

Employees

> 500

Europa

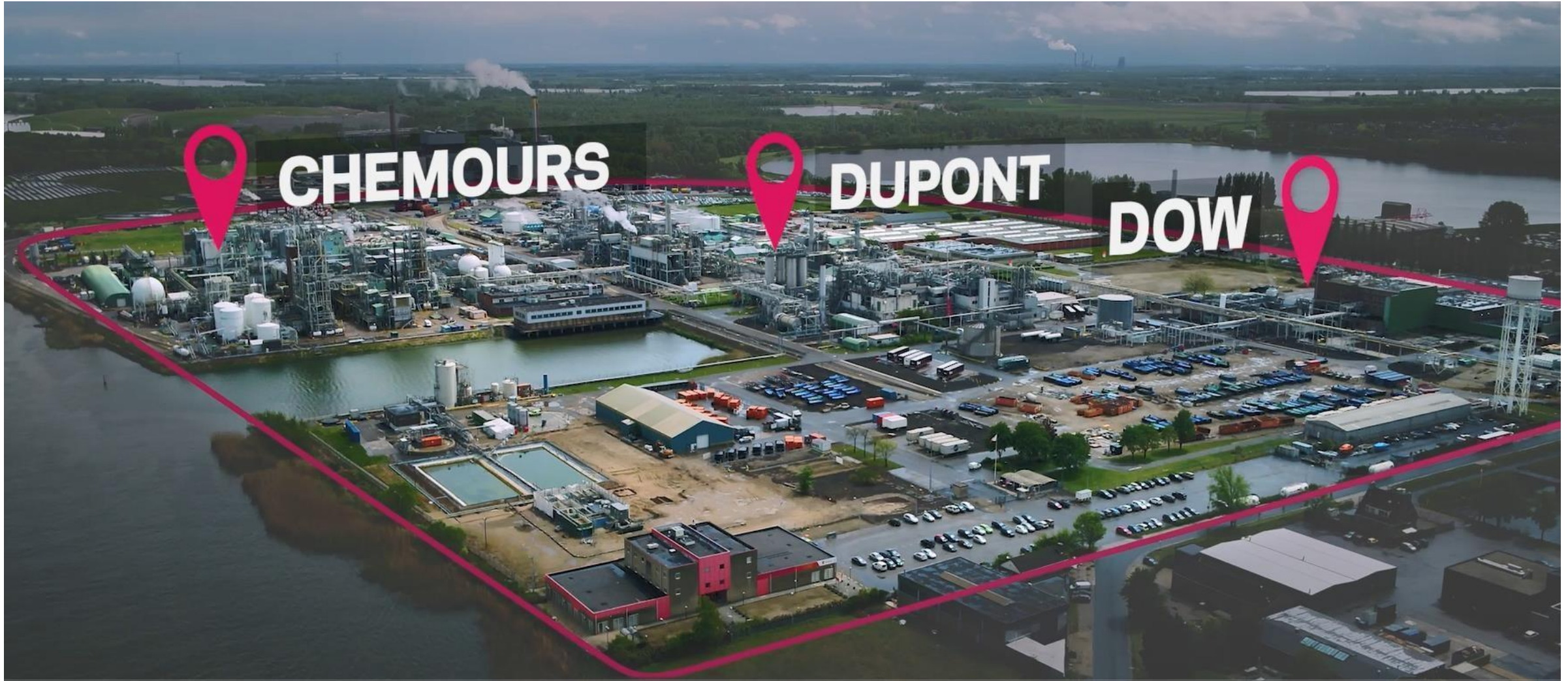
**Chemours' largest manufacturing
facility outside the US**

In operation

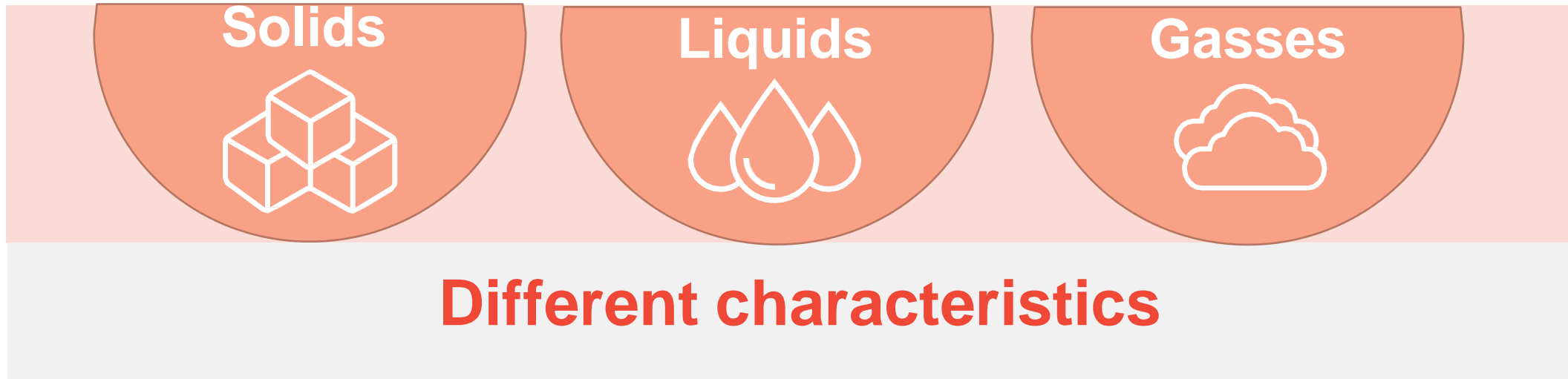
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Chemours is the property owner of the site, shared with DuPont en Dow



