


AGC



Fluon[®] Filled PTFE
Compounds



 **Fluon[®] FPC**
Filled PTFE Compounds



AGC Chemicals Americas, Inc. offers the world's broadest range of high performance fluorochemicals including fluoropolymer resins, custom compounds, fluoroelastomers and specialty chemicals. We are the largest, long-standing custom compounder in the world and have been compounding PTFE and other fluoropolymer resins for over 50 years, most recently as a wholly-owned subsidiary of the Asahi Glass Company in Japan.

In 1999, Asahi Glass Company, Ltd. purchased the fluoropolymer resins and compounding division from ICI Fluoropolymers to become Asahi Glass Fluoropolymers, Inc., which then merged in 2004 with Asahi Glass America to become AGC Chemicals Americas, Inc. Prior to that, our compounding plant was operated through LNP Engineering Plastics. Our plant is located in Thorndale, Pennsylvania.

Our Commitment to Quality

As an **ISO 9001** and **14001** registered and certified company, we embrace a Quality Philosophy of total dedication to continual 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.

Fluon® Filled PTFE Compounds

Fluon® Filled PTFE Compounds Give You Greater Value and Performance

PTFE can be tailored to meet specific performance requirements by the addition of fillers. When composed of colorful pigments and fillers such as glass, carbon, graphite and metal powders, Fluon® Filled PTFE Compounds (FPCs) can enhance wear and creep resistance, as well as thermal and electrical conductivity over virgin PTFE resins. Our compounds, suited for compression molding, also preserve several properties unique to PTFE including low coefficient of friction, excellent chemical resistance and a wide service temperature range. We offer two types of filled PTFE compounds: low flow (non-pelletized) and free flow (pelletized).

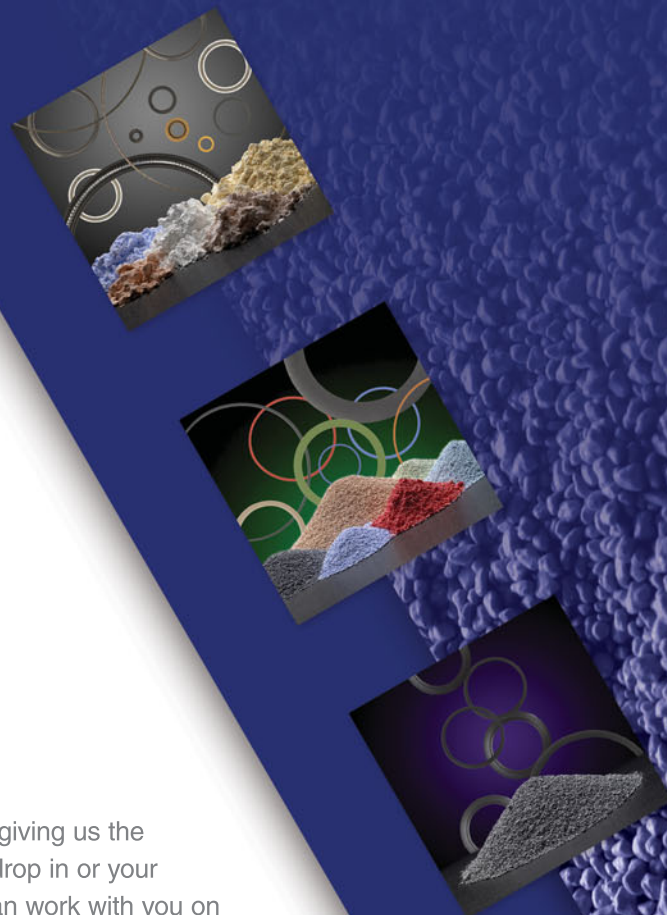
AGC Chemicals can compound any PTFE in the world

AGC Chemicals has extensive experience in compounding PTFE giving us the capability to successfully compound any PTFE in the world, as a drop in or your specified type. Because we are a custom compounder, we also can work with you on various formulations that will meet your desired specifications or application parameters.

Our low flow and free flow compounds are engineered for high performance and consistent quality

Non-pelletized or “**low flow**” compounds are manufactured in powder form and are used in applications that demand the highest mechanical properties. Applications include thick-walled billets that are typically machined into parts used in the chemical process and petroleum industries as bearings, seals and gaskets. Low flow FPCs are packed out in 41 gallon fiber drums containing 130 lbs net resin weight.

Pelletized or “**free flow**” compounds, produced in an environmentally friendly manner, are manufactured in pellet form to increase bulk density and mold flow properties. These compounds are easily processed in automatic molding equipment and readily flow from standard design hoppers and other bulk feeding equipment. They are engineered to improve key physical properties and product uniformity. Free flow characteristics allow for fast through-put in high volume manufacturing processes and are used primarily in automotive parts such as self-lubricating bearings, gaskets, valve seals and sealing rings. Free Flow FPCs are packed out in heavy duty corrugated boxes with 35 lbs net resin weight per box.



