porvair
filtration group

Nuclear Filtration Services

Waste packaging & storage

Fusion

Decommissioning & decontamination

Submarines

Power generation

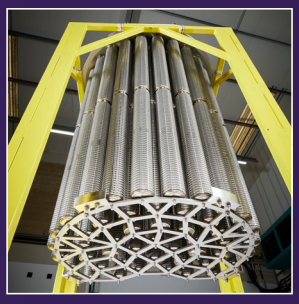
Medical isotopes

Filtered containment venting systems

Fuel production









World Class Filtration Solutions

www.porvairfiltration.com

Porvair Filtration Group in the Nuclear Industry

Porvair Filtration Group is an international leader in the development and supply of materials and products for applications in filtration and separation.

Porvair manufactures in the UK, Europe, USA and India and has an extensive network of sales offices and distribution channels throughout the world. Our expertise is wide and varied, with products used in markets such as:

- Aerospace and Defence
- Food and Beverage
- Gasification
- Microelectronics
- Nuclear
- Original Equipment Manufacturers
- Pharmaceutical
- Polymer Melt
- Printing
- Process

Our ongoing success is based on a dedication to technical excellence and superior customer service. Our future will be built on our investment in research and development to provide innovative new products that exceed the expectations of our customers in solving the challenges they face.



Nuclear

Porvair offers both engineering and quality framework to meet the challenges of the nuclear industry. We produce solutions to ensure the efficiency and safety of critical processes, using a range of technologies, products and techniques. Our experience includes:

- filtration of both gaseous and liquid streams
- disposable and cleanable filtration
- both civil and military nuclear applications
- filtered containment venting systems (FCVS)
- high temperature off gas clean-up
- HEPA protection and pre-filtration
- pulsed jet self-cleaning HEPA filtration
- metallic HEPA filtration for extreme conditions
- metallic filter septa and resin traps for filter condensate polishers
- powder/product collection vent filtration
- waste package filter vent/breathers
- active effluent treatment packages
- coalescers (liquid/liquid and liquid/gas)
- cooling loop, fuel pool, and other power generation filter applications
- designed-for-purpose filtration and separation packages for the most demanding of applications.



Porvair Filtration Group has over 50 years' experience in the supply of high quality filtration solutions. Working across the field, designing and supplying filtration and other equipment, we offer solutions to the following sectors:

- power generation (NPP, SMR, AMR)
- fuel manufacture and medical isotopes
- waste management
- waste packaging and storage
- decommissioning and decontamination
- fusion
- defence

Custom Designed Solutions

As an engineering company, we are able to take an application from an initial discussion to a fully optimised solution; meeting material, code and technical requirements and providing a complete solution to a specific problem.

Porvair has the capability to provide a variety of filters, from a single, specialised OEM retrofit filter element to a complete, packaged system to meet the precise needs of a complex application. In addition to our experienced engineering quality control programmes, we can also offer the service of our laboratories, development and testing facilities, as well as aftermarket support.

Porvair offers a wide selection of filter media based on the needs of the individual application. Available in a range of non-metallic and metallic filter media, such as glass fibre and various polymers, stainless steel and exotics materials.

Porvair can meet most requirements at virtually any scale and footprint to address the unique challenges of the nuclear industry.

Relying on decades of experience in nuclear filtration, our engineers can meet the most rigorous of nuclear specifications.



Duplex Filtration System



Sinterflo® Metal Filters

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Nuclear Power Generation

Porvair Filtration Group is proud to partner with both existing and future nuclear power generation facilities. By tailoring our filtration technologies to the distinct needs of each application, we consistently deliver solutions that meet the highest global standards for safety, quality, and performance.

We are exploring the best technical and economic solutions to maintain plant safety and equipment reliability on separation issues as varied as:

- coolant loop filtration
- containment venting and relief valve protection
- spent fuel pond (fuel pool) water clean up
- Caesium removal
- AGR CO_2 coolant line and vent clean up, including safety relief valve protection (SRV), pre and post dryer and bypass blowdown units
- HTGR He coolant cleanup
- innovative fuel cleaning processes
- package venting for spent fuel disposal
- general power generation asset protection



Sinterflo® Septa



Filter Tubesheet

Filtered Containment Venting Systems (FCVS)

Porvair's nuclear division is fully equipped to support Filtered Containment Venting Systems (FCVSs) through its specialised expertise in high integrity filtration designed for severe nuclear incident conditions.

We supply metallic and HEPA grade filtration technologies that ensure vented gases meet stringent safety and environmental requirements.

Our capability to deliver bespoke solutions, from retrofit filter elements to fully engineered and packaged systems, allows FCVS designs to be tailored to the specific needs of different reactor types and regulatory frameworks. This is supported by comprehensive in house laboratory testing and advanced engineering development facilities.

Porvair operates purpose-built design, manufacturing, and testing facilities in both the UK and the USA dedicated to our nuclear product range.

Sinterflo® Septa Back-Flushable Filters

Porvair manufactures 316L stainless steel sintered wire mesh laminate filter Septa as well as full scale and complete backwash systems. We supply standard 1" and 2" diameter Septa, as well as custom diameters up to any length. These tubular filter elements are typically supplied in tube bundle assemblies for retrofit into existing pressure vessels.

Sinterflo® Septa provides a base structure for the uniform precoating of ion exchange resins as well as absolute filtration when used as a resin pre or post filter. Due to the high void volume throughout the filtration area, Septa is often used in high-energy air or liquid surge backwash systems.

Typical applications in nuclear Boiling Water Reactors (BWR), and Pressurised Water Reactors (PWR) would include:

- condensate polishing
- reactor water clean-up
- fuel pool / vacuums
- radwaste processing.

Sinterflo® Septa is designed to be a direct replacement for existing tubesheet configurations. **Porvair** also designs complete condensate systems to reduce particle transport, protecting steam generators, resin beds and other downstream equipment. Our back-flushable systems can be used with or without ion exchange precoat.

SMRs and AMRs

Porvair's nuclear division is strongly positioned to support the development and operation of Small Modular Reactors (SMRs) and Advanced Modular Reactors (AMRs), with filtration technologies and engineering capabilities that directly address the environmental, safety, and process control challenges common to both traditional and next generation reactor designs.

We provide HEPA and pre filtration systems, metallic HEPA filters engineered for extreme operating conditions, and fully customised filtration and separation packages.

We also provide filtration solutions for cooling water, underwater vacuums, rotating equipment and general liquid separations.

These solutions are essential for maintaining the integrity of compact modular reactor architectures, where space efficiency, reliability and long-term maintainability are critical.

Our capability to engineer bespoke solutions from individual retrofit elements to fully packaged filtration systems, aligns naturally with the modular construction philosophy underpinning SMR and AMR designs. This allows us to tailor filtration architectures to specific reactor types, containment strategies, and balance of plant configurations.

Supported by extensive laboratory, testing, and materials development facilities, **Porvair** leverages advanced metallic and polymeric media technologies to meet the unique chemical, thermal, and radiological demands of emerging SMR concepts. This strengthens our role as a trusted engineering partner within the SMR supply chain.

Porvair's engineered solutions are suitable for all major reactor classes, including Small Modular Light Water Reactors (SMR LWRs), High Temperature Gas Cooled Reactors (HTGRs), Molten Salt Reactors (MSRs), and Liquid Metal/Fast Neutron Reactors (LFRs/SFRs).

Porvair operates purpose-built design, manufacturing, and testing facilities in both the UK and the USA dedicated to our nuclear product range.



Filter Tubesheet



Duplex Filter System



Sinterflo® Filter Elements

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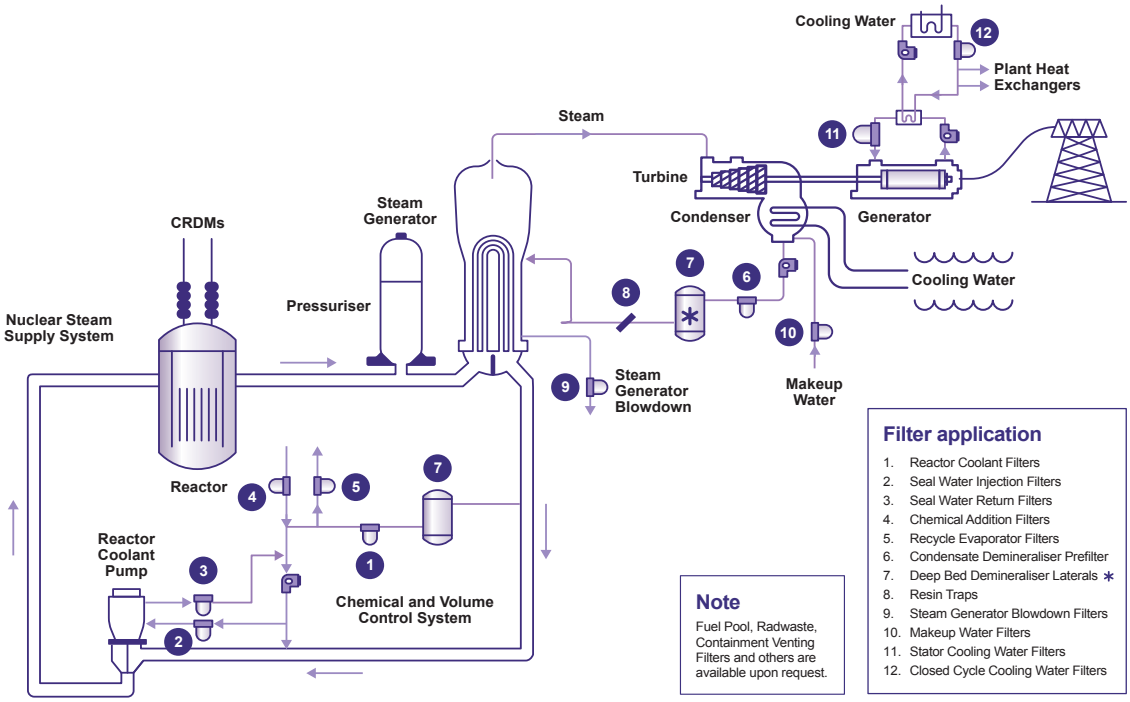
Filtration Units for Pressurized Water Reactors



Filter application

1. Reactor Coolant Filters
2. Seal Water Injection Filters
3. Seal Water Return Filters
4. Chemical Addition Filters
5. Recycle Evaporator Filters
6. Condensate Demineraliser Prefilter
7. Deep Bed Demineraliser Laterals *
8. Resin Traps
9. Steam Generator Blowdown Filters
10. Makeup Water Filters
11. Stator Cooling Water Filters
12. Closed Cycle Cooling Water Filters

Note

Fuel Pool, Radwaste, Containment Venting Filters and others are available upon request.

Porvair Filtration Group delivers advanced filtration solutions designed specifically for pressurised water reactors (PWRs). From the heart of the primary loop to the supporting systems of the secondary loop, our filters safeguard the purity of reactor coolant, protect critical components, and help maintain the stable, efficient operation of the nuclear steam supply system.