The definition of PFAS encompasses thousands of different substances



In Dordrecht we produceren FluorPolymers: Solids, known as Teflon™

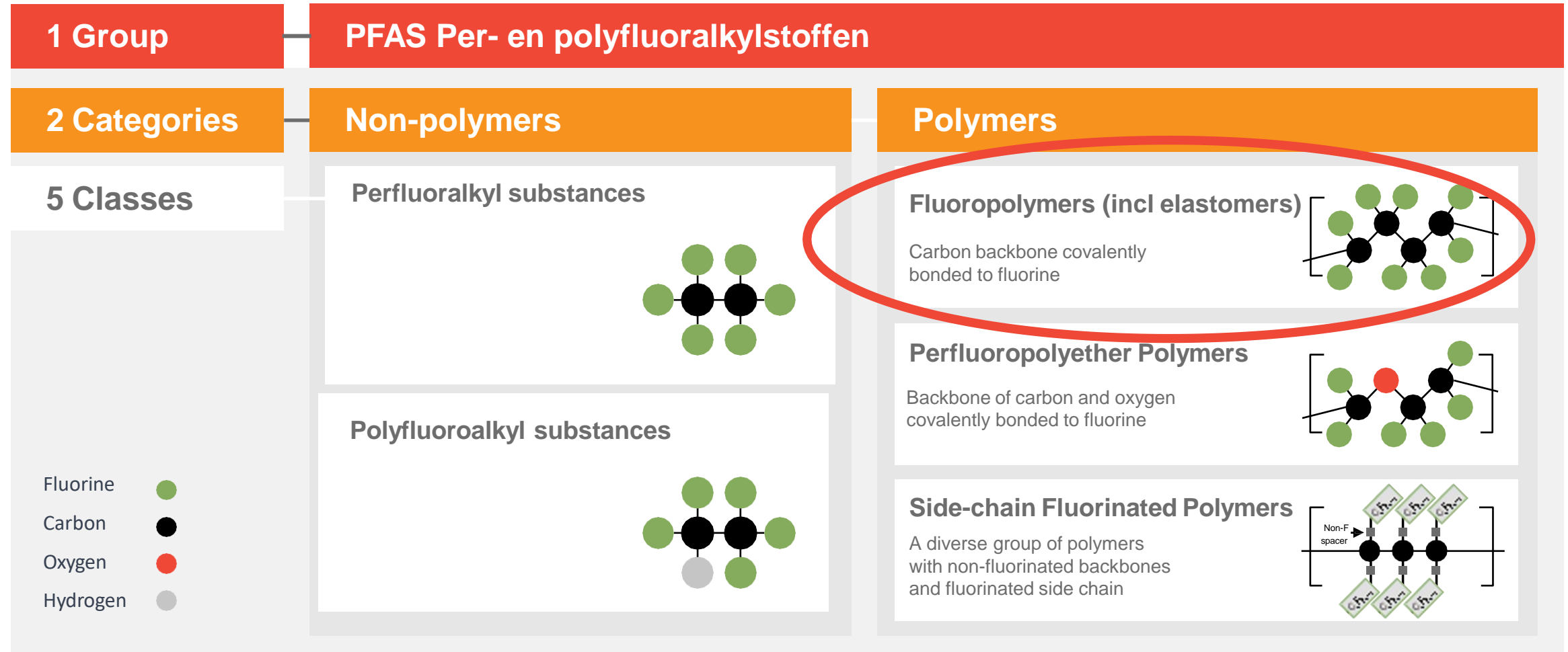
FluorPolymers in the environment

- Insoluble in water
- Not mobile (do not spread easily)
- Not absorbed by the body
- Non-toxic

Unique characteristics of FluorPolymers

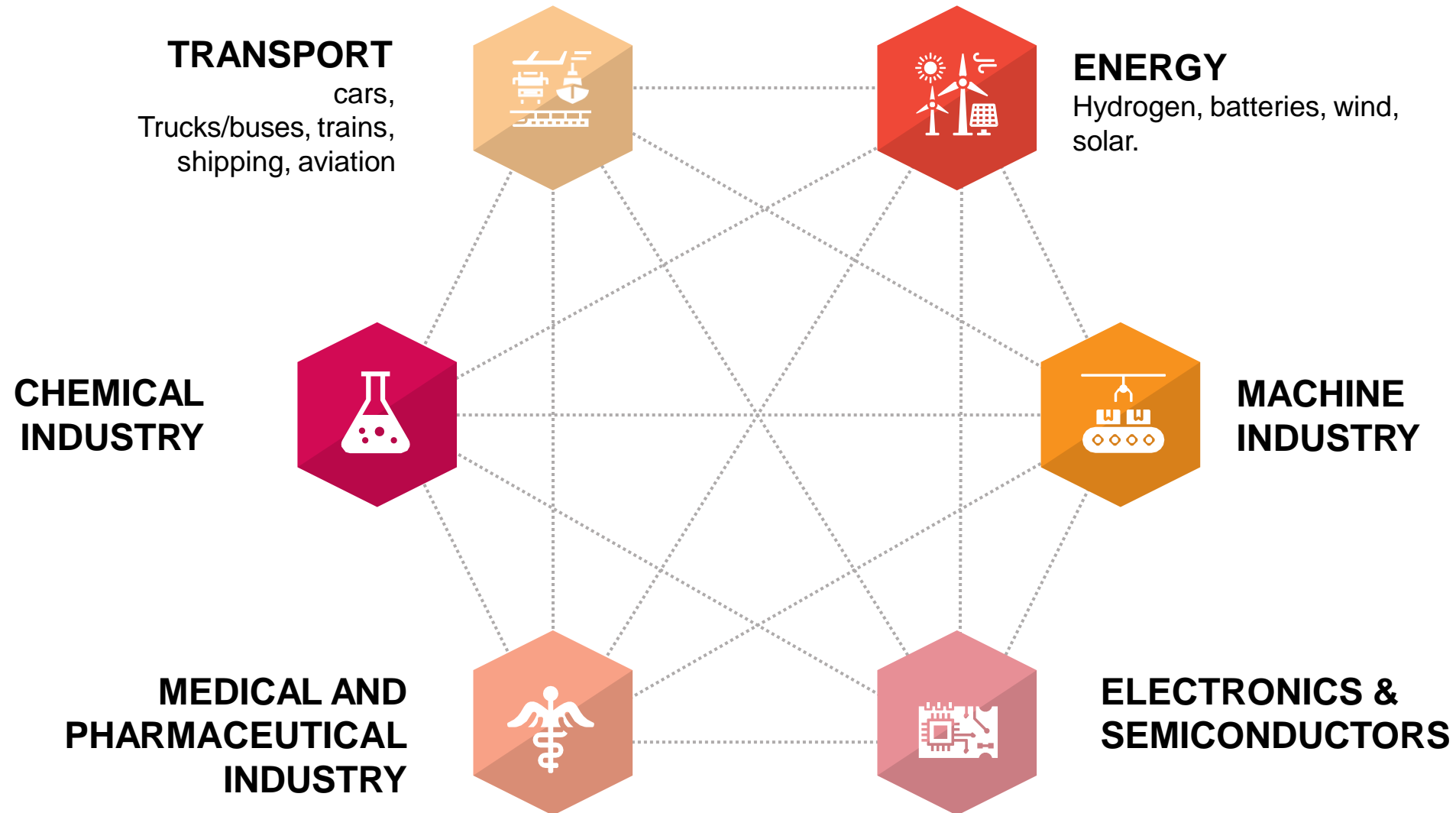
- High temperature resistance
- Chemical resistance
- Low friction
- Excellent electrical insulation
- UV (weather) resistance
- Non-flammable

Fluoropolymers meet the criteria for 'polymers of low concern' as defined by the OECD (Henry et al in 2018 and Korzeniowski et al. in 2022)



IEAM 2011, 7(4)5:13-541. <http://dx.doi.org/10.1002/ieam.258>

The fluoropolymers we produce are essential for many industries that are interdependent.