Common Fillers We Use

- Glass
- Carbon
- Graphite
- Carbon Fiber
- Molybdenum Disulfide (Moly)
- Bronze
- Mineral
- Polyphenylene Sulfide (PPS)
- Polyimide
- Ekonol® or Polyester

| Attributes | Glass | Carbon | Graphite | Carbon Fiber | Moly | Bronze | Mineral | PPS | Polyimide | Ekonol® |
|--|-------|--------|----------|--------------|------|--------|---------|-----|-----------|---------|
| Wear Resistance | X | X | X | X | X | X | X | X | X | X |
| Creep Resistance | X | X | | | | | X | X | | |
| Compressive Strength (DUL) | X | X | | X | | X | X | | | |
| Chemical / Electrical Inertness | X | | | | | | X | X | X | X |
| Heat Dissipation | | X | | | | X | | | | |
| Low Permeability | | X | | | | | | | | |
| Lubricity | | | X | | X | | | | X | |
| Low Coefficient Of Friction | | | X | | X | | | | X | X |
| Reduces Torque On Start-Up | | | | | X | | | | | X |
| Thermal Conductivity | | X | | | | X | | | | |
| FDA Compliant | | | | | | | X | | | |
| Thermal / Dimensional Stability | | | | | | | | X | | X |
| Deformation / Extrusion Resistance | | | | | | X | | X | | |
| Improves Abrasion Properties | X | X | | | | | X | X | X | X |
| High Temperature Resistance | | | | | | | | | X | X |
| Can Be Combined w/Other Filters For Improved Physical Properties | X | X | X | X | X | X | | X | X | |
| Applications | Glass | Carbon | Graphite | Carbon Fiber | Moly | Bronze | Mineral | PPS | Polyimide | Ekonol® |
| Self-lubricating Bearings | X | | | | X | X | | | X | X |
| Gaskets (Static-dissipating, Other) | X | X | X | | X | X | | | | |
| Seals (All Types) | X | | | | X | X | X | X | X | X |
| Compressor Rings | X | X | X | | X | X | X | X | X | X |
| Valve Seats / Liners | X | X | X | | X | X | X | | | |
| Rings (V.O, Backup) | X | | | | X | | | | | |
| Piston Rings / Seals | X | X | X | | X | X | | | X | |
| Big-billet / Skive Sheet | X | X | | | | | X | | | |

Supply Chain Management Solutions created with your needs in mind

AGCCA produces standard grades of FPCs as well as custom blends. A large assortment of products is stocked in our strategically located warehouses throughout the USA – PA, TX, IL and CA. By maintaining supply at our regional warehouses, we shorten transit times to get you what you need when you need it, and in some cases same day delivery service. Furthermore, as a custom compounder we offer make to order (MTO) custom blends based on your specifications/pigment match, using efficient production processes that also greatly reduce lead times and changeovers.

Our manufacturing processes are environmentally friendly and allow for improved product consistency and quality. We also offer our customers optimized freight and ergonomic packaging solutions to keep transit costs down and safety as a priority.

A dedicated and cross-functional Customer Service staff as well as knowledgeable Technical Sales Representatives will support your business and strive to understand your requirements to ensure your success.



Standard Product Offerings and Comparison Data

| Product Description | Tensile Strength PSI | Tensile Elongation % | Specific Gravity |
|----------------------------------|-------------------------|-------------------------|------------------|
| Low Flow (Non-pelletized) | | | |
| FC 103 (15% Glass Fiber) | 3600 | 250 | 2.20 |
| FC 105 (25% Glass Fiber) | 2600 | 220 | 2.22 |
| FC 172 (5% Glass / 5% Moly) | 4400 | 270 | 2.23 |
| FC 174 (15% Glass / 5% Moly) | 3600 | 220 | 2.26 |
| FC 111 (5% Moly) | 3900 | 250 | 2.21 |
| FC 122 (10% Graphite) | 3600 | 230 | 2.14 |
| FC 123 (15% Graphite) | 3100 | 200 | 2.13 |
| FC 133 (15% Carbon) | 3300 | 225 | 2.12 |
| FC 144 (40% Bronze) | 4100 | 250 | 3.08 |
| FC 146 (60% Bronze) | 3000 | 200 | 3.91 |
| FC 182 (55% Bronze / 5% Moly) | 2300 | 130 | 3.64 |
| FC 15 Min (15% Mineral) | 3500 | 250 | 2.23 |
| Polycomp 160 (10% Ekonol®) | 3600 | 290 | 2.04 |
| Polycomp 158 (10% PPS) | 3900 | 300 | 2.03 |
| FC 132.3 (10% Carbon Fiber) | 3400 | 235 | 2.11 |

The information provided herein is related only to the specific product designated and may not be applicable where such product is used in combination with any other materials or in any process.

