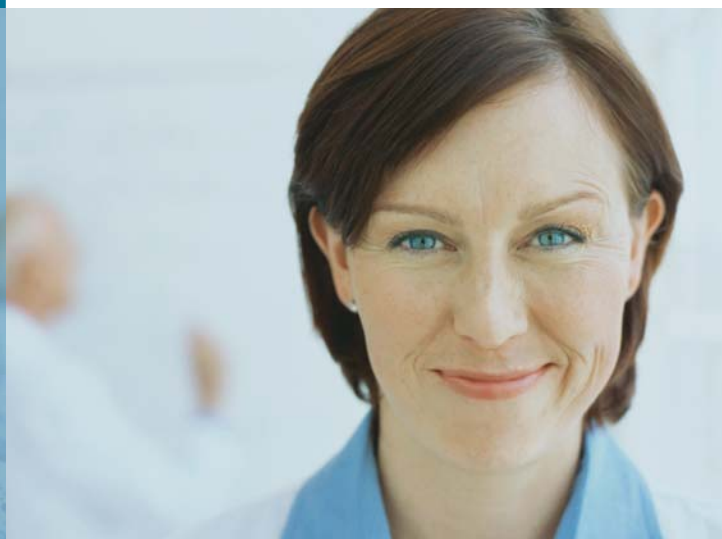


3M Purification

General Brochure



Fluid Thinking

From a World Leader in Purification





The 3M Company

3M is a diversified technology company, serving customers and communities worldwide with innovative products and services. 3M is subdivided into 6 major divisions: Display & Graphics, Electro & Communication, Consumer & Office, Health Care, Industrial & Transportation and Safety, Security & Protection. Each of these 3M divisions has gained a leadership position in global markets. 3M's ongoing commitment to innovation, in the creation of new technologies and products, positions us exactly where our customers need us.

Diversity of products

For more than 100 years, people around the world have looked to 3M for products and ideas, which solve problems and help to make the world smarter, faster, healthier and safer. With more than 55,000 products and 40 core technologies, 3M has gained leadership in all the major markets it serves throughout the world, by continuing to develop ingenious solutions to meet your varying needs.

3M Purification Filtration

3M Purification is a world leader in the design, manufacture and marketing of a comprehensive line of filtration products, which provide separation, clarification and purification solutions for fluids and gases.

A history of ingenuity

3M Purification, formerly known as CUNO, was founded in 1912 by Charles Cuno and it has more than 90 years of experience in the filtration business. In September of 1996, CUNO Incorporated became a publicly listed company on the NASDAQ stock market. On August 1st 2005, CUNO was acquired by the 3M Company and became part of the 3M Industrial & Transportation Division. As such it became 3M Purification In 2009. New solutions are continuously being provided to customers worldwide, by combining the broad worldwide market coverage of the 3M Company with the separation and filtration expertise of 3M Purification.

Using the core technologies of 3M Purification, a comprehensive product range that includes membranes, depth filters, pleated filters, cleanable filters, housings and engineered filtration systems is produced. 3M Purification owns more than 200 patents and 300 trademarks and is active on a worldwide basis, serving its customers from a large number of manufacturing facilities and sales offices in many different countries.

Market-oriented 3M Purification divisions include Life Science, Industrial and 3M Water Filtration. These business units are divided into different market segments according to the corresponding applications. The Industrial Division includes business units for Electronics & Semi-conductors, Chemical & Petrochemical products, Paints & Coatings, Power Generation and General Industrial Applications. The pharmaceutical, biological, biotechnology, diagnostics and food & beverage markets (including the markets for beer, wines, syrups and bottled water) are part of the Life Science Division. 3M Water Filtration provides water filtration solutions for the home, food service and vending & leisure markets.

Apart from these market divisions, 3M Purification also has a dedicated Engineering Department with an experienced team of engineers and technical specialists, who are available for analysing all details and designing customised solutions for each specific application. In addition, 3M Purification's Scientific Application Support Services (SASS) department works closely with customers to solve difficult filtration challenges and for recommending the most efficient, economical filtering systems. SASS specialists can perform on-site testing, using proprietary filtration expertise to partner with customers.