ELECTRICAL SYSTEMS, WIRES, CABLES AND SEMI CONDUCTORS.

PTFE, FEP, PFPE, PFA, FKM

- Semiconductor chips
- Lambda/O2 sensor conduit & grommet
- Electric mirror lubrication
- DC motor bearing lubrication
- Oxygen/NOx Sensor
- Heated seat wire
- Diesel pump wire
- ABS transmission brake sensor wire
- High tension ignition cable
- Battery terminal wire
- Convoluted wire harness conduit
- Cable tie wraps
- Xenon/bi-xenon headlight wire
- Throttle body injection wire
- ABS sensor cables
- Printed Circuit Boards

ENGINE & DRIVETRAIN

PTFE, FKM, PFPE

- Head cylinder & oil pan gasket
- Transmission & crankshaft seals
- Valve stem seals
- Bearing lubrication
- Flexible O-ring & piston skirt coating
- Front engine accessory drive Throttle body bearings & lubrication
- ETC lubrication
- Actuator assembly; valve belt tensioner
- Air intake manifold gaskets
- Turbocharger hoses
- EV binder for battery and seals

CHASSIS

PTFE, PFA, PFPE, FKM, HFCs, HFO

- ABS interconnected hose
- Hydraulic break lines
- Impulse hose at wheel
- Brake pad clips, shim and wear indicator
- Insulating foams and sound dampening
- Shock struts/absorber piston seals
- Dry Lubricant bearing door hinges
- Axle seals
- Adhesives
- NVH busing – lubrication
- Steering ball bushing incl. lubrication
- Steering ball joint insert and shaft steering splines
- Steering assist pump piston rings
- Cabin comfort and heating

TRANSMISSION & TRANSAXLES

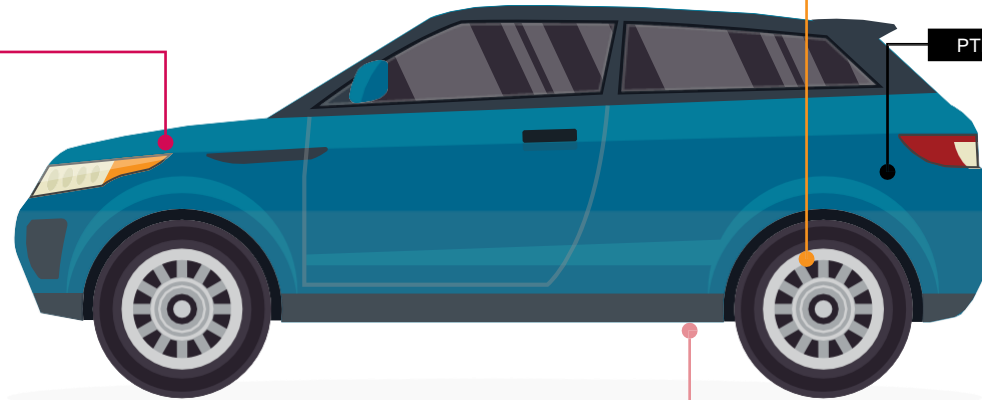
PTFE, FKM, PFPE

- Internal shift seal ring/clutch piston ring
- Clutch pilot and release bearings
- Clutch bearing lip seals
- Dual mass flywheel replacement
- Auto ORC de-coupler for alternators
- Driveshaft: CV joint lubrication

FUEL SYSTEMS

PTFE, FEP, ETFE, FKM

- Fuel line: feed return, vapor
- Fuel line quick connector seals
- Interconnect hoses
- Filler neck hose
- Fuel rail crossover
- FIORs
- Fuel sender seal
- Connector o-rings
- Diaphragm pressure regulator
- Anti-expulsion tank valve
- Pressure injection bushing
- EV battery cooling



Applications in electric vehicles

PFA, PTFE, FKM

LITHIUM-ION BATTERY

- Electrode binders
- Separators
- Cell gasket
- Coating for active material manufacturing equipment

PFPE, FKM

CHARGE BATTERY

- High voltage power cable
- Grease for charging port latches
- Grease for charging cable connector O-ring

PTFE, FEP, PFPE, FKM

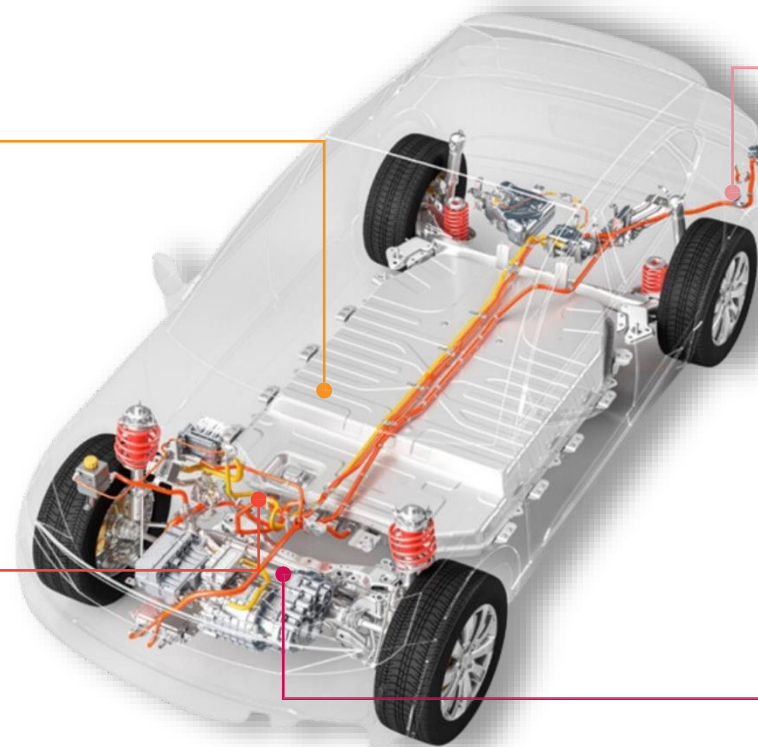
ELECTRICAL SYSTEMS, CABLES, WIRES, AND CONVERTERS

- High voltage power cable
- Busbar insulation
- Oil sensor seal
- Electric pump O-ring
- Coolant valve lubrication
- Ethernet cable

