



“Look Beyond”[®]

AGC Chemicals Americas offers the world's
broadest range of high performance fluorochemicals
including fluoroelastomers, fluoropolymer resins,
custom compounds, and specialty materials...

AGC



AGC

***AGC Chemicals Americas, Inc.
offers the world's broadest range of
high performance fluorochemical
material science solutions including
fluoropolymer resins, custom
compounds, fluoroelastomers and
specialty materials.***



About Us

As a wholly-owned subsidiary of the century-old Asahi Glass Company in Japan, AGC Chemicals Americas, Inc. formed in 2004 as a merger between Asahi Glass America and Asahi Glass Fluoropolymers. In 1999, AGC purchased the fluoropolymer resins and compounding division from ICI and prior to that, our company was operated through LNP Engineering Plastics. Our manufacturing plants are located in multiple Asian countries and in the United Kingdom. Custom made products are produced in Thorndale, Pennsylvania. Sales and technical offices as well as local warehouses are located in strategic regions throughout the world.

Our Commitment to Quality

- As an ISO 9001 and 14001 registered and certified company, we embrace a Quality Philosophy of total dedication to continuous improvement. How we achieve this is by focusing on our customers' needs through partnerships and teamwork.
- We are committed to valuing your feedback as an opportunity to improve our processes, products and ultimately your satisfaction.

Our Pledge to the Environment: Chemistry for a Blue Planet

- AGC Chemicals is committed to creating a safe, secure, comfortable and environmentally friendly world with chemical technology and we have adopted this pledge as our company's vision. We are working to reduce environmental impact in two ways. First, by supplying the chemicals needed to make products that contribute to sustainability. Second, by developing and continually improving processes that save energy and prevent environmental pollution.



**Chemistry
for a Blue Planet**
AGC Chemicals

**For more information about our company, products and services,
please visit our website at www.agcchem.com**

- Compliance certifications
- Organizational affiliations
- Technical data, processing guidelines and recommendations
- Safe handling guidelines
- Brochures, news and tradeshow schedules
- Technical papers, webinars and announcements
- Blogs, presentations and videos
- Careers and community support

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The AGC Chemicals Business and Product Chain

AGC Chemicals boasts a remarkably integrated product chain, starting with basics obtained by electrolysis of brine and extending to a full array of fluorinated compounds.

Chlor-Alkali & Urethane Business

Chlor-Alkali



Urethane





Fluorine Chemicals & Speciality Business

Fluorine Chemicals

Tetrafluoroethylene

AsahiGuard® (Fluorinated water and oil repellents)

Asahiklin (Fluorinated solvents)

Fluon® PTFE (Fluoropolymers)

Fluon® PFA (Fluoropolymers)

Fluon® ETFE (Fluoropolymers)

AFLAS® (Fluoroelastomers)

Flemion® (Ion-exchange membranes)

AMOLEA™ (Refrigerants)

LUMIFLON® (Fluoropolymer resins for coatings)

Other Fluoro-Materials (eg. CYTOP™)

Filled PTFE Compounds

PFA Compounds

ETFE Compounds + Film

Melt Processable Compounds

Speciality

Fine Silica

Fine Chemicals and Intermediates



AFLAS®

Fluoroelastomers

AFLAS® fluoroelastomers are the materials of choice for products and systems that work in harsh environments and require high reliability. Alternating copolymers of tetrafluoroethylene and propylene, AFLAS FEPM Series impart unique properties over conventional FKM-type fluoroelastomers. AGC Chemicals Americas, Inc. also offers FKM and FFKM Series products for highly specialized applications where failure is not an option.

AFLAS fluoroelastomers are easily compounded by open mill and internal mixers. These compounds are then fabricated into finished parts and shapes using press molding, injection molding, extrusion and calendaring processes. AFLAS parts can be found in the oil & gas, chemical processing, heavy duty diesel, automotive, wire & cable, industrial, food handling and pharmaceutical industries to name a few.

Features

- Resistant to highly reactive organic and inorganic chemicals
- Excellent volume resistivity (greater than $10^{16} \Omega \text{ cm}$)
- Radiation resistance up to 2000kGy of gamma-ray radiation
- Unaffected by extended exposure to steam at high temperatures (except FKM)
- Continuous use at 230°C; 250°C and beyond for FFKM

Applications

- Packers and o-rings
- Engine seals and gaskets
- Oil and gear seals
- Shaft seals
- Wire & cable
- Diaphragms
- Fluoroplastic modifier
- Thin sheet
- Coatings & binders
- And more...