Scientific Application Support Services (SASS)

SASS is a global organisation of market-focused scientists and engineers, who represent a vital link in assuring effective, collaborative efforts between our customers and 3M Purification R&D. Members of the global SASS group are skilled in performing on-site benchmarking tests and relating these results to full-scale industrial filtration operations. When difficult processing problems are encountered, SASS experts will produce effective filtration solutions, by adapting existing filter products from 3M Purification's broad product range and/or by designing customised solutions together with the 3M Purification R&D and Engineering Department.

Core services

- **Integrity testing**
3M Purification can test critical components for integrity by means of product-specific and state-of-the-art procedures and tools.
- **Bacterial retention tests**
In-depth tests of filters for assuring effective and quantitatively high-level retention properties under extreme operating conditions.
- **Chemical compatibility tests**
These tests guarantee that 3M Purification filters are chemically and physically compatible with the fluids used in processing and with the operating conditions in which the filters are expected to function.
- **Extractables testing**
These tests, and the corresponding flushing protocols, provide information regarding the amount and type of material extracted from a filter, when washed with specific kinds of solvents. This helps to minimise extractables with all kinds of filters.

Furthermore, 3M Purification can recommend filter combinations that substantially reduce extractable components, helping to fulfil regulatory standards.

Additional Services

- 3M Purification can execute the required tests to provide product-specific integrity test parameters to answer this critical question.
- This evaluation supports the ability of a given filter to quantitatively retain a test organism when maximally challenged.

Manufacturing and engineering expertise

3M Purification's Engineering Department provides an experienced team of engineers and technical specialists. Regardless of the filtration application or separation technique that is required (clarification, selective adsorption, stabilisation, sterilisation), our engineers are available for working closely with you, in designing a customised filtration solution that meets your specific process requirements. Furthermore, our engineering department is not only able to supply custom-made filters, it can also design and manufacture complete filtration system in conformity with your specifications, including all required housings, pumps, hoses, gauges and automation instrumentation.

All of our 'state-of-the-art' production units are ISO certified, and every employees is personally committed to achieving high quality excellence in manufacturing integrated filtration systems according to various international construction standards. Almost all special requirements can be met for a wide range of configurations, materials, coatings and surface finishes.



Industrial

Fluid processing - filtration for an industrial manufacturing environment

3M Purification's Industrial Division provides filtration and separation solutions to a wide range of users in the processing and manufacturing industries. Process water clarification, fine ink pigment clarification, or removal of contaminating solids from natural gas. 3M Purification has the filtration products (e.g.: 3M™ DF System, Micro-Klean™ RT, Micro-Klean™ RB, Betapure™ PK, Betapure™ AU, CUNO™ CTG, 3M™ High Flow, etc.) to meet all of your needs, whether it is in the electronics, chemical & petrochemical, oil & gas, paints & coatings, power generation or other industrial markets.

Industrial Division applications for various market segments

Electronics & Semi-conductors

High purity water (hpw) manufacture	Flat panel displays manufacture
Printed circuit board	Cathode ray tube manufacture
Compact disc manufacture	Ceramic capacitor manufacture
Hard disc drive manufacture	

Chemical & Petrochemical

Acids, bases, organic solvents, catalysts, monomers, polymers and feed stocks
Petroleum products including gasoline, kerosene, lube oils and fuel oils
Water, including potable water, process water, boiler feed, demineralised feed, pre-reverse osmosis and wastewater

Oil & Gas processing

Amine sweetening	Desiccant dehydration
Glycol dehydration	Compressor lube oil systems
Production water	Boiler feed water
Lube oil	Sour water stripping
Fuel & instrument gas	Finished product filtration
Inlet separation	

Paints & Coatings

Commercial paints
High-quality paints and fine finishes
Electro-deposition paints
Automotive topcoats
Inks
Resins

General industrial applications

Machine tool coolants
Lubricating oils and grease
Hydraulic fluids
Dielectric oils, turbine and generator oils and lubricants
Parts cleaning
Pulp and paper production
Plating solutions

Life Science

Focusing on customer needs...

Pharmaceutical, bio-processing and biotechnology manufacturers in the Life Science industry have come to depend on 3M Purification. Through a combination of advanced product engineering and a solid understanding of Life Science industry requirements, 3M Purification has been able to design a broad range of application specific products, which exceed customer expectations. 3M Purification is always working to provide our customers with the most cost effective filtration and purification systems, with products like Zeta Plus™, LifeASSURE™ PDA, ZetaCarbon™ and LifeASSURE™ PFS.

From pre-filtration to final sterile filtration, for laboratory applications and all the way to full manufacturing operations, 3M Purification has the answer to your most challenging filtration needs.