PTFE, FEP, FKM

ELECTRIC MOTOR & E-AXLE

- Bearing seal and O-ring
- Rotor shaft seal
- Temperature sensor cable
- Resolver cable
- Water jacket seal



Applications in semiconductor manufacturing

PFA, PTFE, FKM, FFKM, AF, PFPE, HFCs, HFOs

SEMICONDUCTOR TOOLS

- Valves, Fittings, Tubings
- Pumps, Filters
- Lubricants
- Valve seats
- Valve sealing
- Vacuum pump oil
- Etchant gas
- Pellicle mask
- Flow measurement
- Thermal management
- Heat transfer fluids

PFA, PTFE, FEP, PVDF, FKM, FFKM, HFOs

CHEMICAL DISTRIBUTION SYSTEM

- Valves
- Fittings
- Heat exchanger/insulation
- Flow measurement
- Tubing chemicals primary
- Tubing chemicals secondary containment
- Water system tubing
- Pumps
- Filters
- Seals
- Electronic cleaners

FEP, ETFE, HFCs, HFOs

INFRASTRUCTURE

- Duct coating
- Air conditioning
- Humidity control
- Fire protection

PFA, FKM

WAFER TRANSPORT

- Wafer carrier
- FOUP sealing

PTFE, PFA

CHEMICAL PACKAGING

- Container lining
- Drums
- Tanks lining



Applications in Medical

Medical devices and applications

- Surgically implantable medical devices such as vascular grafts
- Surgical mesh
- Heart patches
- Catheters
- Carrier fluid for the deposition of lubricants on medical devices and catheters
- Dielectric insulators in defibrillators, pacemakers
- Diaphragm pumps
- Membranes for filtering and venting purposes
- Sterile container filters, needle retrieval systems, Tracheostomy, catheter guide wire for laparoscopy, valves, fittings, pumps, tubing and medicine inhaler canister coatings
- Labware
- Medicine Packaging
- Items that need sterilization
- Metered Dose Inhalers

PTFE, FEP, PFA, ETFE, HFCs

Infrastructure

HFOs, HFCs

- Transport and stationary refrigeration systems
- AC, heat pump, & humidity control for:
 - Patient rooms
 - Special areas (OR, ICU, etc.)
- Thermal management for labs and equipment
- Refrigeration and insulation for Food Services and distribution of vaccines and pharmaceuticals
- Cleaning of supplemental oxygen systems for breathing air
- Foam insulation for cryogenic tanks
- Thermodynamic sanitary hot water tanks
- Fire protection



PTFE, FEP, PFA, FKM, PFPE, HFOs

Medical imaging & analysis

- Semiconductor chips
- O-rings, gaskets, seals
- Coating for wire & cable
- Tapes, wires, and cables
- Bearings and assemblies
- Degreasing

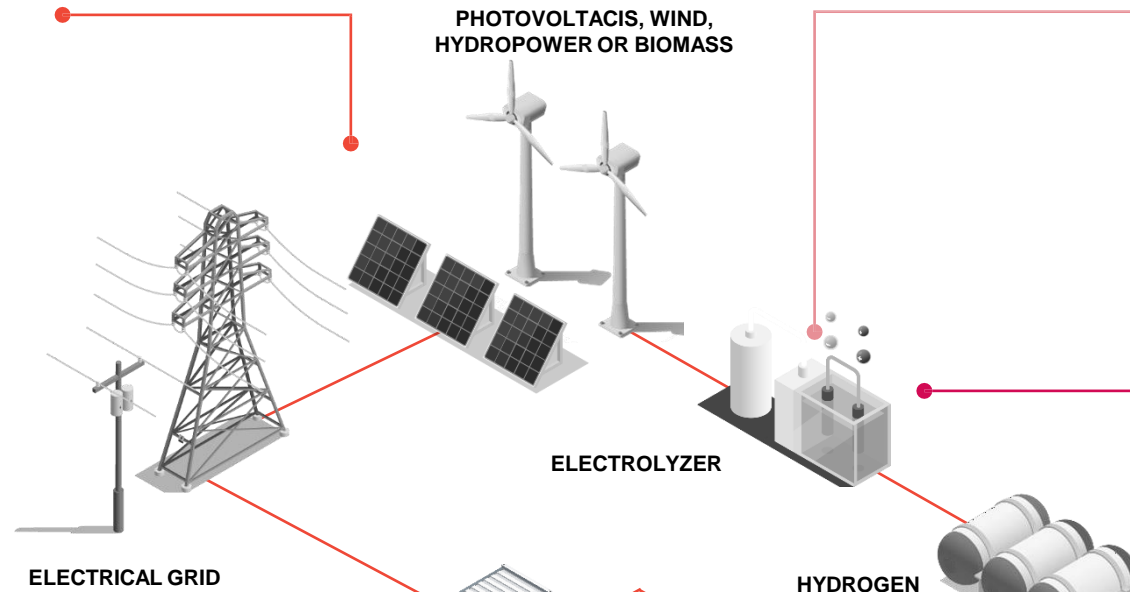


Applications in clean energy

Renewable Energy Production

PTFE, FEP, ETFE, PFSA, FKM, PFPE

- Photovoltaic front sheets protection
- Photovoltaic back sheets insulation
- Junction boxes in photovoltaic vents
- Control centers for offshore wind parks
- Wind turbine paints and coatings
- Release film: support production of composite turbine blades esp. for offshore turbine PTFE bearings