Fluon® ETFE Resins

Melt processable copolymers composed of tetrafluoroethylene and ethylene, Fluon® ETFE Resins offer superior physical toughness and adaptability to meet the ranging needs of simple, high quality, complicated and even high performance products. The fluoropolymers maintain stable mechanical and electrical properties while exposed to a wide temperature range from -200 °C to +150 °C. Superior tensile elongation and strength ensure no breakage by impact at room temperature. They are even resistant to low-temperature impact down to at least -80 °C. Tolerant to almost all chemical agents and solvents, these nonflammable resins conform to UL Standard 94V-0. ETFE resins are also resistant to ultraviolet light, making them suitable for outdoor use. A 16,000-hour accelerated weathering test (comparable to 30 years' exposure) produced almost no signs of film deterioration. Available in pellet or powder form, ETFE resins can be molded by extrusion molding, injection molding, blow molding and electrostatic coating. Fluon ETFE resin compounds are also available in a variety of color masterbatch concentrates, custom reinforcements or conductivity levels.

Modified ethylene/tetrafluoroethylene polymers, Low Melting ETFE resins have a melting point lower by approximately 30 °C to 40 °C than conventional ETFE materials, enabling processing over a wider temperature range with remarkably improved processability. Resins have higher flexibility and mechanical strength and can withstand flex of over 100,000 times. These low melting fluoropolymers also possess improved optical clarity and a higher limiting oxygen index (40% versus 31%) with an operating temperature of 180 °C. Using conventional extrusion and injection molding techniques, LM-ETFE resins can be processed at a wider range of temperatures due to their improved thermal stability and lower melting point. Rotomolding, rotolining and adhesive grades are also available.

Features

ETFE Resins:

- Continuous use temperature of 150 °C up to 200 °C
- Nonflammable material conforming to UL Standard 94V-0
- Show excellent chemical resistance to inorganic acids/bases and organic solvents
- FDA-compliant for Food Contact Notification (FCN) number 481
- Can be cross-linked with electron beam for increased toughness

LM-ETFE Resins:

- Higher limiting oxygen index (40% vs. 31%)
- Melting point lower than other ETFE materials (225 °C vs. 260 °C for most ETFE)
- Nonflammable material conforming to UL Standard 94V-0
- Higher transparency than conventional EFTE
- FDA-compliant for Food Contact Notification (FCN) number 481
- Can be cross-linked with electron beam for increased toughness

Applications

- Food industry
- Wire and cable coating
- Film and sheets
- Semiconductor and electronic components
- Tubing and pipe
- Valves, fittings and pump housings
- Electrostatic and rotolined vessel linings
- Fuel hoses

Copolymers of tetrafluoroethylene and a perfluorinated vinyl ether, Fluon® PFA Resins can be used over a wide range of temperatures from extremely low to high (-200 °C to 260 °C) without losing excellent chemical, electrical, mechanical and surface properties. PFA resins retain many inherent characteristics and similar properties of PTFE, but can be processed using conventional thermoplastic techniques such as extrusion molding, injection molding, blow molding and electrostatic powder coating.

With an oxygen index of 95% or better, these noncombustible resins can be used in various fields. Offering outstanding weatherability (no reduction or deterioration by direct sunlight, wind, rain and exhaust gas), characteristics do not change when exposed to the outdoors for a long period of time. Fluon® PFA resin compounds and adhesive grades are also available.

Features

- Used over a range of temperatures (-200 °C to 260 °C)
- Low smoke and flame characteristic conforming to UL 94V-0
- Weather and aging resistance
- Chemically stable material not attacked by most chemicals
- Low friction and non-stick characteristics
- Available in 1/8" pellets

Applications

- Tubing and pipe
- Film and sheets
- Valves, fittings and housings
- Blow-molded bottles
- Wire and cable
- Tape and laminates

Fluon® PTFE

Fluon® Micropowders

Highly cost-effective materials, Fluon® PTFE (Polytetrafluoroethylene) Resins are the most widely used fluoropolymers found in many areas of modern life. Resin properties keep insulation thickness to a minimum while tolerating a wider range of temperatures (-180 °C to 260 °C) than other insulators. Inert to almost all chemicals, PTFE resins also offer good resistance to most solvents. They are suitable for outdoor use with no detriment to properties from extended exposure to the elements.

- **Coagulated dispersions (CD):** White, free-flowing powders made by coagulating dispersions of PTFE
- **Aqueous dispersions (AD):** Small, negatively charged PTFE particles that impregnate substrates to impart PTFE properties
- **Granular powders (G):** Fine powders that are molded by first pressing and heating, then shaped into sheets, rods or billets

Fluon® Micropowders are lubricants milled to a very fine powder while retaining excellent lubricity properties. These powders can be compounded in rubber and plastics or dispersed in liquids or greases to improve friction and wear properties of the base material.