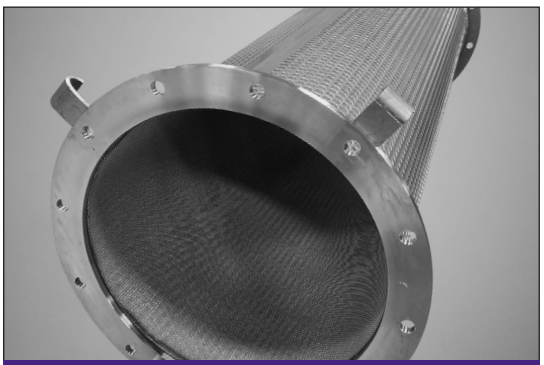
The filtration points illustrated - such as reactor coolant, seal water, chemical addition, and volume-control system filters - highlight the essential role our technologies play in supporting reactor performance and long-term reliability.

Across the secondary loop, Porvair's filtration systems ensure clean, well-conditioned water and steam for safe and dependable plant operations. Solutions for steam generator blowdown, makeup water treatment, condensate demineralisation, resin management, and downstream polishing provide plant operators with confidence in system integrity and efficiency.

By engineering robust, high-quality filters for every critical stage of the PWR cycle, **Porvair Filtration Group** supports the nuclear industry with filtration expertise that enhances performance, safeguards equipment, and contributes to the safe operation of civil nuclear power stations.

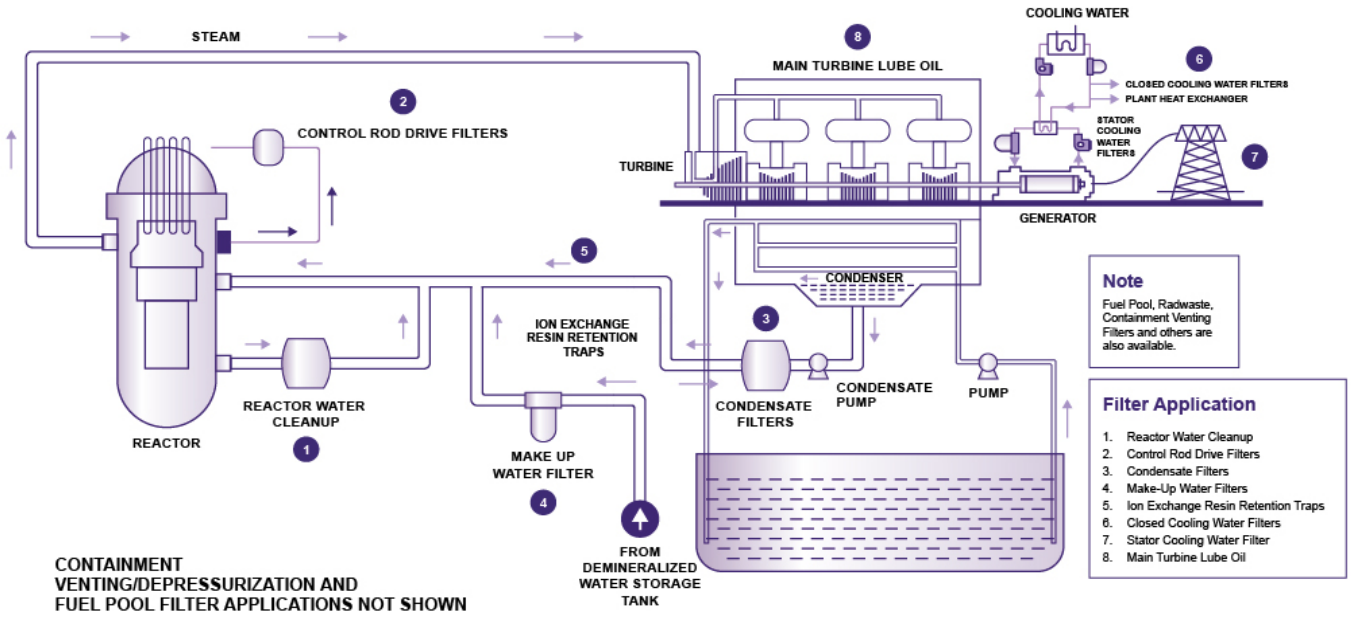


NuKey™ Disposable Filter



Sintered Mesh Laminate Filter Element

Typical Boiling Water Reactor Filter Applicatons



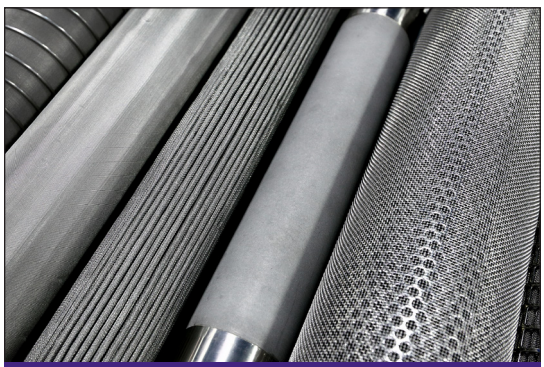
Porvair Filtration Group designs and manufactures specialised filtration systems that support the demanding operating conditions of nuclear boiling water reactors (BWRs).

Drawing on decades of engineering expertise, Porvair provides highly engineered filter elements and housings that maintain the purity and reliability of critical fluid streams throughout the reactor system. These filters play essential roles in controlling contamination transport, protecting critical reactor components while achieving ALARA (as low as reasonably achievable) goals under both normal and transient operating conditions.

The diagram highlights the breadth of filtration applications used in nuclear reactor systems.

From reactor coolant filtration and chemical addition filters to condensate demineraliser prefilters, resin traps, and closed-cycle cooling water filters, Porvair's technologies are designed to manage particulates, corrosion products, and radioactive contaminants with precision and consistency.

These solutions enable safe, efficient, and compliant operation, supporting the rigorous standards expected across the nuclear industry worldwide.



Sinterflo® Filter Elements



Vent Filters

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Fuel Manufacture and Medical Isotopes

Porvair Filtration Group is actively involved throughout the fuel production process, including traditional and advanced fuels, spent fuel reprocessing, the production of uranium and plutonium oxides as well as for the treatment of off-gases.

Our innovative products are also used in:

- the venting of fluidised bed processes
- powder transport and collection
- glove box venting
- sintering furnace off-gas purification.

Our engineers offer innovative solutions where reliability, efficiency and quality are paramount.

Porvair Filtration Group can supply single disposable, filter elements as well as complete self cleaning systems of any scale. To limit worker exposure, our filters are specifically designed to be easily removed for cleaning or replacement. Our filter systems include a range of polymeric, glass fibre and metallic filter media including 316L stainless steel, high nickel alloys, Monel®, Inconel® and FeCrAlloy and more.

For every stage of the nuclear fuel production process, we have engineered solutions for some of the most difficult separations.

Medical Isotopes

Filtration and purification of medical isotopes are essential steps in producing safe and effective radiopharmaceuticals for diagnostic imaging and therapeutic applications.

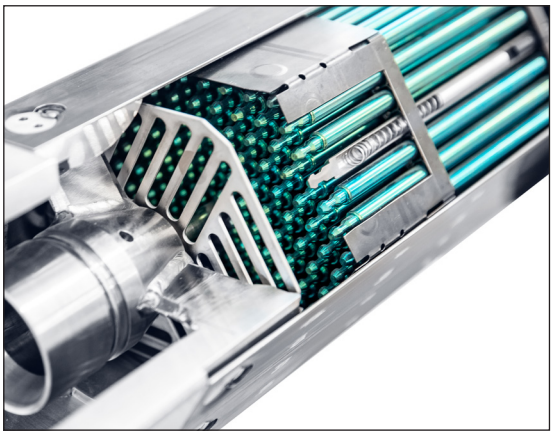
After isotopes are generated - often through nuclear reactors or particle accelerators - they must be separated from impurities, target materials, and by-products that could interfere with medical use.

This purification typically involves high-level, controlled techniques such as chemical separation, ion-exchange processes, and sterile filtration to remove contaminants without altering the isotope's desired properties. These steps ensure that the final product meets strict purity, stability, and safety standards before it is administered to patients.

Porvair has designed and manufactured bespoke filtration system to contribute of the Filtration and purification of medical isotopes.

Two Stage Extraction System For Fuel Pellet Grinding

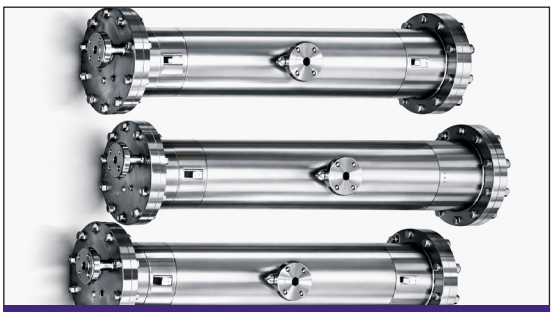
We design and manufacture two-stage extraction and HEPA-grade filtration systems tailored for fuel-pellet grinding for nuclear fuel production facilities.



Cross Flow Filtration Systems

Our advanced crossflow filtration solutions are engineered to support efficient and reliable fuel production operations, ensuring optimal separation performance and long-term system durability.

High-efficiency powder recovery filters designed for use in modern fuel manufacturing environments, delivering clean processing, reduced material loss, and consistent product quality.



Cross Flow Filtration System



Two Stage Extraction System

Pulsed Jet Self Cleaning Systems

Pulsed jet cleaning is a process developed by **Porvair Filtration Group** for the effective removal of collected solids from the surface of a filter element.

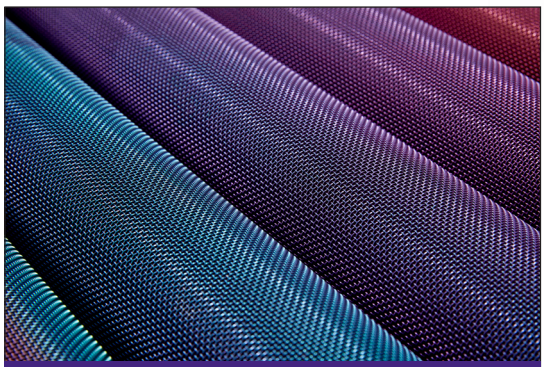
Our Pulsed Jet self-cleaning gas filtration systems are used across the industry in the UK, USA and Europe, in both uranium oxide and plutonium/uranium oxide (MOX) fuel processes, including:

- Pre and post enrichment, including fluorination and defluorination
- Uranium oxide powder recovery
- Plutonium oxide powder recovery
- Pellet finishing grinding dust removal and recovery
- Process glove box venting
- High temperature fuel process, including hydrogen fluoride (HF) service
- Sintering furnace off-gas
- Plutonium and uranium powder storage vents
- Spent fuel dry store processing and vent filters
- Uranyl nitrate to trioxide conversion systems
- Reprocessing filter systems.

The back-pulse process is typically undertaken whilst the filter is in operation on-line and, apart from a very small pressure spike (or 'overpressure'), it does not interrupt or interfere with the process flow.