Energy storage

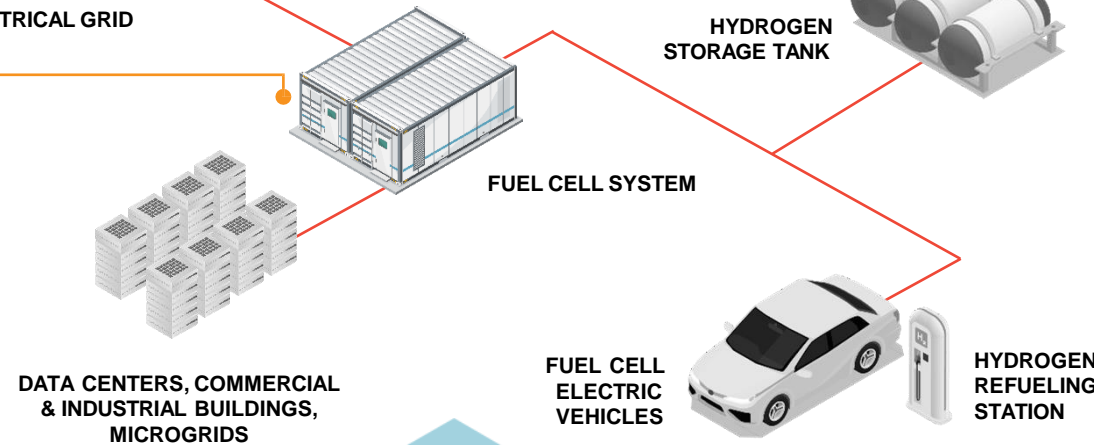
PFSA, FKM, PTFE

- Ionomer exchange membranes for flow batteries
- Gaskets and seals to prevent leaks and environmental releases to reduce carbon dioxide emissions into the atmosphere
- Binder materials in the electrodes

Stationary and Mobile Fuel Cells

PFSA, FKM, PTFE

- Ionomer exchange membranes for PEM fuel cells
- Gaskets and seals to prevent leaks and environmental releases to reduce carbon dioxide emissions into the atmosphere
- Binder materials in the electrodes
- Component of the gas diffusion layers (GDLs)



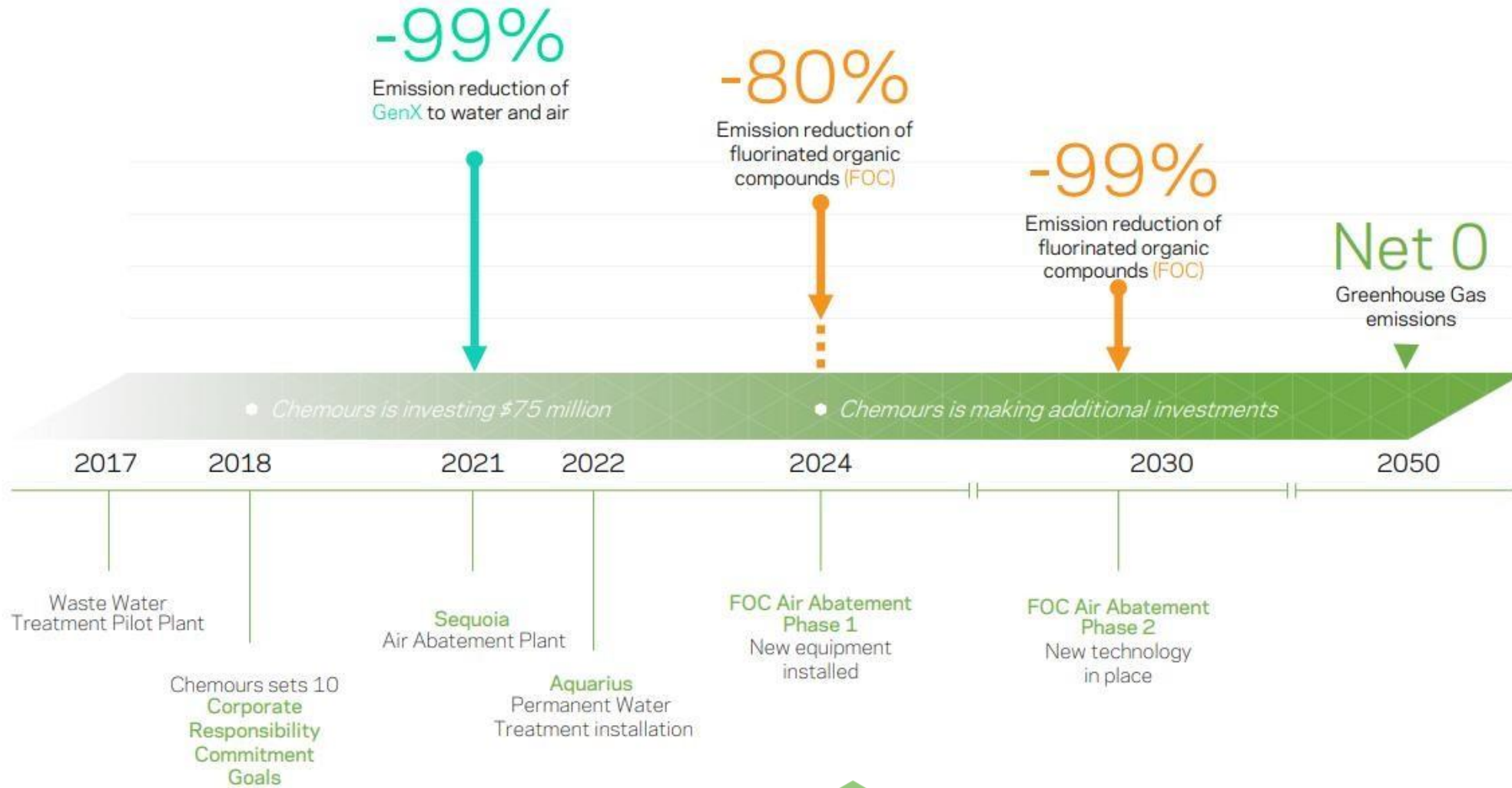
Hydrogen production

PFSA, FKM, PTFE

- Ionomer exchange membranes for PEM water electrolyzers
- Tubing fluid transfer in alkaline water electrolysis hydrogen production systems
- Binder materials in the electrodes
- Gaskets and seals to prevent leaks and environmental releases to reduce carbon dioxide emissions into the atmosphere



Our emission reduction progress



Permanent installation for purification of wastewater

CRC Programme - Aquarius

Started

Technology development since 2017

Pilot plant operational in 2020

Construction started in July 2021; in operation at the end of 2022

Technology

Combination of purification techniques, including activated carbon filtration. Purifies an average of 60,000 liters per hour