Many grades are used in non-stick surface applications, as extreme pressure additives in oil and grease, and in solvent applications. Lubricant powders offer great advantages over conventional anti-scuff agents in printing inks, permitting quick solvent release, faster printing speeds, and excellent print gloss.

Features

- **CDs:** suitable for extrusion of thin flexible sections
- **ADs:** extreme chemical inertness and excellent non-stick properties
- **G:** suitable for compounding and various molding techniques

Applications

- Tape and textile membranes (CD)
- Hose, tubes, rods and wire coatings (CD)
- Coatings, binders (AD)
- Additives for resins and paints (AD)
- Compound with fillers (G)
- Sheets, rods, billets and other general molded shapes (G)

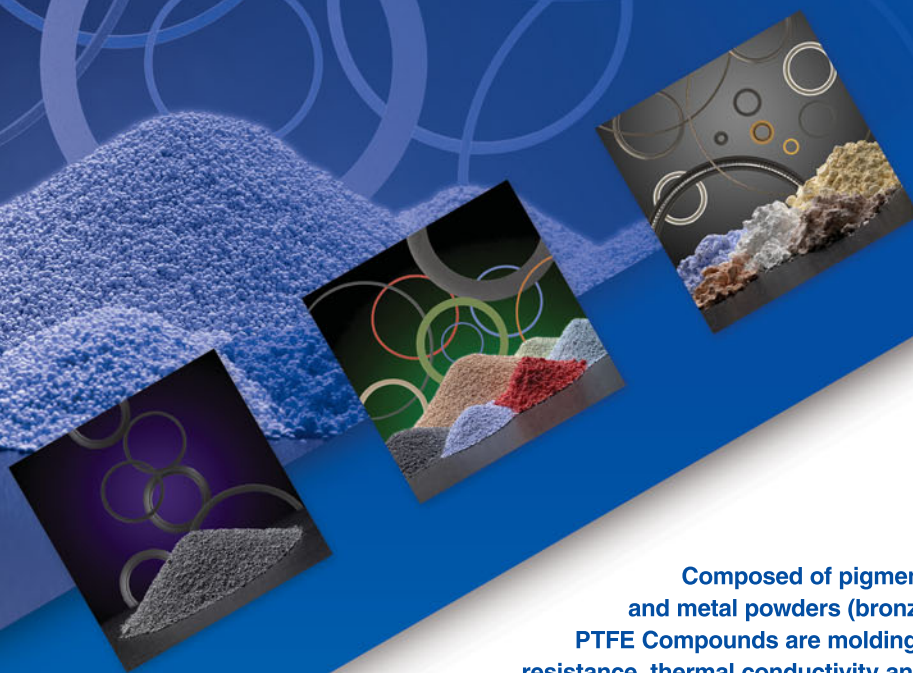
Features

- High thermal, chemical and weather resistance
- Improved wear resistance, lubricity, non-stick and frictional characteristics of host media
- Can be added to coatings that contact food and drink
- Excellent dielectric

Applications

- Anti-scuff agent for ink and paint
- Thermoplastic and elastomers additive
- Additive to coatings and finishes
- Oil and grease additive
- Dry lubricant

Fluon® Filled PTFE Compounds



Composed of pigments and fillers such as glass, carbon, graphite and metal powders (bronze and molybdenum disulfide), Fluon® Filled PTFE Compounds are molding powders that enhance wear resistance, creep resistance, thermal conductivity and electrical conductivity over virgin PTFE resins. Compounds also preserve several properties unique to PTFE including low coefficient of friction, excellent chemical resistance and a wide service temperature range.

Glass-filled PTFE, the most universally used filled PTFE compound, can be utilized at service temperatures from -268 °C to +260 °C in chemical service ranging from liquid oxygen to fuming nitric acid, in severe wear pads for railway cars, and for self-lubricating compressor rings for non-aluminum cylinders. The most common applications include bearings, gaskets, V-rings, O-rings, back-up rings, hydraulic ring seals, non-lubricated compressor rings, valve seats, valve liners, swivel liners, thrust washers, lip seals, standoff insulators and feedthrough insulators. Pelletized compounds, produced in an environmentally friendly manner, are easily processed in automatic molding equipment and are used primarily in automotive parts. Non-pelletized compounds are used in applications that demand the highest mechanical strength.

Features

Pelletized (Free-Flow) Compounds:

- Higher bulk density and mold flow properties
- Improve key physical properties and product uniformity
- Easily processed in automatic molding equipment

Non-Pelletized (Low-Flow) Compounds:

- Manufactured in powder form
- Suitable for applications that demand the highest mechanical properties such as thick-walled billets

Applications

- Pipe and valve seals
- Bearings, gaskets, valve seals and sealing rings
- Crankshaft seals
- Machined parts used in chemical processing and oil exploration



Fluon® Melt Processable Compounds



Fluon® Melt Processable Compounds are based on copolymer resins FEP, ETFE, ECA, PFA, PVDF, MFA, ECTFE and PCTFE.