Pulsed Jet Self Cleaning System



Surface Modification Technology



Surface Modification Technology

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Waste Management

Porvair Filtration Group provides engineered waste management solutions designed to meet the stringent regulatory and operational requirements of nuclear facilities.

Our filtration architectures utilise advanced sintered metal media, high-integrity porous materials, polymer composites and corrosion-resistant alloys to ensure reliable performance under elevated temperature, radiation, and chemically aggressive conditions.

We support solid, liquid, and gaseous waste streams with systems capable of high particulate retention efficiency, controlled differential pressure behaviour, and long-duration service life in mission-critical environments.

From HEPA-grade containment modules and criticality-safe filtration housings to effluent treatment skids and decommissioning-specific capture systems, each solution is fully validated through ASME, RCC-M, and other process relevant nuclear QA frameworks.

Our engineered designs mitigate contamination risk, optimise waste volume reduction, and deliver traceable, compliant performance for the full nuclear waste lifecycle.



Radial Flow HEPA Filter Elements

Vitrification

Our self-cleaning pulsed jet filtration units are used for hot-melt vitrification furnace off-gas treatment.

The system provides continuous, high-efficiency particulate removal while maintaining controlled containment conditions required for nuclear processing operations.

Developed and supplied for application at Sellafield, UK, the filtration technology was engineered in collaboration with Veolia Nuclear Solutions and the National Nuclear Laboratory (NNL). The units deliver:

- Automated pulsed-jet cleaning for sustained filter performance and extended service life
- High-temperature and radioactive particulate handling capability
- Robust containment design suitable for nuclear fuel cycle and waste vitrification processes
- Optimised flow and pressure management for stable furnace off-gas operation
- Low-maintenance operation to support long-duration campaigns

This solution provides a reliable, engineered approach to off-gas filtration within demanding vitrification and nuclear research environments.

HEPA High Strength Radial Filter Elements

Porvair's unique 2,000 cfm radial flow filters, low ΔP HEPA filter with extreme dirt holding capacity was developed at our Ashland, VA facility for a US DOE waste treatment plant.

This filter is now ASME AG-1, Section FK compliant, DOE approved, installed and operational.

Made from high purity borosilicate glass fiber, this design provides for heat stable potting compound, flame resistant media and has a high humidity tolerance. The extreme dirt holding capacity is to be credited to Porvair's patented pleat separation technology.

Available in both safe and remote change format.

Due to this filters' documented design, performance and quality, variants of this design are now being used in existing military and commercial locations.

Vent Breathers for Nuclear Casks / Containers and Spent Fuel Transportation Casks

Using a range of metallic filter media in a variety of metal types, Porvair is able to supply waste package breathers that are precisely tailored to the individual needs of any application.

Available with defined separation efficiencies, gas diffusion and flow/ΔP characteristics.

Specially designed vent breathers and permeation devices supplied to nuclear storage users include but not limited to:

- HEPA (THE) grade shielded vent breathers for spent fuel drying and storage
- WIPP compliant TrU waste package vent breathers
- 500 litre drum breathers
- 3m³ box breathers

Designed to meet global specifications'.

TRUvent™ Vent Filters





Vent Breathers



WIPP Filter Vents

The TRUPACT-II Safety Analysis Report (SAR) outlines the specific requirements for particulate containment efficiency, pressure drop, and hydrogen diffusivity in the packaging, transport, and disposal of transuranic radioactive waste (TRU) at the Waste Isolation Pilot Plant (WIPP) in New Mexico.

Furthermore, on-drum testing confirms their adherence to U.S Federal shipping standards under DOT Specification 7A.

The TRUvent™ filter vent has been validated and approved as meeting all WIPP operational requirements.

See TRUvent™ datasheet for full specifications.

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Decommissioning and Decontamination

Porvair Filtration Group is active in every aspect of nuclear decommissioning and decontamination.

As processes are developed to deal with legacy wastes, and legislation is introduced to define storage conditions, we are developing novel solutions to meet increasingly complex filtration problems associated with decommissioning and decontamination facilities around the world.

Our engineered solutions include:

- the clean-up of liquid wastes
- the decomposition, reduction and reformation of organic and other wastes
- the drying and storage of spent fuel
- the venting of waste tanks and storage
- effluent treatment packages
- UK and US (AG-1 compliant) radial flow polymeric, glass and metal HEPA systems
- treatment of high-level waste off-gas from vitrification
- dewatering of legacy liquid wastes
- a full range of industry standard disposable filters for power generation and decommissioning applications.

Our capabilities also extend to:

- the collection of mechanically generated demolition debris
- spent fuel transport cask
- high temperature and chemical attack resistant HEPA filters.



Tubesheet Assembly

Fluidised Bed Diffusers

In several areas of the nuclear fuel cycle and waste treatment processes, fluidising beds are used to accelerate chemical conversions.

Porvair has both the materials and the expertise to supply specially designed new build diffusers or to supply retrofit diffusers into existing plants.



Backwash Filter System

Our glovebox filtration technologies are purpose-designed to protect operators, ensure process integrity, and maintain the highest standards of safety in environments where containment is paramount.

Advanced Air and Gas Handling Capabilities

Our glovebox filtration solutions integrate seamlessly with ventilation systems to support effective confinement of airborne radioactive particles.

Our experience includes: HEPA protection, pre-filtration, metallic HEPA filtration, and pulsed-jet self-cleaning systems, our technologies ensure clean, stable operating atmospheres even under demanding conditions.

Push-Through (Push-Push) Filter Element Assembly



GasPro™ Glove Box Filters

GasPro™ Series filters are designed for 3 nm particle retention. These point of use inline filters utilize an integrated filter / vessel design intended to reduce worker exposure during change-outs. The all-316LSS welded filter offers excellent bake-out characteristics for fast dry downs and in-line qualification. View Datasheet for more information.

Integrated Glovebox Housekeeping & Contaminant Management

To maintain internal glovebox cleanliness, Porvair offers specialized vacuum systems designed to operate entirely within the sealed environment.

These units securely recirculate internal atmosphere while removing errant solids, preventing contamination buildup. For higher-solids environments, pulsed-jet self-cleaning vacuum systems return collected material for safe disposal—supporting both operational efficiency and safety.

Rempak™ Filter Elements

Rempak™ candle filters are manufactured with removable hardware fittings and replaceable media, resulting in lower operating costs.

Available in both cylindrical and pleated formats, in industry standard designs, and can be custom designed to fit any particular housing.

These are available in both sintered metal fibre and woven wire mesh.

All candles are provided with internal volume reducers to avoid stagnant flow regions within the candle design. Flow diverter features within the volume reducer provide good distribution over the candles as the polymer enters the housing. View Datasheet for more information.



GasPro™ Glove Box Filters



Rempak™ Filter Elements

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Fusion

Fusion systems, like fission, require exceptionally robust filtration to manage high temperature gases, radioactive particulates, tritium bearing effluents, and chemically aggressive process streams.

Porvair's proven portfolio for nuclear fusion applications includes HEPA and pre filtration technologies, metallic HEPA filters engineered for extreme operating conditions, and fully custom filtration solutions. Each is designed to meet the stringent environmental, material compatibility, and reliability requirements expected in fusion facilities.

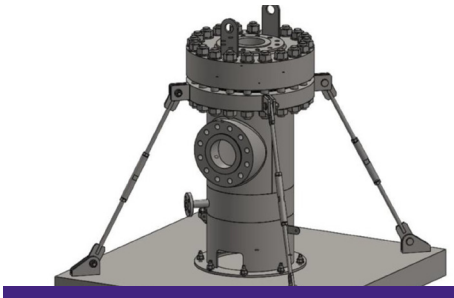
Our technologies play a significant role in supporting progress toward demonstrating net energy gain in fusion. By working closely with major international fusion research programmes, Porvair contributes to ensuring that critical systems operate safely, efficiently, and with the reliability necessary to advance the future of fusion energy. We operate purpose-built design, manufacturing, and testing facilities in both the UK and the USA dedicated to our nuclear product range.

Water Cooling and Vacuum Systems

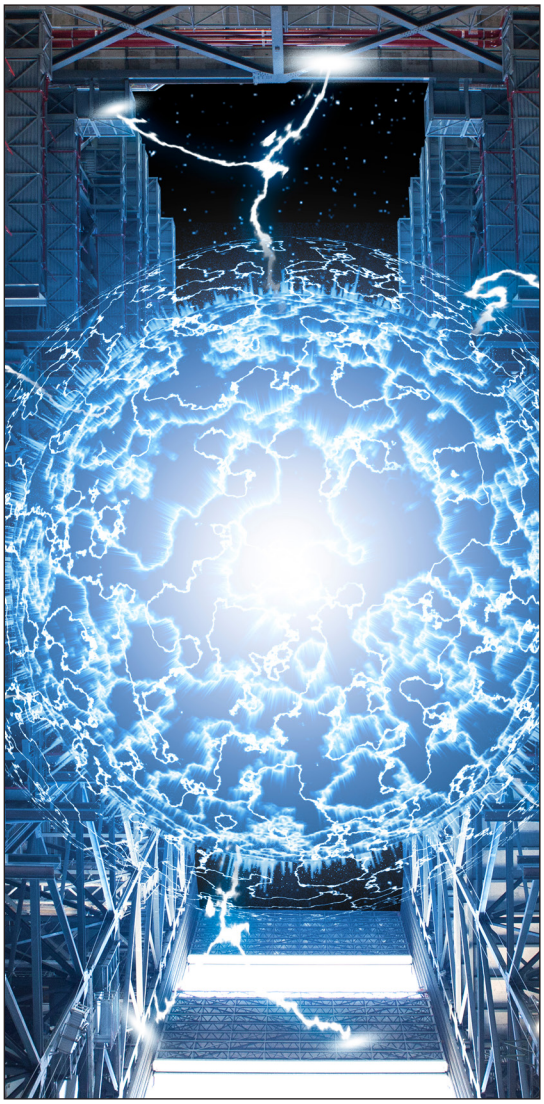
Porvair delivers high-performance filtration technologies engineered to meet the demanding requirements of nuclear cooling applications. For critical systems such as Vacuum Vessel Primary Heat Transfer and Drying Systems, our filters provide exceptional reliability, safety and operational continuity.

Our Vacuum Vessel Primary Heat Transfer System (VV PHTS) filters are designed and manufactured to comply with stringent Nuclear Pressure Equipment (ESPN) level N3 classifications. Built to withstand rigorous operating environments, these filters ensure consistent protection of sensitive heat-transfer equipment while supporting long-term system integrity.

In addition, our filtration solutions for Drying Systems (DYS) within cooling water infrastructure are developed to deliver dependable particulate control, safeguard downstream components and maintain system efficiency under continuous operation.



Filter Housing Assembly





Tubesheet Assembly

Porvair Filtration Group delivers a specialised portfolio of engineered filtration and separation solutions that support military nuclear defence applications.

Our technologies are designed to maintain the safety, efficiency, and reliability of critical nuclear operations, performing effectively in extreme environments.