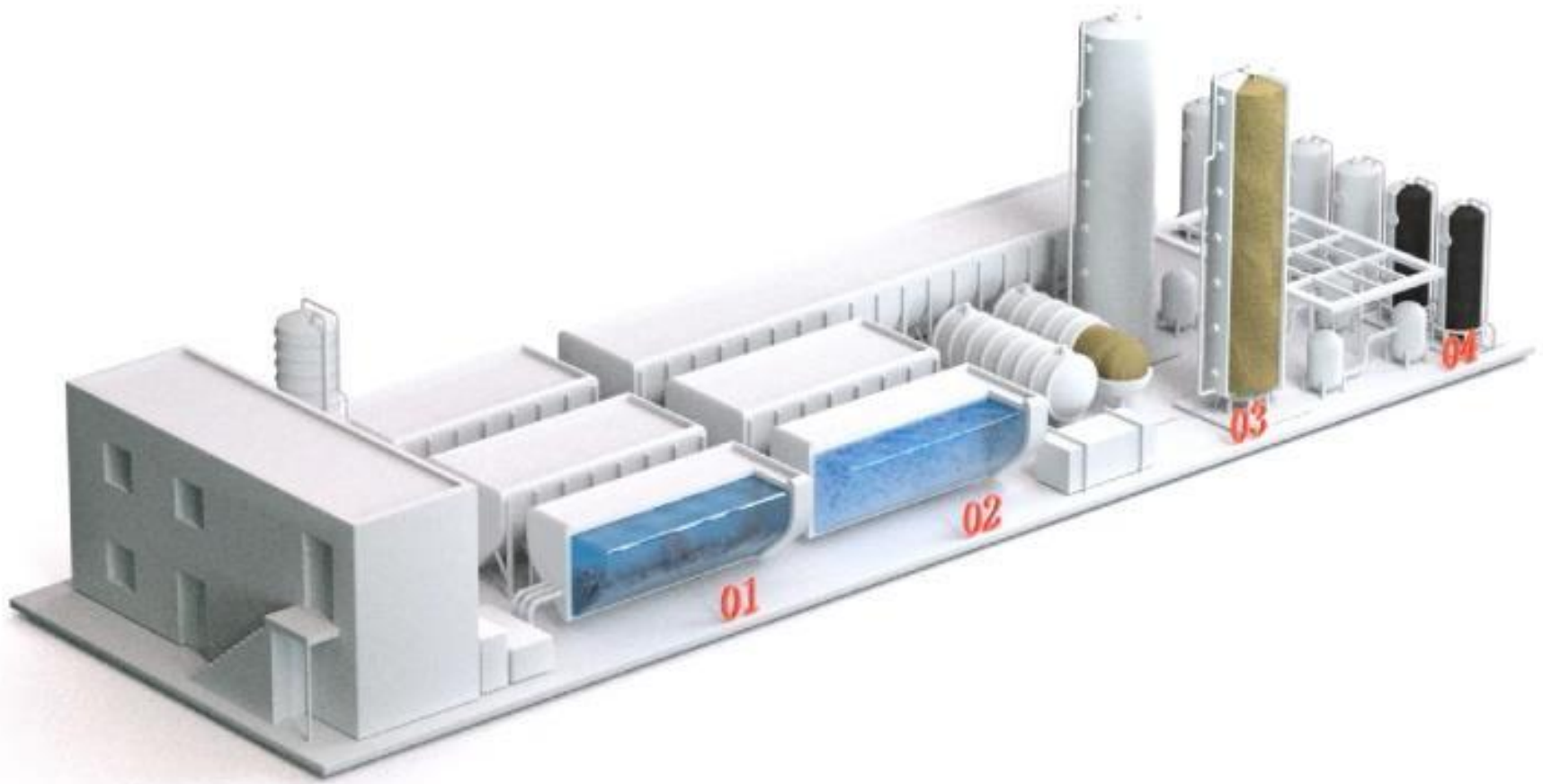
Result

Reduction of HFPO-DA substances by more than 99.9%

In operation

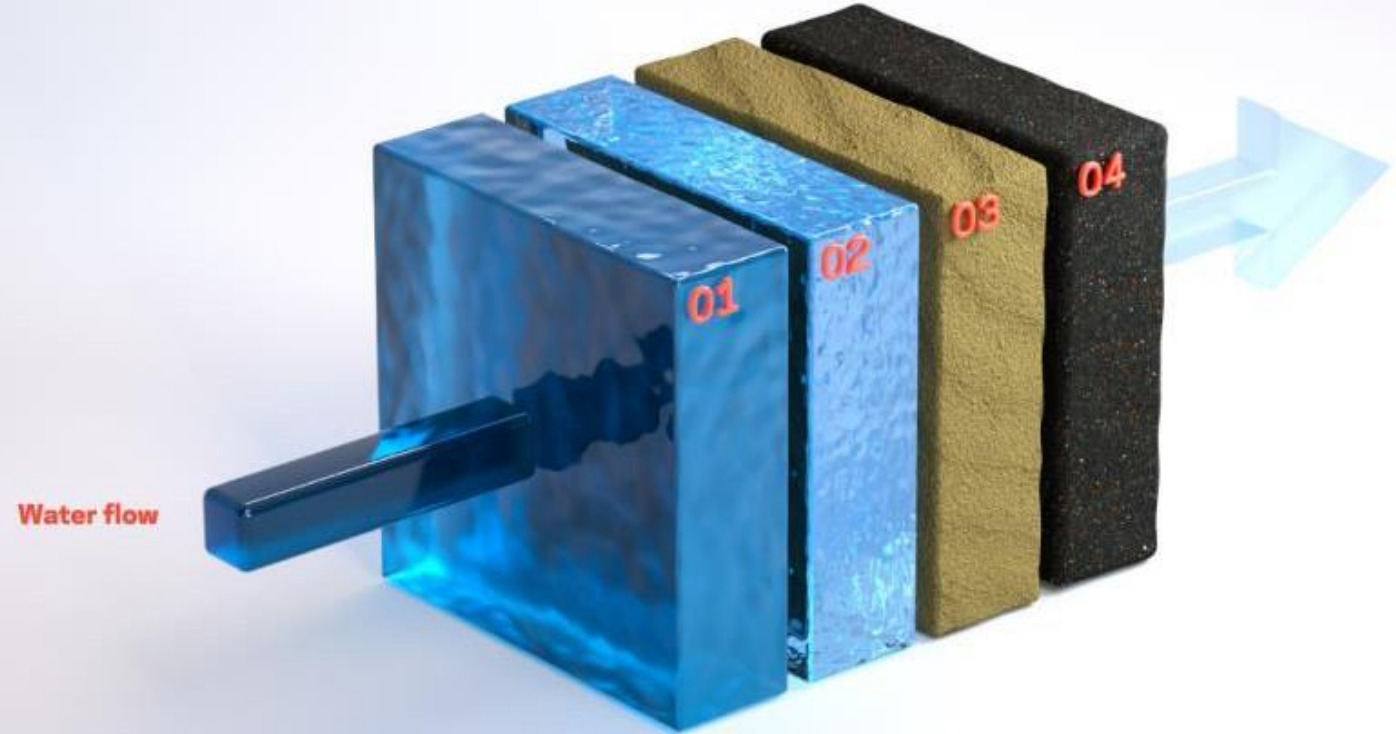
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We take water seriously