Extending fluoropolymer properties of chemical resistance, toughness and lubricity, standard products are free of cadmium, hexavalent chromium and lead. **There are eight Fluon® melt processable compound product types, all manufactured to precise specifications:**

- Color concentrates
- Foam concentrates
- Cross-linkable compounds
- Conductive/anti-static compounds
- Reinforced compounds
- Lubricated compounds
- Flexible AR compounds
- Adhesive compounds

Applications

- Wire and cable insulation
- Injection molded parts
- Film and sheet
- Pipe, tubing and multilayer
- Pump housings, packings and valves
- Electronic components
- Linings and modified surfaces
- Tapes and wraps

Features

- **Color concentrates:** Superb surface finish, color consistency and dispersion even at high-speed extrusion rates.
- **Foam concentrates:** Designed for gas injection foaming used for manufacture of LAN and coaxial cables. The properties of a foamed insulation help minimize signal loss, enhance high-speed data transmission, and save weight and material.
- **Cross-linkable compounds:** Increase mechanical properties such as scrape abrasion, cut-through resistance and tensile strength, especially at elevated temperatures.
- **Conductive/anti-static compounds:** Control heat and static electricity. Wire coated with a conductive fluoropolymer may be used for freeze protection and process temperature control.
- **Reinforced compounds:** Incorporate glass and mineral fillers for enhanced dimensional stability, abrasion resistance, shrinkage resistance and thermal conductivity characteristics.
- **Lubricated compounds:** Contain lubricious fillers such as PTFE and FEP. Used on car or truck brake “push-pull” cables where a low-friction, abrasion-resistant liner surface is needed.
- **Flexible AR compounds:** Modified ETFE and a proprietary fluoroelastomer maintain many desirable properties of ETFE in a more flexible form. Heat resistance can be enhanced by radiation curing and can be cross-linked without the presence of curing agents or co-agents.
- **Adhesive-grade compounds:** Are modified ETFE used in applications requiring strong adhesion to polyamide polymers, especially nylon 12. These compounds also exhibit high permeation resistance to many fluids and gases, especially automotive fuels.

AsahiKlin Fluorinated Solvents

AE-3000 Series

AMOLEA™ AT2

AsahiKlin AE-3000 series of environmentally fluorinated fluids were developed by AGC Chemicals as the solvents for tomorrow. They are modern cleaning agents having no flash point, no Ozone Depletion Potential (ODP), low Global Warming Potential (GWP) and low surface tension.

These solvents are approved for uses as a precision cleaning solvent, defluxing agent for electronic circuitry, carrier solvent for silicone and fluorinated lubricants and as a moisture displacement fluid. AE-3000 formulations can be used in most existing vapor degreasing equipment with little or no modification.

AMOLEA™ AT2 is an improved fluorinated precision cleaning solvent with excellent solvency in a wide variety of press oils, cutting oils, silicone oils, refrigerant oils, greases, asphalt pitches and fluxes used in the electronics industry.

AMOLEA AT2 has no ozone depletion potential, has less global warming potential than our existing Asahiklin AE-3000 series products, is non-flammable, and is energy efficient due to its low latent heat of vaporization. AMOLEA AT2 is a suitable alternative to 3M Novec products, Chemours Vertrel offerings, n-propyl bromide and trichloroethylene.

Features

- Zero ozone depletion potential (ODP)
- Minimal global warming potential (GWP)
- Recyclable and recoverable by simple distillation
- Chemically and thermally stable
- Nonflammable (no flash point)
- Superior drying
- Low surface tension and viscosity
- Broad compatibility with most plastics, elastomers, substrates and metals

Applications

- Dewatering agents
- Carrier solvents
- Metal cleaning solvents
- Defluxing/electronics cleaning

AsahiGuard E-SERIES



AsahiGuard E-SERIES products are fluorinated water/oil repellents that contain no PFOA (at detectable levels), longer chain PFCs or their precursors. Drawing on fluorine's extraordinary properties, these specialty chemicals provide excellent protection and durability against water, oil and dry soil without changing the texture, color or breathability of a fabric or material. Surfaces treated with AsahiGuard E-SERIES products resist dirt and, when they do become dirty, are easy to clean. That's because the very low surface tension of AsahiGuard E-SERIES products makes oils, stains and water bead rather than soak into material. When applied, these coatings can keep materials such as fabrics, paper, leather, carpet, uniforms, stone, and tile looking new longer. They can also be used in combination with other agents such as starches, paper strengthening agents and fixative agents.