Across the submarine fleet, our filtration products ensure systems remain free from contaminants, supporting safety, long service life, operational reliability, and cost-effective performance even in the most demanding scenarios.

Porvair operates purpose-built design, manufacturing, and testing facilities in both the UK and the USA dedicated to our nuclear product range.

Last Chance Filters



Custom-Engineered Solutions for Complex Applications

Every nuclear operation is unique, and our engineering teams collaborate closely with customers to design fit-for-purpose solutions as well as standard offerings where applicable, from single retrofit elements to complete containment and filtration packages.

All systems are designed to meet stringent material, code, and technical requirements across a wide range of nuclear sectors including fuel processing, reprocessing, decontamination, decommissioning, waste handling, fusion and defence.



Sinterflo® P Powder Tubesheet Assembly



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Porvair Filtration Group has a policy of continuous improvement in all areas of its business. Listening to the customers' present and future requirements is a vital part of our operations and a key part of driving change.

We understand that product development involves building multidisciplined teams, not only within the company, but often in partnership with our customers, improving project efficiency and ensuring complete customer satisfaction. This continuous development of products and materials is vital to enable us to offer new and better solutions to applications. **Porvair** has implemented various methodologies to drive out waste and process variance across the company to achieve the ultimate goal of zero defects.

We have a dedicated team of scientists, engineers, production and quality professionals working towards the best possible filtration solutions for our customers. We have a fully equipped test house and laboratory, and our experienced design engineers use the latest AutoCAD® technology, with 3D solid modelling, integrated with a finite element analysis system, to give full structural assurance capability.

Quality is at the heart of every stage of our operation and a fundamental part of our culture. We are ISO9001 approved at a number of our manufacturing facilities and hold many other accreditations for the various industries we serve.

Research and Development

Continuous development of products and materials are vital to enable **Porvair** to offer new and better solutions to applications. Development plays a fundamental part in our operations and, as a result, we have developed a number of new bespoke products based on our established porous polymeric materials (Vyon®) and sintered metal media (Sinterflo®).

Although we operate across many filtration and separation markets there is significant interaction between each division in terms of product research and development. The new product development team is drawn from scientists and engineers from across all divisions encouraging new ideas and new solutions. The success of this approach has been in the interaction of chemists and engineers working together to find practical solutions to some extremely complex scientific challenges identified in the chosen market areas.

Engineering

From initial concept design through manufacture and validation to in service support, our highly experienced team of dedicated engineers work to develop the optimal filtration solution. Our team utilises the latest engineering tools of 3D AutoCAD®, Finite Element Stress Analysis, Computational Fluid Dynamics (CFD) and bespoke pressure vessel design software (PD5500, ASME VIII, EN13445). This is combined with over 30 years of proven experience and a knowledge and strong ethos of working closely with our customers, ensuring filtration solutions that meet customers' requirements.





Manufacturing

Porvair Filtration Group produce filters and filtration systems, as well as a range of porous materials based on sintered polymers and metals, at production sites within the UK and the USA. We manufacture for a wide variety of industrial, pharmaceutical and biomedical applications, as well as supplying filtration solutions for extreme conditions of temperature, pressure and corrosion for the aerospace and nuclear markets.

Our production capabilities include the complete element or cartridge construction, along with the build of entire tubeplate and vessel assemblies. We boast specialist fabrication skills and techniques in all of our manufacturing sites around the world as well as extensive ISO Class 5 cleanroom facilities.

Testing and Laboratory

Our dedicated test, development and laboratory services underpin our design and development activity, from filtration media and material characterisation, product verification testing to customer systems simulation trials and in service performance evaluation. Our capabilities include filtration characterisation, environmental testing and analysis.

Quality

Our policy is to provide products and services that consistently satisfy the commitments made to our customers by complying with their requirements, working together as a team and by achieving continual improvement in our skills, systems, processes and performance.

We have a dedicated team of quality professionals with many years' experience in definition, implementation and maintenance of quality management systems meeting multiple industry requirements. This extends across the workforce through a strong quality culture and a philosophy of 'getting it right first time' driven from the top of the organisation.

Our quality management systems are regularly audited internally and by customers and regulatory bodies. We hold ISO9001 at a selection of our manufacturing sites along with, AS9100D at our Ashland facility and EN9100 and EASA Part 21 Subpart G at our Segensworth facility. We are NQA1 capable subject to specific project requirements.





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Aerospace and Defence

Our filters protect vital sub-systems in aircraft, helicopters, military vehicles, missiles and spacecrafts and are used for processes such as fuel management, power generation and environmental control.



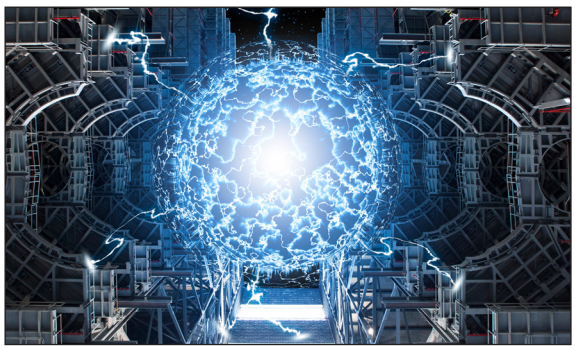
Food and Beverage

We committed to partnering with our customers to improve process control, increase production efficiency and reduce costs, whilst protecting final product quality.



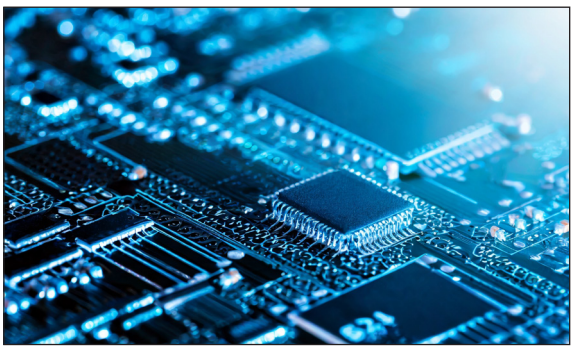
Nuclear

Working across the field, designing and supplying filtration and other equipment, we offer solutions to the power generation, fuel production, reprocessing, decontamination and decommissioning and waste packaging sectors.



Ultra High Purity

We manufacture a wide range of high purity porous media and reliable, high efficiency filtration products for both gas and liquid applications.



Refining

Our technology is used throughout a wide range of applications. These include, but are not limited to, clean coal technologies, gasification and alternative energy technologies.



Bio-Pharmaceutical

We manufacture a range of innovative, high performance, cost effective filters specifically designed for each stage of the pharmaceutical manufacturing process.



Process

Whether for a new plant or the retrofit / upgrading of an existing plant, we carefully assess each customer's needs to define a product most suitable for your requirements.



Sustainable Energy

We supply a comprehensive range of filtration and separation products to the energy markets and are continuously adapting our range to cover a wide portfolio of sustainable processes and technologies.



Printing

Alongside our standard range of inkjet filters, we are able to provide full technical support to OEM partners for the conception, engineering and manufacture of custom designed filtration solutions for all inkjet system architectures.



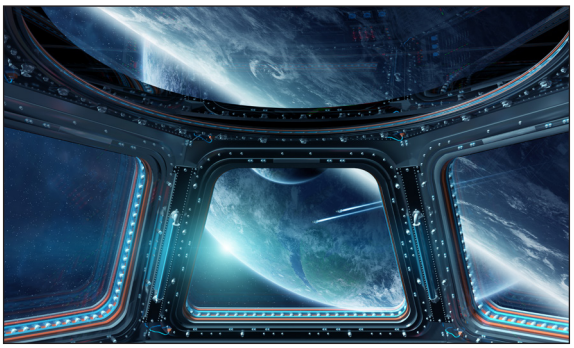
Water: Industrial, Process, Residential

A range of diffused aeration products for the treatment of residential, industrial and municipal effluent, used for the elimination of organic, chemical and other debris to meet stringent regulations for drinking water, chemical, industrial, pharmaceutical and science markets.



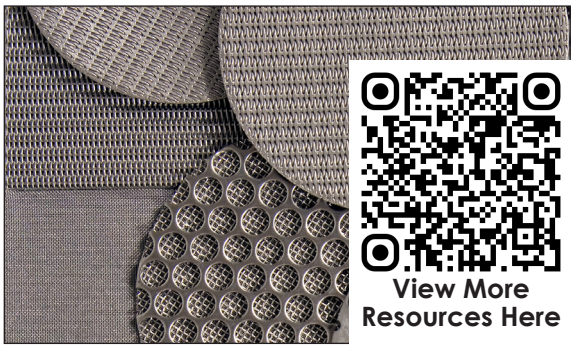
Space

We supply a comprehensive range of filter media, assemblies and filter elements. Applications include: Vehicle launch propulsion, Orbit-insertion, Station-keeping (attitude and environmental control), Composite manufacture