Our 4-step filtration process aims to reduce PFAS emissions to water by 99.9%



Step 01

Wastewater is collected in three **Settling Tanks**. Here the largest solid parts are given time to settle or float, for easier removal.

Step 02

The water is pumped through the **Dissolved Air Flotation** system, where the wastewater is mixed with a clumping agent and an air/water mixture, causing the smaller particles to sink or float, which are then removed.

Step 03

The cleaner water is pumped through **Sand and Bag Filters** to remove the last remnants of the solid parts.

Step 04

Carbon Beds remove the dissolved PFAS through absorption, and the filtered water is discharged into the municipal sewer.



AIRFRAME

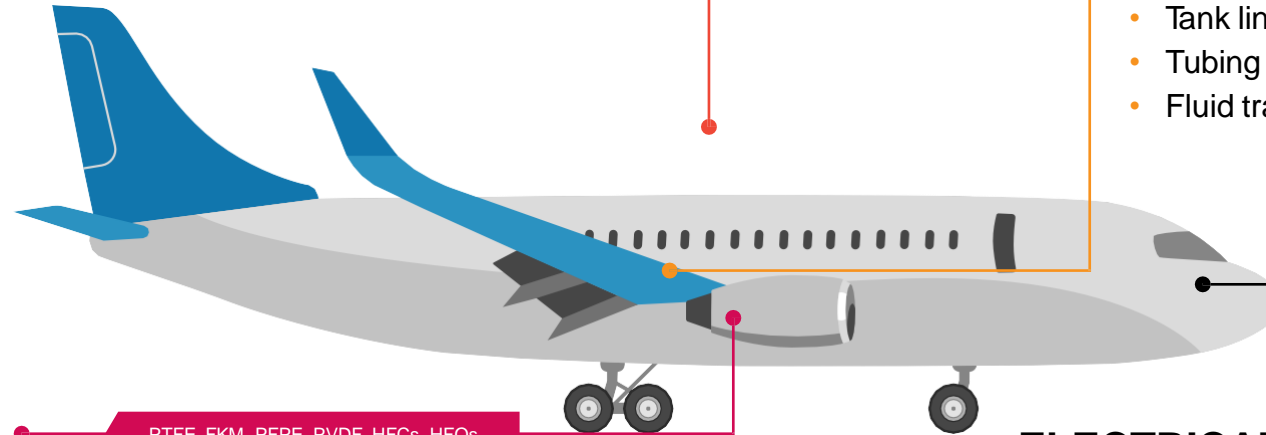
PTFE, ETFE, FEP, FKM, HFCs, HFOs

- Exterior surface coatings
- Toilet area galleys
- Overhead lockers
- Satellite dishes
- Aircraft wings covers
- Heat shrinkable protective covers
- Air bearings
- Electronic device trays
- Control surfaces
- Integral skin foams
- Paint Replacement Film
- 3D printed and molded parts for repair
- Packaging
- Sleeve items that require light transmission
- Fasteners
- Fire prevention systems

PTFE, ETFE, FEP, FKM, HFCs, HFOs

FUEL SYSTEMS

- Fuel lines and hoses
- Hydraulic systems
- Coating for wire & cable
- Tapes, wires, and cables
- Containment bags, bladders, and tanks
- Tank fuel seals and insulations
- Tank liners
- Tubing liners
- Fluid transfer devices



ENGINE & SYSTEMS

PTFE, FKM, PFPE, PVDF, HFCs, HFOs

- O-rings, gaskets, seals
- Satellite propulsion systems
- Throttle box seals
- Arming components
- Engine and exhaust components
- Battery binders
- Battery separators
- Gears, and slides
- Oxygen systems (propulsion, SCBA)
- Degreasing components and landing gear
- Cabin comfort

PTFE, FEP, ETFE, FKM, HFCs, HFOs

ELECTRICAL/ ELECTRONIC SYSTEMS

- Tapes, wires, and cables
- Printed circuit boards
- Coating for wire & cable
- Electrical connectors, insulators
- Flight control systems
- Sensors
- O-rings, gaskets, seals
- Air bearings
- Electric harness parts
- Gears, and slides



Applications for Fluoropolymers & F-gases in Defense

Machinery

PFPE, PTFE, FEP, PFA, ETFE, HFCs, HFOs

- See trucks and planes
- Battery binders
- Pneumatic cylinders
- Aircraft fuel pump systems
- Hydraulic systems
- Fuel tank insulations
- Integral skin foam seating to increase protection
- Degreasing of engine components and landing gear
- Carrier fluid and lubricant deposition
- Lubricants