Asahi Guard E-SERIES products have appropriate clearances in the U.S. (Toxic Substance Control Act), in the EU and in Japan (Chemical Substances Control Law). They also comply with Food Sanitation Law in Japan and are approved by the FDA in the United States and BfR* in Europe for food packaging use.

*Bundesinstitut für Risikobewertung -- Federal Institute for Risk Assessment



Features

- Durable against high temperatures and varying weather conditions
- Adaptable to different materials
- Excellent dry soil resistance
- Protect textiles without affecting color or texture
- Water and stain repellent properties
- Easily cleaned
- No PFOA (at detectable levels) and low carbon number of 6 (lower than standard fluorinated water and oil repellents)

Applications

- High-quality barrier to water, oil and grease for paper and board
- Add stain and water resistance to textiles
- Heavy-duty water repellent for tents, filters, partitions and similar items
- Extend durability in food wrapping materials, trays, cooking paper and packaging
- Protection for stone & tile

LUMIFLON®

Fluoropolymer Resins



LUMIFLON® is the first solvent-soluble fluoropolymer for coatings that can be cured under room temperature conditions. Users have a choice of curing conditions from ambient to high temperatures (5 °C to 230 °C).

Used as a topcoat, LUMIFLON-based coatings maintain excellent appearance on buildings and other structures and protect steel and concrete from sunshine, UV rays, wind, rain and corrosion caused by water, oxygen, chloride and even acid rain. A transparent fluoro resin, LUMIFLON makes both clear and enamel coatings possible. It also can attain gloss retention of over 80%. Ultra-durable against the effects of weather, LUMIFLON-based coatings reduce total maintenance and cost associated with repair and cleaning. High durability of the fluoropolymer is based on its C-F bond energy that is much larger than the energy of UV rays in sunlight. LUMIFLON fluoropolymer resins are available in a variety of finishes from matte to high gloss, in a range of more than 230 colors, and in environmentally friendly grades such as emulsion, powder and solvent.

Features

- Outstanding UV light, chemical and corrosion resistance
- Long-lasting color and gloss retention
- Excellent weather resistance compared to traditional top coatings
- Soluble in many common solvents
- Curable at room temperature

Applications

- Metal: bridges, storage tanks, water towers
- Transportation: airplanes, trains, automobiles, marine
- Architectural coatings, both shop- and field-applied
- Coil coatings
- Industrial maintenance
- Plastic coatings
- Solar panels, wind towers



Fluon® ETFE Film



Made with AGC's ETFE, this high-performance fluoropolymer film possesses exceptional weatherability, thermal stability, transparency and anti-fouling properties, making it ideal for a wide range of applications in industries as diverse as electronics, aerospace, solar cells, semiconductors, interior design and building architecture.

The film has a thermal melting point of 260 °C and a linear thermal expansion coefficient of 9.4. High tensile elongation (200 – 510) and superior tear strength mean that Fluon® ETFE fluoropolymer film will not easily rip or scratch over time. Light transmission is higher than 90%, allowing more penetration of sunlight than ordinary glass, which is in the 80% range. ETFE film is also lighter than glass and highly resistant to soil, making it easy to use as a construction material.

The Allianz Arena logo, featuring the word "Allianz" in blue, a circular emblem with a stylized building, and the word "Arena" in blue, all set against a background of a white, diamond-shaped architectural pattern.

Features

- Withstands temperatures over 200 °C
- Easily cleaned simply by wiping its surface
- Heat and chemical resistant
- Nonflammable
- Non-sticking
- Superior tear strength
- Light transmission is higher than 90%

Applications

- Release film for electronics fabrication and RFP
- Protective film for solar cells
- Roofing and architectural facades
- Interior finishing
- Lamination film for wallpaper

F-CLEAN® Greenhouse Film



A thin ETFE film, F-CLEAN® Greenhouse Film is the preferred covering material for horticultural greenhouses as it lets in more light than glass, PE film, polycarbonate and PMMA sheets. By allowing maximum UV light transmission (up to 94%), F-CLEAN ensures earlier harvest of better quality fruit and vegetables and more colorful flowers.

Low surface energy gives F-CLEAN film non-stick and self-cleaning properties so greenhouses remain clean naturally with rain or snow. And snow will automatically slide off, saving the cost of labor-intensive and expensive snow removal. No condensation will ever fall onto plants as F CLEAN has excellent anti-dripping properties. Highly durable, this ETFE film has proved to protect greenhouses for more than 25 years without showing signs of deterioration. Grades range in thickness from 60 µm (2.4 mil) to 100 µm (4 mil).