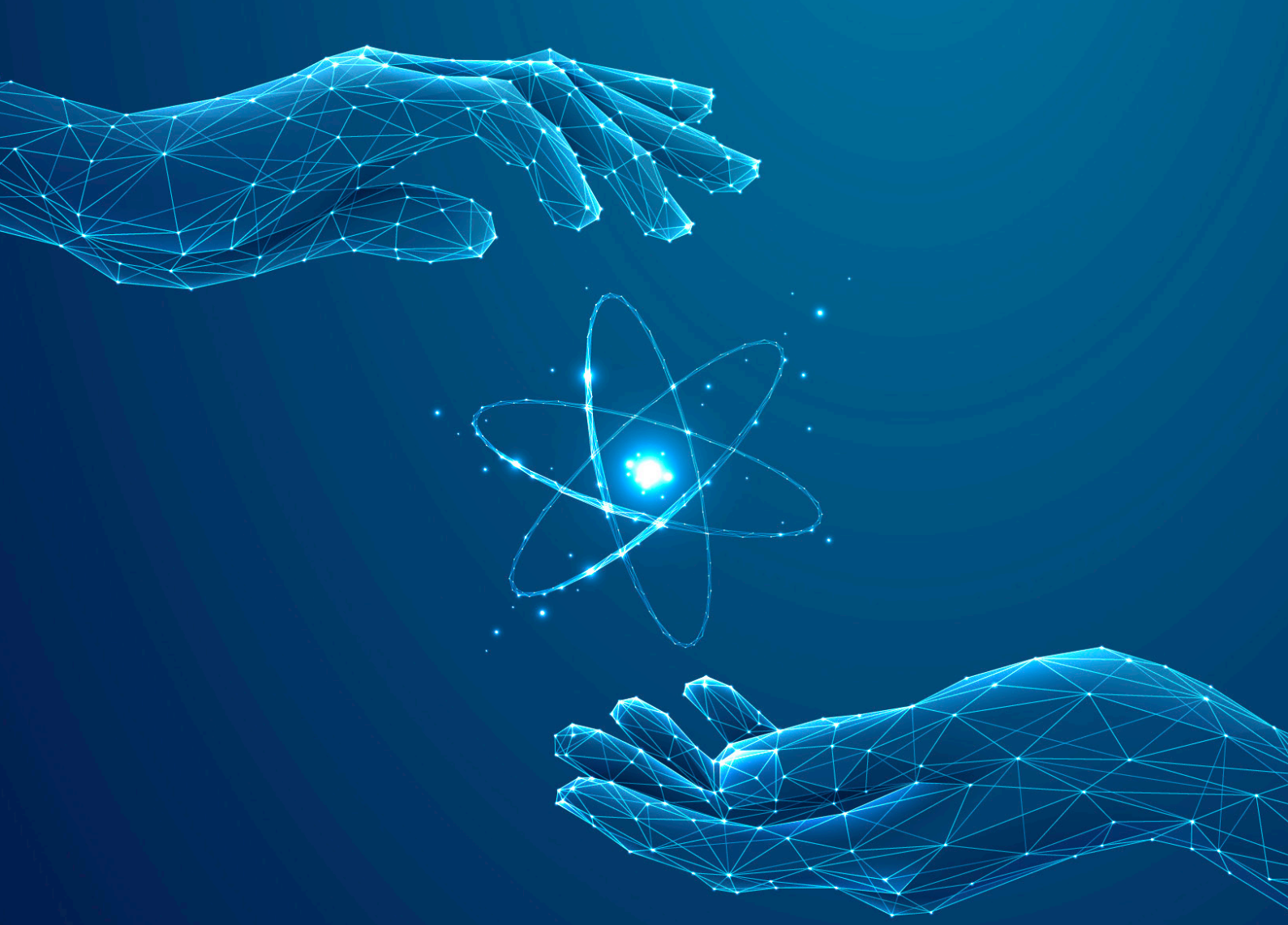


Porous Media and OEM Materials

We are a major manufacturer and developer of sintered porous materials, offering engineered solutions for a wide range of applications and materials. Applications include: filtration, aeration, medical, fluidisation, vacuum support, chromatography, flame arresting, flow control.



View More Resources Here



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filtration group

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PFG208/Rev2/Nov26





Porvair Filtration Group

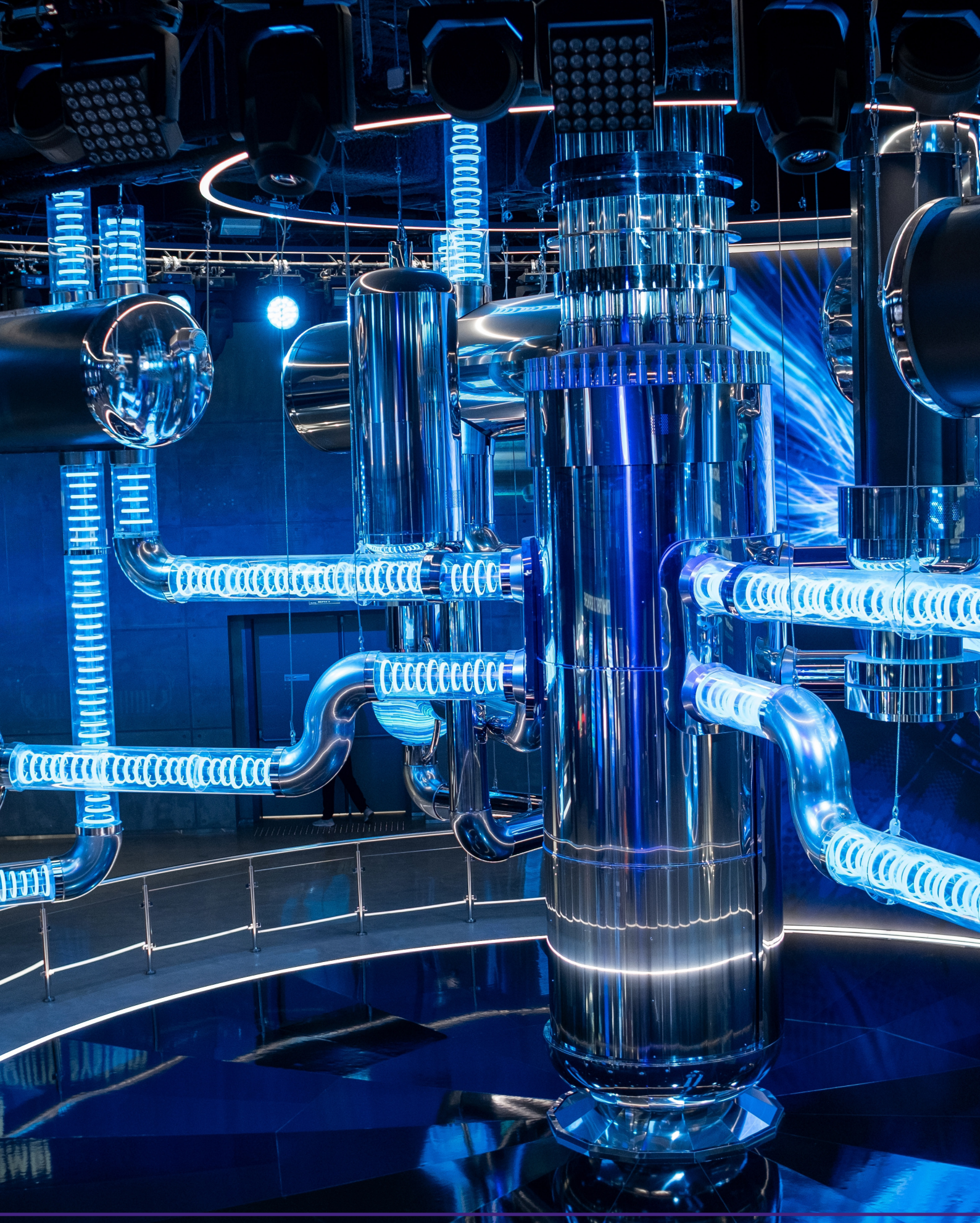
Nuclear Filtration Services

Applications and Product Range





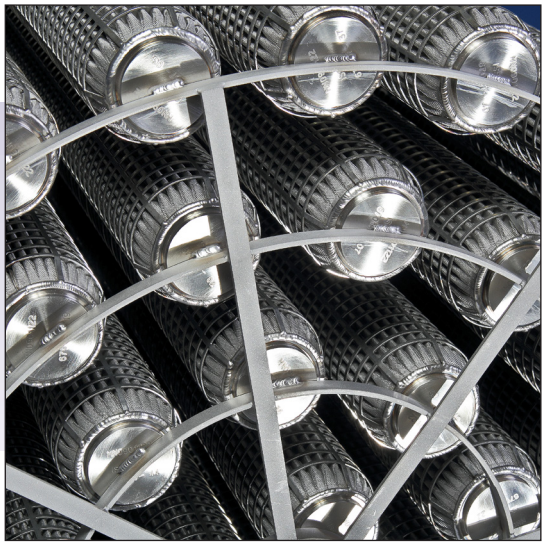
www.porvairfiltration.com





Standard Product Datasheets





As an engineering company in the filtration industry, we are able to take an initial discussion to a fully optimised solution, meeting material, code, technical and quality requirements to provide a total solution to a specific problem.

We have the capability to provide everything from a single, specialised, retrofit element to a complete, packaged system to meet the precise needs of a complex application, together with on-site support and a complete after-sales service. In addition to our acknowledged leadership in both engineering and quality, we also have the capability to offer the services of our extensive laboratory, development and testing facilities.

Pulsed Jet Self Cleaning Air and Gas Filters

Pulsed jet cleaning is a process developed by **Porvair Filtration Group** for the effective removal of collected solids from the surface of a filter element.

The process is typically undertaken whilst the filter is in operation on-line and, apart from a very small pressure spike (or 'overpressure'), it does not interrupt or interfere with the process flow.

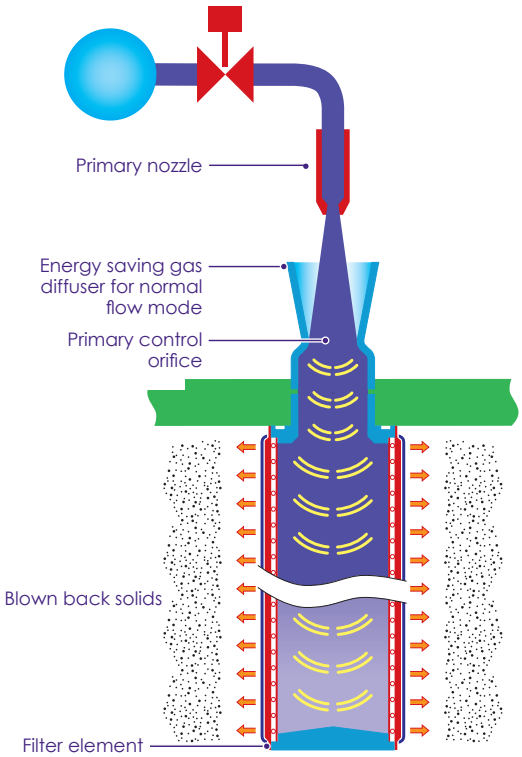
This technique is widely used across a range of processes in areas as diverse as:



- **fuel production** including fuel pellet grinding, furnace off-gas venting, powder transport and conversion oven/fluidised bed venting at temperature
- **power generation** including spent fuel and debris vault venting, and protection and spent fuel drying processes
- **decommissioning** including mechanically generated dust collection, smoke removal, ceramic membrane crushing and cementation drum fill operations
- **waste deposition** including vitrification and waste solidification processes, drum filling and drum venting

Pulse jet filtration allows a properly designed system to reach a stable operating pressure differential in the long term, returning to the user all the solids collected for effective, minimum volume disposal or re-use.

The technique and its associated equipment can be designed to be used in high temperature, high solids, high pressure, chemically aggressive and highly active environments to provide filtration down to very fine levels, with continuous operation and consistent pressure loss, allowing the accurate specification of complementary equipment around the filter.



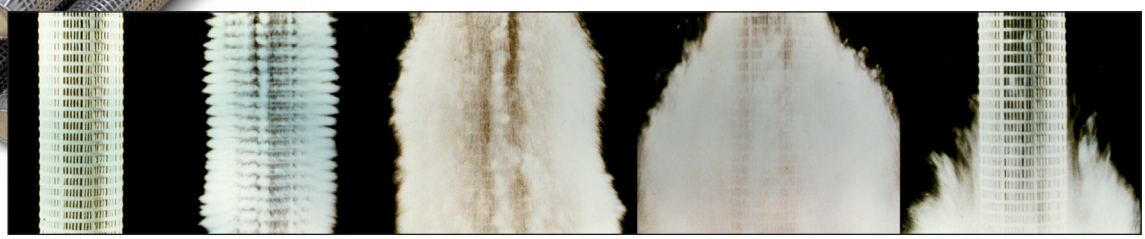
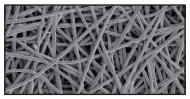


Figure 1 Moving across the photograph from left to right: the metal fibre element loaded with dust; the dust is removed from the surface by the pulsed jet action; the dust is carried away; the dust begins to settle; and quickly falls to the bottom of the vessel leaving a clean element. The sequence time is less than half a second. The cleaning pulse is made whilst process flow continues.