PTFE, HFCs, HFOs

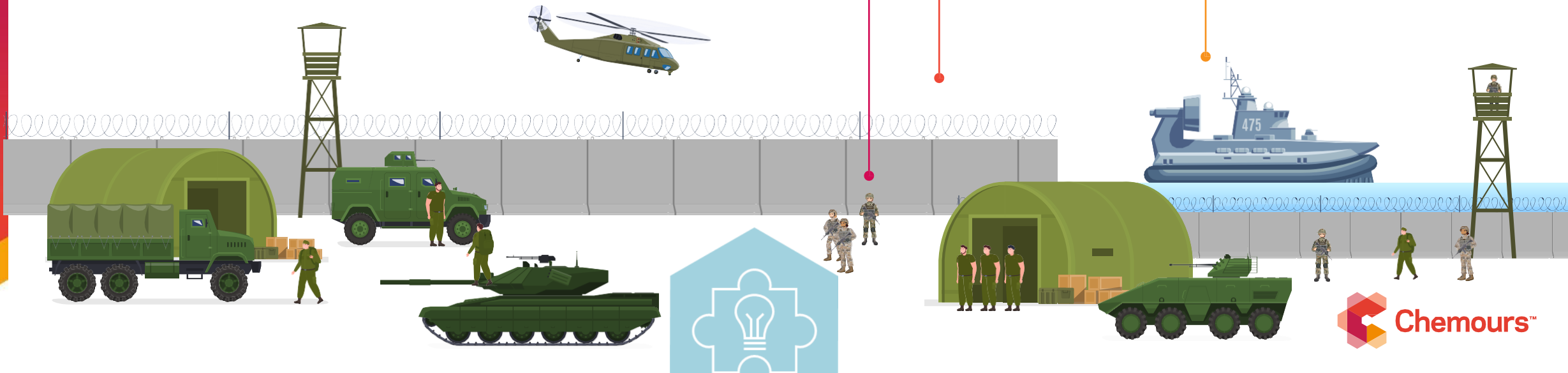
Soldier

- Protective garment
- Fireproof batteries

PTFE, PFA, ETFE, FEP, HFCs, HFOs

IT & Electronics

- All communication devices, transportation and command centers
 - High Frequency Circuit boards
 - Radar Radome
 - Data Cabling
 - High performing batteries



Permanent installation for chimney emission purification

CRC Programme – Sequoia

Started

Technological development since 2018

Operational in 2021

Engineering

Emissions from production processes redirected to active carbon filtration.

Result

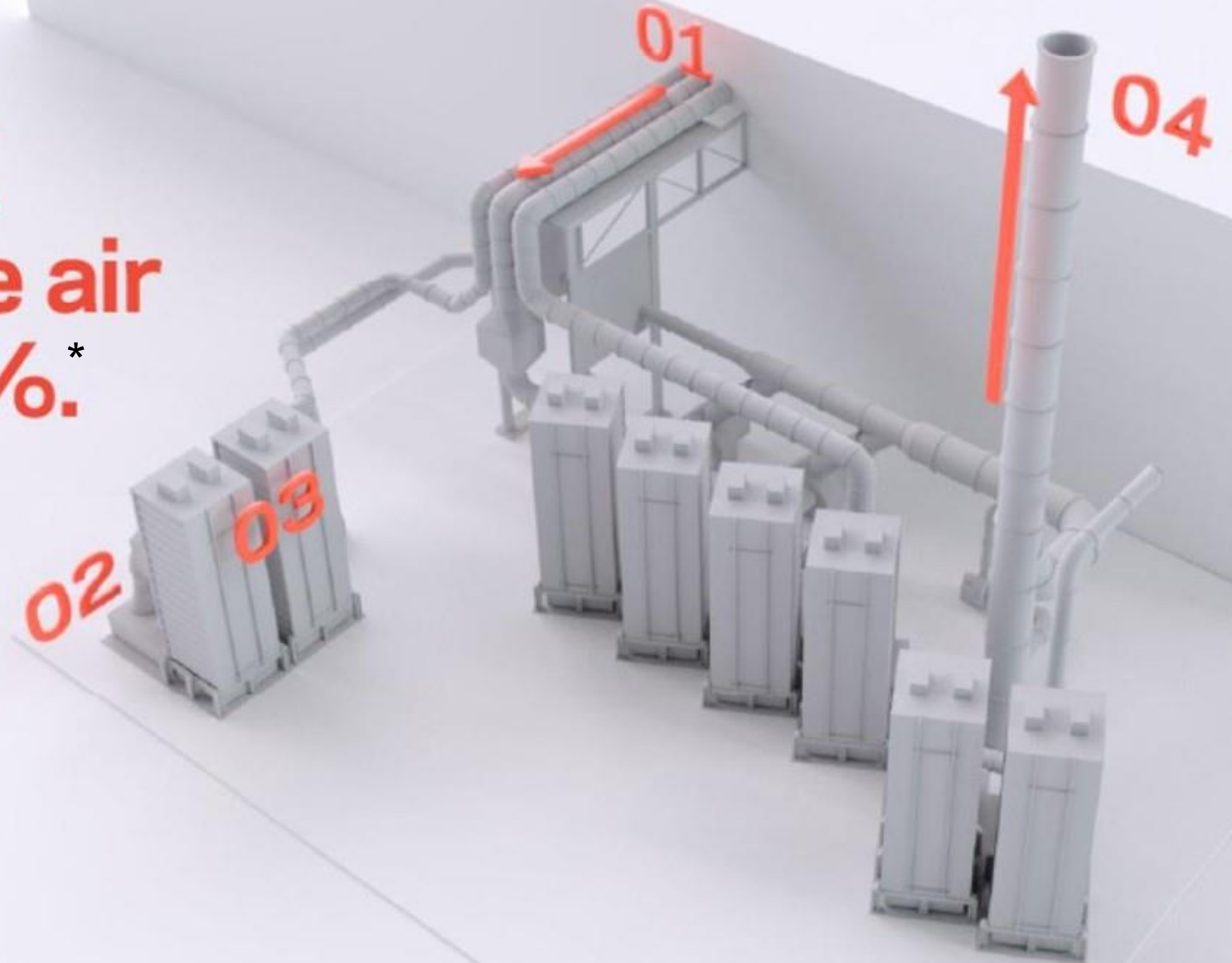
Reduction of HFPO-DA substance emissions by more than 99%

In Operation

24/7



Reducing the emission of GenX substances to the air by more than 99%.*



- 01** Air streams are captured and routed to the filtration system
- 02** Air is pushed through carbon beds
- 03** GenX sticks to the carbon
- 04** Filtered air is blown out, with air emissions of GenX reduced by 99%

* Gen-X chemicals

Reduction program for reducing FOC emissions into the air.

CRC Programme – Fluorinated Organic Compounds (FOC)

Started

Phase 1 (80% reduction) - technology development since 2020

Phase 1: Planned to be operational by the end of 2023

Phase 2: Technology development ongoing; plan to test feasibility through pilot plant design.

Engineering

Phase 1: Improving TC reliability and buffering process gas during an upset

Phase 2: In development

Result

An 80% reduction in 2024 and further reduction to 99% as soon as possible thereafter.

In operation

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