Features

- Light transmittance up to 94%
- Translucent to ultraviolet light
- Anti-dripping and self-cleaning properties
 - Very high reflection and refraction rates
 - High tensile strength compared to other plastic films
 - Low degradation from sunlight and heat (more than 25 years without any deterioration)

Applications

- Covering material for horticultural greenhouses
- Diffused versions restrict light intensity for sensitive crops
- Double layering of covered materials promotes heat retention, reducing the cost of heating
- Ultraviolet block series controls amount of ultraviolet light

Fine Silica Products

Fine Silica Products are resin additives that enhance the surface smoothness and dispersion of the media into which they are added. On a molecular level, these particles are perfectly spherical in shape and move more freely to provide a superior tactile feel. Fine silica products provide catalyst support for polymer manufacturing, cosmetics, film and synthetic leather, serve as a matting agent for paints, and act as filler for coated printing papers.

We offer five grades of fine silica products: **Sunspera™**, **Solesphere™**, **M.S. GEL™**, **Sunlovely™**, and **Silica Gel**. Our fine silica products are available in mean particle diameters from 1.8 µm to 200 µm and with oil absorption capacities from 30 ml/100 g to 400 ml/100 g to suit any application. Surface areas are available from 40-800 M²/g. The ability to select the sphere size, pore size and spherical structure of fine silica products makes it possible to provide long-lasting, physiocochemical-specific characteristics to specific media.

Features

Sunspera™:

- Precisely designed pore structure, spherical shapes and size distribution
- Improved morphology of finished polymers and optimizes production

Solesphere™:

- Particles: 3 - 20 µm
- Superior moisture absorption capacity: 30 - 400 ml/100 g

M.S. (Microsphere) Gel™:

- Particles: 2 - 200 µm
- Specific surface: 30 - 900 m²/g, pore size (4 - 200 nm)
- Low back pressure and good separation performance

Sunlovely™:

- Ultra-thin scaly silica particles with high transparency
- Primary particle is less than 0.1 µm
- Two forms: powder and slurry dispersed in water

Silica Gel:

- 1.7 mm to 4.5 mm desiccant for packaging and industrial applications
- High grade desiccant consisting of SiO₂

Applications

Sunspera™:

- Catalyst supports for manufacturing PE and PP resins

Solesphere™:

- Ingredient for cosmetics
- Matting agent and surface modifier
- Dehumidifying agent
- Filler for ink-jet print paper and more

M.S. (Microsphere) Gel™:

- Process chromatography, separation and purification
- Catalysts supports and resin fillers
- HPLC packings and more

Sunlovely™:

- Filler for cosmetics and paint
- Release controller for fragrance and drug delivery agents
- Binder for ceramics and inorganic coating materials
- Humidity control, absorption and deodorization binder and more

Silica Gel:

- Food and industrial applications
- Process chromatography
- Catalysts supports

Fine Chemicals for Pharmaceuticals and Agrochemical Compounds

Asahi Glass has the unique position as a pharmaceutical and agrochemical intermediate producer with expertise in fluorine chemistry. Fluorinated compounds are known to possess bioactivity often considered useful, and our more than twenty years of experience in this area has furthered our technology base.

Our experience has expanded our services to custom manufacturing of fluorinated compounds and others. Not only do we provide various fluorine-containing building blocks such as fluoroanilines or fluoro benzoic acids, but, combined with other general reactions such as hydrogenation, Friedel-Crafts reaction, bromination, nitration and Grignard reaction, we supply more advanced intermediates and bulk pharmaceuticals. We also specialize in conducting ultra low temperature reactions, and do GMP production as well. Our Fine Chemicals can be found in a variety of markets including the pharmaceuticals, agrochemicals and polymers markets.

Fluoro Intermediates

These additional product offerings are mainly based on perfluorohexyl chemistry. Major commercial product offerings are perfluorohexyl iodide, 2-perfluorohexyl ethyl iodide and 2 perfluorohexyl ethyl methacrylate.

Features

Fine Chemicals

for Pharmaceuticals and Agrochemical Compounds:

- Variety of fluorinated building blocks and fluorination technologies
- Handling of F₂ gas and fluorinated compounds
- cGMP facility and API manufacturing
- Ultra Low Temperature by -100 °C
- High quality C3 compounds
- Metallocene co-catalysts

Fluoro Intermediates:

- C6 compounds made with high purity and consistent quality

Applications

Fine Chemicals

for Pharmaceuticals and Agrochemical Compounds:

- Advanced pharmaceutical and agrochemical intermediates
- Mono- and di-fluorinated heterocyclics
- Finished APIs and key products under GMP
- Polyolefins

Fluoro Intermediates:

- Polymer synthesis for fluorinated chemistry production

Polyols for Polyurethanes

Polyether polyols are key components used in the production of polyurethanes. AGC sells two types in the Americas: low monol polyether polyol (Preminol®) and silane modified polyether (Excestar®).