Our custom designed filtration solutions are manufactured from a range of metallic filtration media, including:



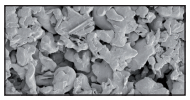
Sinterflo® F Sintered Metal Fibre

- High permeability
- Low clean and operating pressure drops
- Excellent cleanability, particularly in pulsed jet operation
- Pleatable, offering higher filtration area per element
- Available in 316L stainless and a range of alloys
- True HEPA air and gas filtration possible (with pulsed jet cleaning if necessary)



Sinterflo® M Sintered Metal Mesh

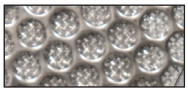
- Available in a wide range of mesh sizes and separation ratings
- Available in various metal types
- Sintered, layered mesh that can be designed to meet specific needs in a range of plate sizes and other shapes
- Widely used in fluidised bed and packed bed laterals, distributors and bed plates



Sinterflo® P Sintered Metal Powder

- Low permeability, but extremely robust
- Pressure drops typically higher than sintered metal fibre
- Primarily a depth filter, so cleanability is not as effective as Sinterflo® F Sintered Metal Fibre
- Robust structure permitting successful use in properly designed liquid filtration backwashable systems
- Available in a wide range of stainless steels and other alloys

Also available are a range of media surface treatments to further enhance the chemical, temperature and solids abrasion resistance of the media within a particular application.



Sinterflo® MC Mesh Composite

Sinterflo® MC multi layered, diffusion-bonded stainless steel mesh is available in 316L and other alloys. This precision filter mesh is available in a range of different pore sizes ranging from 2 to 100 micron in diameter. This material is easily custom engineered for non-standard applications and can be formed into tubes and small discs or large scale circular plates.

Sinterflo® MC is particularly well-suited to demanding applications where high operating temperatures up to 540°C (1000°F), increased chemical resistance and/or high abrasion resistance is essential.

Polymeric Disposable Filters

We provide a comprehensive range of filters for use as prefilters, filters and sub-micron membrane filters. They are suitable for use in new installations or as replacement cartridges in existing systems. With a broad range of quality filtration products, tested and guaranteed to international standards,

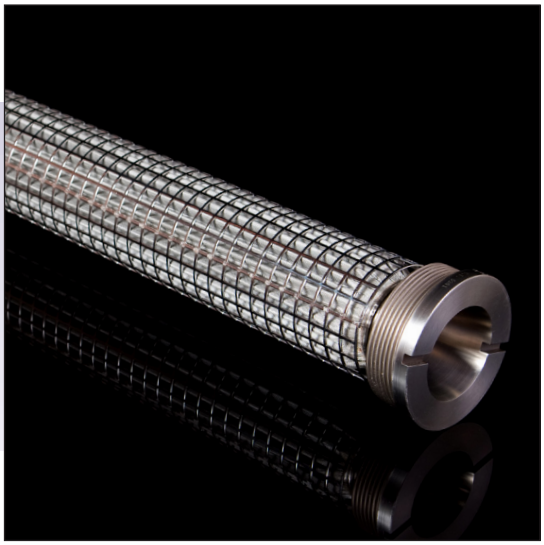
Our filters are in service in applications as diverse as the pharmaceutical, electronics, nuclear, chemical and food and beverage industries. This supports our proven capability in the field of high efficiency filtration by satisfying the particular requirements of each customer, whilst meeting the most exacting industry standards.





Sinterflo® F Fibre Filter Elements

For the Nuclear Industry



Manufactured from randomly laid metal fibres and sinter-bonded to form a uniform high porosity filter medium, Sinterflo® F demonstrates a significantly low pressure drop, high permeability and excellent dirt holding capacity.

With the feasibility to formulate metal fibres to meet specific application requirements, combined with inherent durability, sintered metal fibre filters can be cleaned in situ without interrupting process flow, so providing the ultimate in process economics by reducing downtime to a minimum.

Available in 316/316L as standard with other alloys such as Inconel® 601, Hastelloy® X, NiCrMo Alloy 59 and Fecralloy® on request.

Typical Applications

- Liquid Filtration
- Gas Filtration

Features and Benefits

- Resistant to high temperatures and corrosive environments
- Fully welded construction with no adhesives or fillers
- High void volume
- Excellent cleanability and dirt holding capacity
- Minimal maintenance costs

Ordering Information

For ordering information please request a copy of the full datasheet, or discuss with a member of the sales team.

Sinterflo® M Mesh Filter Elements

For the Nuclear Industry



The Sinterflo® M demonstrates good permeability, high tensile strength and is available from single wrap media designs through to complex multi-layered structures in pleated constructions to optimise the area available. These meshes can be manufactured in diffusion bonded versions to increase performance security of pore shape and size and have the broadest range of pore sizes of any filter media type.

Sinterflo® M precision woven meshes are manufactured in various types of weaves. Plain square weave is available for simple sieving duties through various weave patterns (Reverse Plain Dutch, Broad Mesh Twill and Single Plain Weave). Dutch Twill Weave is provided for the most comprehensive selection of surface filtration duties.

Available in 316/316L stainless steel as standard with other alloys such as 304L stainless steel, Inconel®, Hastelloy® and Monel® on request.

Typical Applications

- Liquid Filtration
- Gas Filtration

Features and Benefits

- Precise aperture in size and shape
- Good permeability
- Fully welded construction with no adhesives or fillers
- Available in the broadest range of pore sizes of any filter media type

Ordering Information

For ordering information please request a copy of the full datasheet, or discuss with a member of the sales team.

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Sinterflo® P Powder Filter Elements

For the Nuclear Industry



Sinterflo® P is a robust material manufactured from sinterbonded metal powders. Primarily produced in 316/316L grade for use in temperatures up to 420°C (788°F), depending on process conditions, and offering resistance to most chemicals, Sinterflo® P media can also be produced in other grades of stainless steel and alloys such as Inconel®, Hastelloy® and Monel®.

Sinterflo® P powder media can be manufactured in both disc format or in cylinder format.

Our isostatic pressing ensures greater media uniformity with no welds, leading to increased corrosion resistance. Available in wall thickness of 1.6mm (0.07") and 3mm (0.12").

Typical Applications

- Liquid Filtration
- Gas Filtration

Features and Benefits

- Extremely robust construction
- Smooth surface finish preferable for backwash applications
- Self supporting construction eliminating the need for additional hardware
- Broad range of fixed, uniform pore sizes
- Ability to withstand varying process conditions

Ordering Information

For ordering information please request a copy of the full datasheet, or discuss with a member of the sales team.

Rempak™ Filter Elements

For the Nuclear Industry



Rempak™ filter elements are manufactured with removable hardware fittings and replaceable media, resulting in lower operating costs and reduction of waste.

Available in both cylindrical and pleated formats, in industry standard designs, and can be custom designed to fit any particular housing. These are available in both sintered metal fibre and woven wire mesh.

Typical Applications

- Glove Boxes
- Decommissioning
- Fuel Production

Features and Benefits

- Proven robustness for cleaning and repeat use
- Long filter life
- Operate in high temperature environments

Ordering Information

For ordering information please contact a member of the sales team.

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porvair filtration group

Sinterflo® MC Septa Filter Elements



Our septa filter elements are made from Sinterflo® mesh composite (MC) filter media. This unique material is made from wire mesh and perforated metal, sintered together into a durable porous filtration medium.

Manufactured from 316/316L stainless steel, the various layers of woven wire mesh and/or perforated metal are chosen to fit the needs of the separation. These high-performance filters can be utilized with or without ion exchange precoat and are fully cleanable.

Our septa filter elements are designed to provide high internal void volume while maintaining structural integrity. This provides uniform resin retention(when precoating) and increases backwash efficiency, maximizing contaminant capture while also increasing on-stream life.

Every Septa MC is subject to stringent quality control testing prior to shipment.

Porvair Filtration Group provides custom engineered full flow systems as well as retrofit filters for existing installations.

Typical Applications

- Reactor water clean-up
- Fuel pool cooling and cleaning
- Radwaste processing
- Condensate polishing

Features and Benefits

- **High strength**
  Sinterflo® septa are designed and tested to withstand the torque, tensile and collapse pressures specified by the application. Complete test reports are available upon request.
- **Temperature resistance**
  Continuous operating temperature range: -50°C to 550°C (-65°F to 1,000°F).
- **Custom configurations**
  Sinterflo® septa are available in 1", 2" and custom diameters. Lengths are provided as specified for the application.
  A variety of hardware options are also available. Our septa are available individually or as complete bundle assemblies (for top tubesheet vessels).
  End fittings and adaptors are provided for proper sealing to permanent vessel internal connections.
- **Range of pore sizes**
  From 1 to 200µm.
- **Corrosion resistance**
  Sinterflo® septa are made from 316/316L stainless steel media. Other alloys are available upon request.

Specifications

Construction

Sinterflo® septa are made from multiple layers of woven wire mesh and perforated metal, which are sintered together into a rigid porous filtration medium.

Each layer is chosen for a particular purpose: filtration, flow distribution, backwash performance, strength and rigidity, etc. This unique material is then formed and welded into filter septa - designed and tested specifically for nuclear applications.

All Sinterflo® septa are GTAW welded using the latest techniques for weld purity and strength. All septa are 100% bubble-point tested (ARP-901) to ensure the desired filtration performance is met.

Materials of Manufacture

Filter media:	316/316L stainless steel wire mesh (various weaves).
End fittings:	Stainless steel adaptors of various configurations.

Dimensions

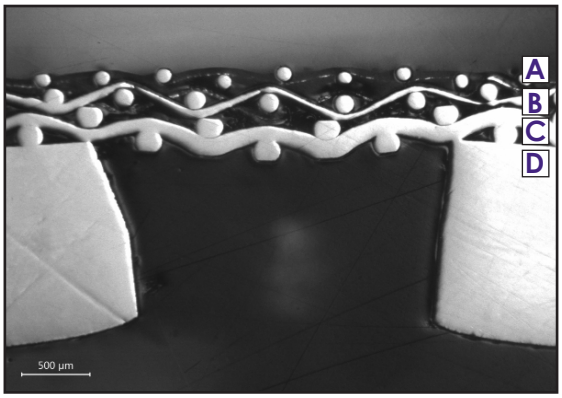
Outside diameter: 1-inch, 2-inch, custom.

Operating Temperature

Maximum continuous: -50°C to 550°C (-65°F to 1,000°F).

Other applications for our Sinterflo® MC media include:

- **Cup strainers**
  Cup strainers are underdrain strainer elements used for resin retention in deep bed demineralizers. Our strainer elements provide the required resin retention with high open area for flow, allowing improved flow distribution and ion exchange capacity utilization.
- **Vessel laterals**
  Our Sinterflo® laterals are custom designed to retain ion exchange resin beads while providing more uniform flow distribution throughout a deep bed demineralizer resin bed to optimize resin utilization.
- **Resin trap assemblies**
  Our resin trap (also called post-strainer) assemblies are designed to ensure that the ion exchange resins and precoat media are retained to avoid chemistry transient in reactor coolant and steam generators. Our resin traps are made from Sinterflo® MC media for precise resin capture and to meet flow requirements with low clean pressure drop.