Life Science Division applications for different market segments

Bio-processing

- Downstream protein purification
- Chromatography column protection
- DNA and endotoxin removal
- Purification of diagnostic serums, reagents and buffers
- Utilities, plant services and bulk chemical filtration
- Bioreactor feed stream clarification and sterilisation
- Cell culture and fermentation
- Plasma fractionation
- Sterile filtration of biological agents
- Fermentation
- Sterile air filtration

Biological agents

- Clarification of plasma-derived biological agents
- Clarification of toxoid broths for vaccine manufacturing
- Allergenic extract filtration

Pharmaceutical processing

- Parenteral pre- and final filtration
- Reduction of bacterial endotoxins with charge modified media
- High purity water filtration (DI or WFI systems)
- Oral OTC product filtration
- Solvent filtration
- Catalyst Recovery
- API purification and decolourisation





Food & Beverage

3M Purification supplies innovative and cost-effective filtration and separation solutions, for the most demanding applications in the food and beverage industry, including beer brewing, wine production, soft drinks manufacturing, bottled water filtration and food processing.

3M Purification patented Zeta Plus™ depth filter sheets in 1973, to meet the changing needs of the beverage industry. Zeta Plus cartridges, capsules and filter sheets provide a range of improved processing solutions, which reduce the high costs of filtration.

In 1995, 3M Purification patented a new, extremely durable micro-porous nylon membrane, which withstands the repeated hot water sanitisation cycles that are common practice in the food and beverage industries. This membrane is used in the LifeASSURE™ BA, BNA and BDA line of filter cartridges, guaranteeing microbiological stability and eliminating the need for pasteurisation. 3M Purification subsequently added a range of PES membrane filters, to further enhance its range of solutions.

Food & Beverage Division applications serving different market segments

Beer brewing and bottling

- Clarification
- Trap filtration
- Aseptic bottling & filling
- Utility filtration (water and gas)

Bottled water

- Sediment and particulate removal
- Pre & final membrane filtration

Food processing

- Water and preservative treatment

Wine manufacturing and bottling

- Clarification
- Roughing and polishing filtration
- Pre & final filtration (bottling / bag in box)
- Utility filtration (water and gas)

Spirits

- Fatty ester removal
- Polishing and bottling
- Decolourising and odour removal

Other segments include soft drinks, concentrates, high viscous syrups, sweeteners, liquid sugar & natural extracts in soft and carbonated drinks.

Water Filtration

3M Water Filtration offers a total solution for all water filtration and treatment needs, in the home, in the food service and vending sectors and also for caravans, motor homes and boats.

We deliver recipe quality water for quality beverages, whether at home or on the road, while maintaining the efficiency and life expectancy of valuable equipment, which can otherwise suffer contamination, clogging and breakdown due to unfiltered water. We provide point-of-entry or point-of-use systems for the entire home, making better drinking water available from a sink dispenser.

In food service and vending, we work with national restaurant chains, convenience stores and product suppliers to provide a solution that meets the demands for cleaner, better tasting water, for post-mix machines, ice machines, coffee machines, hot and cold beverage vending machines and water coolers. We also provide reverse osmosis systems for various applications, including steamers and combination ovens.

3M Water Filtration applications for various market segments

Food Service & Vending
Vending machines
Cold beverages and postmix
Ice making
Coffee & espresso machines
Scale reduction
Water coolers
Residential
Under-the-sink filters
Water softeners
RV and Marine
OEM
Refrigerator manufacturers
Appliance manufacturers





Industrial

- Electronics & semi-conductors
- Chemical & petrochemical
- Paints & coatings
- Power generation
- General Industry

Life Science

- Pharmaceutical
- Biological
- Biotechnology
- Diagnostics
- Food & beverage

3M Water Filtration

- Residential
- Leisure
- Food Service & Vending

For more information, contact your local 3M Purification representative or distributor.

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3M Belgium NV

3M Purification
Hermeslaan 7
1831 Diegem
Belgium
Tel.: +32 (0)2 722 51 63
Fax: +32 (0)2 722 50 12
E-mail: 3MPurification.be@mmm.com

3M Nederland BV

3M Purification
Postbus 193
2300 AD Leiden
The Netherlands
Tel.: +31 (0)71 5 450 377
Fax: +31 (0)71 5 450 368
E-mail: 3MPurification.nl@mmm.com

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