These polyols address major polyurethane applications for flexible and rigid polyurethane foams, coatings, adhesives, sealants and elastomers. AGC uses integrated production of the raw materials polypropylene glycol (PPG) and propylene oxide that allows for very few impurities but a wide range of finished products. These polyols range from low molecular weight products to specialty products with molecular weights exceeding 20,000.

AGC polyols are routinely used in a wide variety of applications such as: flexible foam for bedding mattresses and upholstered furniture, multiple automotive and transportation applications from car seats to dashboards, rigid board stock in roofing, spray foam insulation in walls of buildings, homes and refrigerators, plus many types of adhesives and sealants. Our polyols' chemistry is such that it reduces environmental impact and global warming potential (GWP).



Features

Preminol (Low Monol Polyether Polyol):

- High molecular weight
- Low by-product polyether polyol
- Results in high elongation materials
- Provides quick curing and good hardening
- Allows for high durability and low viscosity

Excestar (Silane-modified Polyether)

- Based on ultra-high molecular weight polyol technology
- Liquid polyether polymer with a hydrolyzed silyl group on the end
- Excels in hardness
- High strength and elongation
- Low viscosity

Applications

Preminol®:

- CASE (coating, adhesive, sealant and elastomer) and polyurethane foam
- Flexible foams (mattresses, cushions, upholstered furniture)

Excestar:

- Sealing material for construction
- Elastic adhesive
- Coating material and other general sealing uses

CYTOP™

Amorphous Fluoropolymers

CYTOP™ amorphous fluoropolymers have the same excellent chemical, thermal, electrical and surface properties as conventional fluoropolymers like PTFEs, but also exhibit high optical transparency and good solubility in specific fluorinated solvents. CYTOP fluoropolymers are like transparent PTFEs.

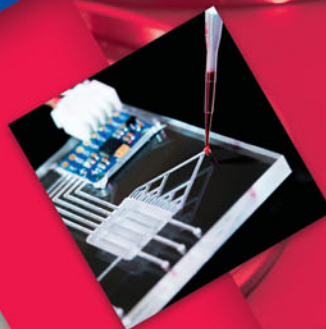
The thermoplastic characteristics of CYTOP, coupled with its transparency, solubility, insulation properties, resistance to chemicals, and oils/water repellency, make it a popular choice for coating electronic materials. CYTOP exhibits low refractive index, low coefficient of optical dispersion and good lamination properties. CYTOP fluoropolymers are available on request in various solvents (110 °C – 180 °C) and at various concentrations.

Features

- Transparency
- Mold release
- Electric insulation
- Water and oil repellency
- Chemical resistance
- Moisture-proof
- Low refractive index
- Low coefficient of optical dispersion
- Good lamination properties

Applications

- Inter-level dielectric layer for semiconductors
- Pellicles
- Photo mask covers
- Optical film
- Anti-reflective coatings
- Graded-index optical fibers



Flemion® Ion Exchange Membranes

FLEMION® is a fluorinated ion exchange membrane used to produce caustic soda/caustic potash in electrolysis plants. FLEMION membranes achieve substantial energy savings because they require less electrical current to decompose the purified brine. In addition to saving energy, FLEMION membranes minimize the influence of brine impurities and enable manufacturers to maintain 97-98% electrical current efficiency.

FLEMION is used in the electrolyzers at electrolysis plants that decompose brine. It plays a key part in manufacturing caustic soda (sodium hydroxide)/caustic potash (potassium hydroxide), chlorine, and hydrogen-basic chemical products. These chemicals are key ingredients of many products used in our daily lives.

Features

- Energy savings from low electric resistance
- High current efficiency
- Stable performance due to less impurity influence
- High durability and robustness
- Fewer blemishes and reduced pinching issues

Applications

- Electrolyzers in electrolysis plants
- Manufacturing caustic soda
- Manufacturing caustic potash
- Manufacturing chlorine
- Manufacturing hydrogen-basic chemical products