NO REPRESENTATION OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE, ARE MADE HEREUNDER.

The user of this product has the sole responsibility to determine the suitability of the product for any use and manner of use intended. This document may be revised after its issuance, and the user is advised to use the latest revision.

| Product Description | Tensile Strength PSI | Tensile Elongation % | Specific Gravity | Bulk Density Gr/Liter | Shrinkage % |
|-------------------------------|-------------------------|-------------------------|------------------|--------------------------|----------------|
| Free Flow (Pelletized) | | | | | |
| FC 403 (15% Glass Fiber) | 3100 | 260 | 2.18 | 825 | 1.80 |
| FC 405 (25% Glass Fiber) | 2200 | 200 | 2.19 | 830 | 1.40 |
| FC 472 (5% Glass / 5% Moly) | 3700 | 260 | 2.23 | 800 | 2.55 |
| FC 474 (15% Glass / 5% Moly) | 3000 | 200 | 2.27 | 800 | 2.10 |
| FC 411 (5% Moly) | 3500 | 220 | 2.21 | 800 | 2.50 |
| FR 22 (10% Graphite) | 2800 | 200 | 2.14 | 775 | 2.20 |
| FC 423 (15% Graphite) | 1900 | 120 | 2.11 | 650 | 2.20 |
| FC 433 (15% Carbon) | 2800 | 150 | 2.10 | 740 | 1.90 |
| FC 444 (40% Bronze) | 3600 | 250 | 3.09 | 1150 | 2.00 |
| FC 446 (60% Bronze) | 2500 | 120 | 3.74 | 1350 | 1.70 |
| FC 482 (55% Bronze / 5% Moly) | 2500 | 85 | 3.69 | 1350 | 1.80 |
| FC 15 Min SPL (15% Mineral) | 3100 | 250 | 2.19 | 800 | 2.40 |
| Polycomp 460 (10% Ekonol®) | 3300 | 300 | 2.04 | 670 | 3.00 |
| Polycomp 458 (10% PPS) | 3500 | 280 | 2.03 | 560 | 3.80 |
| FC 432.3 (10% Carbon Fiber) | 3400 | 270 | 2.11 | 690 | 1.40 |

***We can test for other data points such as coefficient of thermal expansion, wear, and compressive strength.**

Comprehensive Technical Solutions

At our state of the art technical center in Exton, Pennsylvania, AGC Chemicals offers personalized technical support by our industry experts with decades of experience. The technical facility is located in proximity to our production plant, which allows us to align our engineering resources thereby enhancing our compounding solutions for our customers.

Application development and product enhancement

- Formulating and compounding samples
- Compression molding equipment
- Automatic molding machine

Examples of testing capabilities for Fluon® FPCs

- **Physical testing**
 - Tensile strength and elongation
 - Instrumented wear testing
 - Hardness
 - Deformation under load
- **Thermal Analysis**
 - Differential Scanning Calorimetry (DSC)
 - Thermogravimetric Analysis (TGA)
 - Thermal Mechanical Analysis (TMA)

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

- Compliance certifications
- Organizational affiliations
- Technical data and MSDS for standard product grades
- Processing guidelines, recommendations and safe handling guidelines
- Brochures, news and tradeshow schedules
- Technical papers, webinars and announcements

AGC Chemicals Europe, Ltd.

PO Box 4
Thornton Cleveleys
Lancashire FY5 4QD United Kingdom
Tel: +44 (0) 1253 861951
Fax: +44 (0) 1253 861950
www.agcce.com

**AGC Chemicals
Asahi Glass Co., Ltd.**

Shin-Marunouchi Bldg, 1-5-1 Marunouchi
Chiyoda-ku, Tokyo 100-8405 Japan
Tel: +81-3-3218-5875
Fax: +81-3-3218-7856
www.agc.com

AGC Chemicals

Chemistry for a Blue Planet

AGC Chemicals Asia Pacific Pte., Ltd.

460 Alexandra Road, #30-02
PSA Building
119963 Singapore
Tel: +65-6273-5656
Fax: +65-6276-8783

AGC Chemicals Trading (Shanghai) Co., Ltd.

Room 2307-2308, Rui An Plaza
333 Middle Huai Hai Road
Shanghai, 200021 China
Tel: +86-21-6386-2211
Fax: +86-21-6386-5377

AGC Chemicals Americas, Inc.

Thorndale Plant

255 South Bailey Road
Downingtown, PA 19335

AGC

AGC Chemicals Americas, Inc.

55 E. Uwchlan Avenue, Suite 201
Exton, PA 19341
United States of America

Telephone: +1 610-423-4300

Toll Free (US only): 800-424-7833

Fax: +1 610-423-4305

www.agcchem.com

Visit our website for compliance information and industry certifications.

Fluon® is a registered trademark of Asahi Glass Company, LTD.
Fluon® FPC Rev 00-08/12