A - Protective guard mesh on O.D.
B - Precision filtration weave
C - Flow distribution layer
D - Perforated metal inner core

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porvair filtration group

Polyfil™ II

Absolute Rated Pleated Polypropylene Cartridge Filters



A range of absolute rated cartridge filters are created, featuring the latest developments in meltblown polypropylene filter media technology. Polyfil™ II cartridges are based on a robust all polypropylene construction, offering removal ratings from 0.5 to 150 micron absolute.

Polyfil™ II cartridges are suitable for absolute removal of unwanted particulates and for pre-filtration to membrane filters. The graded multi-layer polypropylene media provide pre-filtration of the process fluid prior to the absolute rated final layer. The unique design of the Polyfil™ II cartridges helps to achieve lower running costs and a smaller process footprint.

Polyfil™ II filters are also highly resistant to integrity failure caused by steam sterilisation and have excellent chemical compatibility characteristics.

Polyfil™WF

Pleated Depth Filter or Final Polishing Filter

Polyfil™ wide format (WF) filter cartridges are designed for applications requiring a very high flow rate. They are equally suitable for use as pre-filters or final polishing filters in applications that do not require membrane filtration.

The use of a spacer mesh as an upstream pleat support means that fluid flow is uniform across the entire surface of the filter medium. The mesh holds the flow channels open thereby maximising dirt holding capacity and minimising pressure drop across the filter.

Typical Applications

- Liquid Filtration

Features and Benefits

- Graded multi-layer media
- High filtration area
- Guaranteed removal ratings
- Suitable for steam and hot water sanitisation
- Full traceability
- Controlled manufacturing environment

Ordering Information

For ordering information please request a copy of the full datasheet, or discuss with a member of the sales team.

Fluorofil™

Sterilising-grade ePTFE Membrane Cartridge Filters



Fluorofil™ cartridges are manufactured using a highly hydrophobic ePTFE membrane offering exceptionally high gas flow rates at low pressure differentials.

Fluorofil™ cartridges are recommended for sterile gas filtration and venting applications. The hydrophobic characteristics of the ePTFE membrane makes the Fluorofil™ filter cartridge particularly suitable for wet gas sterilising applications, such as fermenter air feed. For solvent and aggressive chemical filtration applications, these cartridges offer a wide range of chemical compatibility with high thermal stability.

Options

- Fluorofil™ F20
- Fluorofil™ F45
- Fluorofil™ F100
- Fluorofil™ Plus

Typical Applications

- Liquid Filtration

Features and Benefits

- Validated with *B.diminuta* >10^7 cfu/cm^2
- Bacterial spores and virus retention
- Designed for multi-cycle in situ steam
- 100% integrity tested prior to dispatch
- Aggressive chemicals resistant
- Full traceability
- USP class VI approved
- Uses FDA compliant materials
- Non-Fibre releasing

Ordering Information

For ordering information please request a copy of the full datasheet, or discuss with a member of the sales team.

porvair filtration group

NuKey™

Nuclear Grade Disposable Filter Elements



The NuKey™ family of commercial nuclear grade disposable filters are designed for use in all areas of a power plant that require liquid filtration.

NuKey™ filters are available with ratings as low as 0.5µm and can be manufactured for new applications as well as direct retrofits for existing OEM filters. Finer ratings may be discussed upon application.

These filters have a fully welded structure, which surpasses the older tie-rod design in terms of lifting safety and minimizes operator exposure, while meeting OEM filter specifications.

Porvair has over 50 years of experience delivering world class performance to the most demanding of environments. Commercial Nuclear experience specifically includes reactor coolant, spent fuel pool, radwaste filters, and resin trap strainers as well as other nuclear applications.

Other options available upon request.

Typical Applications

- Reactor Coolant / CVCS
- Seal Water Injection and Return
- Spent Fuel Pool and Skimmers
- Reactor Cavity
- Radwaste Containment

Features and Benefits

- Designed to reduce out of core radiation while minimizing operator exposure
- Fully welded 316L construction with potted seals eliminates the potential for bypass while providing a robust support structure
- Pleated filter media is optimized to reduce outage duration when fuel pool clarity is critical path
- Available in a range of styles and filtration ratings
- AS9100 / ISO 9001 certified
- Form, fit, and function replacements for OEM filters

Options

Style	Common Description
022	362 O-ring upper seal, 356 O-ring lower seal, 6.15" OD, 3um sintered disc at upper opening
044	6.65 OD, upper o-ring seal (special 6.65 OD), lower 358 unified o-ring seal
076	339 O-ring upper seal, 230 O-ring lower seal, 2.8" OD
105	339 O-ring seal, 6.1" OD, 7/16-14 end nut interface
130	362 O-ring upper seal, 356 O-ring lower seal, 6.15" OD, no upper opening
157	362 O-ring upper seal, 356 O-ring lower seal, 6.15" OD, no upper opening, alternate lifting handle

Nuclear Media Filtration Test Summary	
Instrumentation and Test Methodolgy	Compliant with NF X45-303 or ASTM F795-88
Fluid	Water at ambient conditions
Water at ambient conditions	15l/min
Sample form factor	Flat sheet

Specifications

Filtration Designation Code	Filtration Claim @ >=99.9%	Test Dust	MoC of Media	Leachables and Extractables: <150ppm Fluorides, Chlorides, Sulfates
0008	0.8	ISO FTD	GF (Glass fiber)	Pass
0010	1	ISO FTD	PP (Polypropylene)	Pass
0020	2	ISO FTD	PP (Polypropylene)	Pass
0050	5	ISO FTD	PBT (Polybutylene terephthalate)	Pass
0100	10	ISO MTD	PP (Polypropylene)	Pass
0130	13	ISO MTD	PBT (Polybutylene terephthalate)	Pass
0550	55	ISO MTD	PES (Polyester)	Pass
Potting Compound	N/A	N/A	Urethane	Pass

Claims	022	076	105	130	157
Normal flow direction	In to out	In to out	Out to in	In to out	In to out
Burst minimum (psid)	75	75	-	75	75
Collapse minimum (psid)	10	10	75	10	10
Axial tensile load minimum (lbf)	100	100	100	100	100

Ordering Information

Product Code: NuKey™- 1 - 2 - 3 - 4

1: Style	2: Code	Length
022	1088	10.878
	1886	18.858
	2713	27.128
044	2126	21.255
	2494	24.942
076	1140	11.399
	2134	21.336
	3127	31.273
105	2134	34.635
	1750	17.500
130	1088	10.878
	1886	18.858
	2713	27.128
157	1088	10.878
	1886	18.858
	2713	27.128

3: Filtration Rating*	
0008	0.8µm @ 99.9%
0010	1µm @ 99.9%
0020	2µm @ 99.9%
0050	5µm @ 99.9%
0100	10µm @ 99.9%
0130	13µm @ 99.9%
0550	50µm @ 99.9%

4: O-Ring Material	
E	EP
N	Buna N
S	Silicone

** Filtration ratings tested on flat sheet media, Single-Pass.*

PFG210/Dec24

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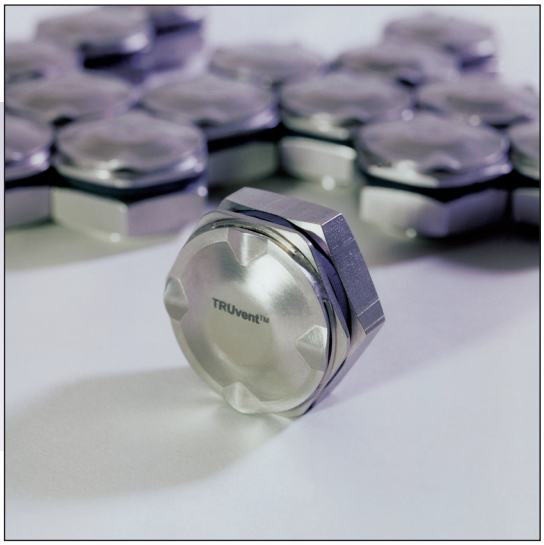
TRUvent™ Filter Vent

WIPP Compliant Waste Drum and Waste Box Filter Vent



Porvair TRUvent™ filters are primarily used in nuclear waste management and decommissioning applications, where they play a critical role in venting and pressure regulation of waste containers.

WIPP Filter Vents

The TRUPACT-II Safety Analysis Report (SAR) outlines the specific requirements for particulate containment efficiency, pressure drop, and hydrogen diffusivity in the packaging, transport, and disposal of transuranic radioactive waste (TRU) at the Waste Isolation Pilot Plant (WIPP) in New Mexico. Furthermore, on-drum testing confirms their adherence to U.S Federal shipping standards under DOT Specification 7A.

The TRUvent™ filter vent has been validated and approved as meeting all WIPP operational requirements

Features and Benefits

- All stainless steel construction
- Meets and exceeds requirements of TRUPACT-II SAR
- Passes DOT Spec 7A
- HEPA efficiency 99.97% @ 0.3µm DOP
- Hydrogen diffusivity > 1.85E-5 mol/s/mol fraction (Exceeds 5x diffusivity requirement)
- Flow rate > 35 ml/min (air) at 1 inch water pressure drop
- ISO 9001 accredited

Overview

The TRUvent™ filter vent uses an all stainless steel construction with EPDM gasket and provides economic solutions for high temperature, high activity, chemically aggressive and high solids environments.

Porvair has vast experience in the design and manufacture of custom vent breathers for a variety of waste containers (500L Drum, MOSAIK®, Yellow Box®,3M³ Box etc.)

Options

- 3/4"- 14 NPSM and 3/4"-14 BSPP Hex headed (WIPP Approved)
- 3/4"- 14 NPSM remote handled rounded head
- 2" - 11.5 NPSM Hex headed
- 7/16"- 16 UN 3A self-tapping remote handled round head
- 1/2"- 20 UNF 3A self-tapping remote handled round head

Radial Flow HEPA Filter Inserts

For the Nuclear Industry



We manufacture fully compliant radial flow filter inserts for nuclear ventilation applications, qualified to and validated for, global requirements These HEPA-rated glass fibre pleated filter inserts offer fine levels of filtration efficiency and low differential pressure.

We also manufacture a range of sintered metal fibre, powder and mesh filters for use throughout the nuclear industry; from power generation, through to fuel manufacture, including waste treatment and storage, decommissioning and decontamination activities.

We have the expertise and capability to design filtration equipment to meet the most arduous of conditions, including high temperature, aggressive chemicals and high solids environments.

High Strength HEPA Filters

High strength Radial Flow HEPA Filters can also be supplied against AG1 specifications and qualifications.

Specifications

Construction

The element filter pack features integrally pleated ribbons to separate and support the pleats. This minimises differential pressure and maximises dirt holding capacity performance.