Business and Technical Center

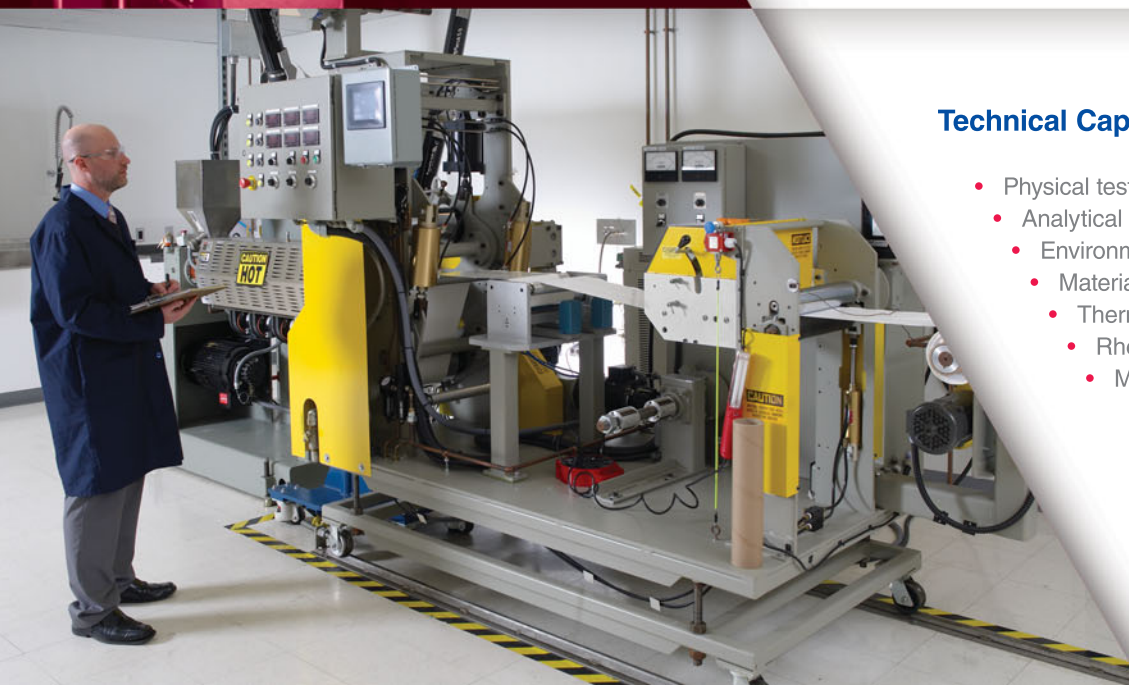
Our Business and Technical Center in Exton, PA is the North and South American business head office and center of technology for our fluoropolymer resins, custom compounds and specialty materials.

Recently we completed a \$1 million dollar upgrade to our R&D laboratories and continue our investment with future renovation plans that will allow us to bring cutting edge, value-added solutions to our customers.

AGC Chemicals offers full support services including business and market development, customer service, technical service, application development and research and product development.

Technical Capabilities

- Physical testing
- Analytical testing
- Environmental studies
- Material identification
- Thermal analysis
- Rheometry
- Microscopy



Dedicated Services for New Application Development and Product Enhancement

- **Fluon® Filled PTFE Compounds:** formulating and compounding samples, compression and automatic molding, instrumented wear testing
- **Fluon® Melt Processable Compounds:** formulating and compounding samples, injection and compression molding, extrusion of strands/pellets, films and profiles, color-matching and rheological analyses
- **AFLAS Fluoroelastomers:** formulating and compounding samples, compression molding, extrusion and small batch processing, fluid compatibility testing, curing techniques
- **LUMIFLON® Fluoropolymer Resins:** paint formulating with weathering and physical performance property testing on metal, wood, concrete and plastics, extrusion of powder coatings
- **AsahiKlin® Fluorinated Solvents:** sample preparation, vapor degreasing services, application development and customer support
- **AsahiGuard E-Series Fluorinated Water/Oil Repellents:** material development, customer support and application simulation for coated paper, stone and tile protection, technical textiles and nonwovens production, exposure and resistance testing
- **Flemion Ion Exchange Membranes:** brine/membrane analysis, sample preparation, history and recordkeeping, total organic carbon (TOC) testing, induced couple plasma (ICP) testing and ion chromatography (IC)

Examples of Testing Capabilities

Physical Testing:

- Tensile elongation/tear
- Flex testing
- Instrumented wear testing
- Dynamic Mechanical Analysis (DMA)
- Compression set
- Impact and Hardness
- Abrasion

Environmental Studies:

- Heat aging
- Fluid immersion
- Weatherability

Material Identification:

- Gas chromatography
- Infrared (FTIR) with microscope
- UV/VIS/Near IR
- SEM/EDAX
- Color matching
- Filler analysis

Thermal Analysis:

- Differential Scanning Calorimetry (DSC)
- Thermal Gravimetric Analysis (TGA)
- Thermal Mechanical Analyzer (TMA)

Rheometry:

- Melt indexing
- Capillary
- Thermoset (RPA 2000P)

Analytical Testing (in-service conditions):

- Thermal
- Chemical
- Dynamic
- Static



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Exton

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