Materials of Manufacture

End caps, guards, handle:	stainless steel 1.4307 or 1.4404 to BS EN 10088-2
Filter media:	glass fibre
Internal lip seal:	silicone rubber

Dimensions

Outside diameter:	518mm (20.4")
Inside diameter:	340mm (13.4")
Length:	624mm (24.6")

Operating Temperature

Maximum continuous: 80°C (176°F)

Tested in an oven at 500°C (932°F) for 10 minutes to ensure that materials do not contribute to combustion. This does not imply that filters are suitable for operation at the test temperature.

Typical Applications

- **Nuclear Ventilation**
  Radioactive and/or toxic atmospheric air or inert gas handling systems.

Features and Benefits

- **High efficiency**
  Efficiency greater than 99.99% at 950 l/s when tested to
  BS EN ISO 14644-3:2005 Cleanrooms and Associated Controlled Environments – Part 3: Test methods.
- **Temperature and chemical resistance**
  To Type 2 HEPA Insert standards.

Ordering Information

For ordering information please contact a member of the sales team.

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GasPro™ TEM-1760-GB

High-Flow Ultra-High Purity All-316L In-Line Filter



GasPro™ TEM-1760-GB Series filters are designed for 3 nm particle retention up to flow rates of 2150 slpm and temperatures of 200°C (392°F).

The all-316LSS welded filter offers excellent bake-out characteristics for fast dry downs and in-line qualification.

Typical Applications

- Filtration in semiconductor processes.
- High-flow ultra-high purity inert and specialty gases.

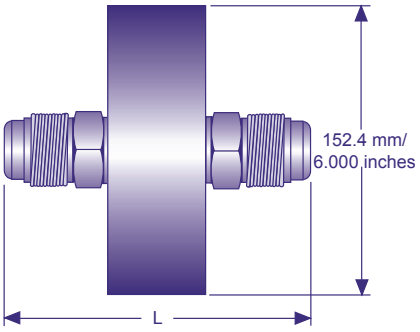
Specifications

- **Filtration Rating**
  Efficient 3 nm particle retention.
- **Maximum operating temperature**
  200°C (392°F) in inert gas.
- **Maximum operating pressure**
  42.2 bar (700 psig) at 20°C (68°F)

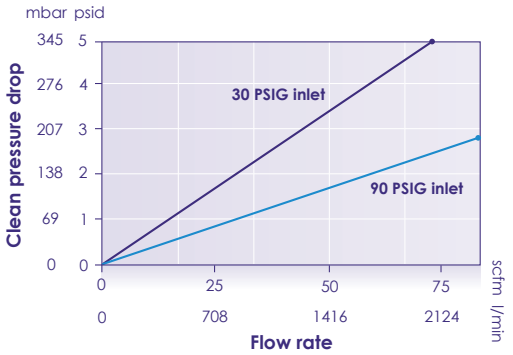
Features and benefits

- **Construction**
  All 316L stainless steel sintered fibre media and hardware.
- **Electro-polished housing**
  The filter assemblies have a <10Ra electro-polished 316L stainless steel housing to prevent corrosion and particle build-up on interior surfaces.
- **Out of package cleanliness**
  Our GasPro™ TEM-1760-GB filters are cleaned and packaged in a cleanroom with organic free handling for out-of-package, particle free, and chemical free cleanliness. Final assembly is purged with filtered nitrogen for initial cleanliness. Additional preconditioning is optional.
- **100% helium leak tested**
  All units tested to $1x10^{-9}$ atm cc/second.

Specifications



Gas flow rate vs Pressure drop



TEM-1760-GB Part Numbers and Ordering Information

Part number	Description*	Filter media/housing	Length (L)
TEM-1765-8-GB	1/2" male face seal inlet/outlet	All 316L SS	3.975" (101 mm)
TEM-1765-12-GB	3/4" male face seal inlet/outlet		5.15" (130.8 mm)
TEM-1765-16-GB	1" male face seal inlet/outlet		5.295" (134.5 mm)
TEM-1761-GB	1/4" compression inlet/outlet		3" (76.2mm)
TEM-1761-8-GB	1/2" compression inlet/outlet		3" (76.2mm)
TEM-1761-12-GB	3/4" compression inlet/outlet		3.5" (88.9mm)
TEM-1761-16-GB	1" compression inlet/outlet		4.25" (107.95mm)

Not all fittings, lengths, and part numbers are shown on the chart. Please contact your Porvair representative or an approved Porvair distributor for special length and fitting options.

PFG924/Rev4/Oct2025

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GasPro™ TEM-1780-GB

Ultra-High Purity All-316L In-Line Filter



GasPro™ TEM-1780-GB Series filters are designed for 3 nm particle retention up to flow rates of 700 slpm and temperatures of 200°C (392°F).

The all-316LSS welded filter offers excellent bake-out characteristics for fast dry downs and in-line qualification.

Typical Applications

- Filtration in semiconductor processes.
- High-flow ultra-high purity inert and specialty gases.

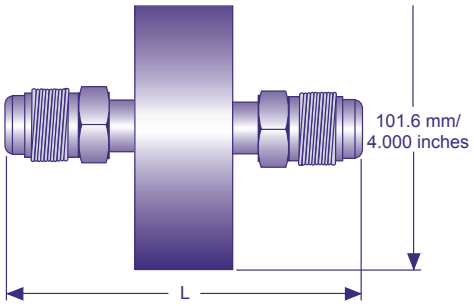
Specifications

- **Filtration Rating**
  Efficient 3 nm particle retention.
- **Maximum operating temperature**
  200°C (392°F) in inert gas.
- **Maximum operating pressure**
  137.9 bar (2,000 psig) at 20°C (68°F).

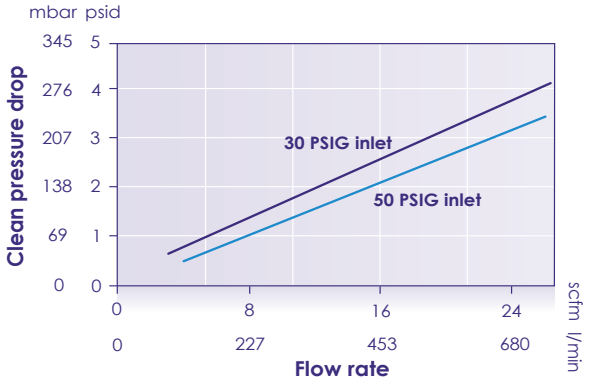
Features and benefits

- **Construction**
  All 316L stainless steel sintered fibre media and hardware.
- **Electro-polished housing**
  The filter assemblies have a <10Ra electro-polished 316L stainless steel housing to prevent corrosion and particle build-up on interior surfaces.
- **Out of package cleanliness**
  Our GasPro™ TEM-1780-GB filters are cleaned and packaged in a cleanroom with organic free handling for out-of-package, particle free, and chemical free cleanliness. Final assembly is purged with filtered nitrogen for initial cleanliness. Additional preconditioning is optional.
- **100% helium leak tested**
  All units tested to $1x10^{-9}$ atm cc/second.

Specifications



Gas flow rate vs Pressure drop



TEM-1780-GB Part Numbers and Ordering Information

Part number	Inlet/outlet fittings	Filter media/housing	Length (L)
TEM-1781-6-GB	3/8" compression inlet/outlet	All 316L	3.00" (76.2 mm)
TEM-1781-8-GB	1/2" compression inlet/outlet		3.00" (76.2 mm)
TEM-1785-8-GB	1/2" male face seal inlet/outlet		3.85" (97.8 mm)
TEM-1785-12-GB	3/4" male face seal inlet/outlet		4.65" (118 mm)
TEM-1785-16-GB	1.0" male face seal inlet/outlet		5.25" (133.4 mm)

Not all fittings, lengths, and part numbers are shown on the chart. Please contact your Porvair representative or an approved Porvair distributor for special length and fitting options.

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porvair filtration group

GasPro™ TEM-1790-GB

Ultra-High Purity All-316L In-Line Filter



GasPro™ TEM-1790-GB Series filters are designed for 3 nm particle retention up to flow rates of 700 slpm and temperatures of 200°C (392°F).

The all-316LSS welded filter offers excellent bake-out characteristics for fast dry downs and in-line qualification.

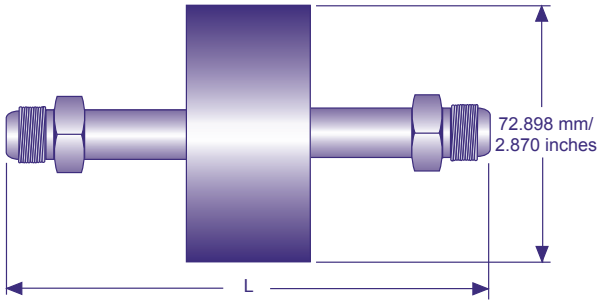
Specifications

- **Filtration Rating**
  Efficient 3 nm particle retention.
- **Maximum operating temperature**
  200°C (392°F) in inert gas.
- **Maximum operating pressure**
  206.8 bar (3,000 psig) at 20°C (68°F).

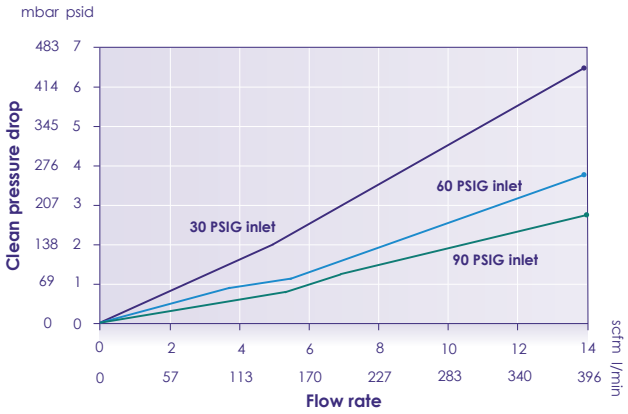
Features and benefits

- **Construction**
  All 316L stainless steel sintered fibre media and hardware.
- **Electro-polished housing**
  The filter assemblies have a <10Ra electro-polished 316L stainless steel housing to prevent corrosion and particle build-up on interior surfaces.
- **Out of package cleanliness**
  Our GasPro™ TEM-1790-GB filters are cleaned and packaged in a cleanroom with organic free handling for out-of-package, particle free, and chemical free cleanliness. Final assembly is purged with filtered nitrogen for initial cleanliness. Additional preconditioning is optional.
- **100% helium leak tested**
  All units tested to $1x10^{-9}$ atm cc/second.

Specifications



Gas flow rate vs Pressure drop



TEM -1790-GB Part Numbers and Ordering Information

Part number	Inlet/outlet fittings	Filter media/housing	Length (L)
TEM-1791-8-GB	1/2" compression inlet/outlet	All 316L	3.0" (76.2 mm)
TEM-1795-GB	1/4" M/M face seal		4.0" (101.6 mm)
TEM-1795-6-GB	3/8" M/M face seal		3.6" (91.4 mm)
TEM-1795-8-GB	1/2" male face seal inlet/outlet		3.6" (91.4 mm)

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