



**AGC Inc.**

Performance Chemicals Business Briefing Session

December 5, 2023

## Event Summary

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<b>[Time]</b>	17:00 – 17:48 (Total: 48 minutes, Presentation: 25 minutes, Q&A: 23 minutes)
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<b>[Venue Size]</b>	
<b>[Participants]</b>	
<b>[Number of Speakers]</b>	2
	Tatsuo Momii Executive Officer, General Manager of Performance Chemicals General Division, Chemicals Company
	Chikako Ogawa General Manager of Corporate Communications & Investor Relations Division

## Presentation

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Ogawa: The time has arrived, and we will now begin the AGC Inc., Performance Chemicals Business Briefing. My name is Ogawa from the Corporate Communications and Investor Relations Division, and I will be your moderator today. Thank you for your cooperation.

I would like to introduce today's attendees. Tatsuo Momii, Executive Officer, General Manager of Performance Chemicals General Division, Chemicals Company.

First, Momii will explain the strategy of the Performance Chemicals business, followed by a Q&A session. The session is scheduled to end at exactly 6:00 p.m. Thank you for your cooperation. If you have any questions, please click the Q&A button and enter your question.

Now, Mr. Momii, please go ahead.

Momii: Once again, my name is Momii, General Manager of Performance Chemicals General Division. Thank you for attending this briefing today. I would like to begin by giving you an overview of our performance chemicals business.

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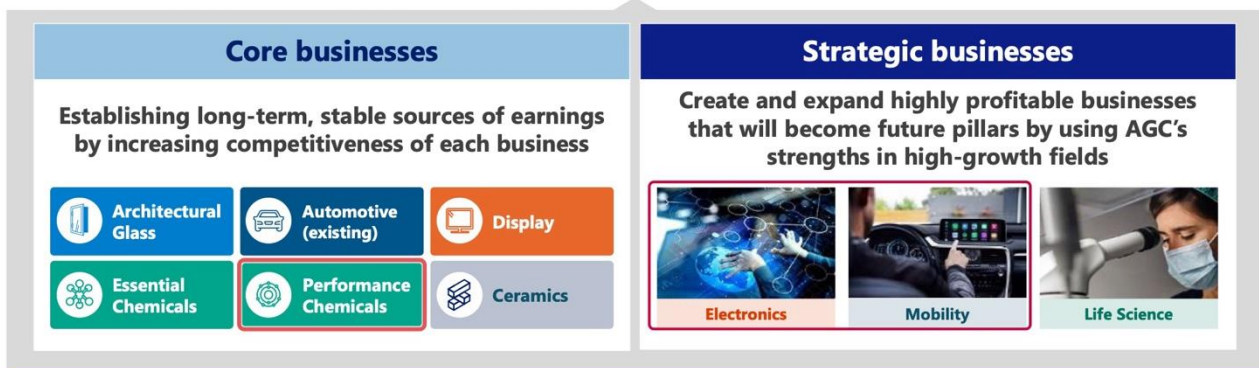
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This is the agenda that we will be explaining.

First, I will explain the positioning of our business, followed by an overview of our business, the strengths and growth strategies of the AGC Group, and finally, I will explain the trends in PFAS regulations, which have become a hot topic in recent years.

## Overall Strategy

**Leveraging the core businesses and the strategic businesses as two wheels, we will shift to an optimal business portfolio and continuously create economic and social value.**



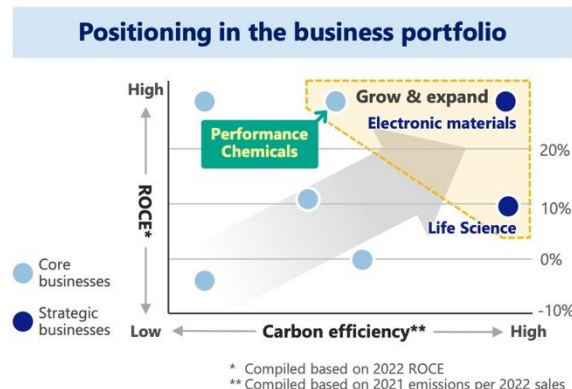
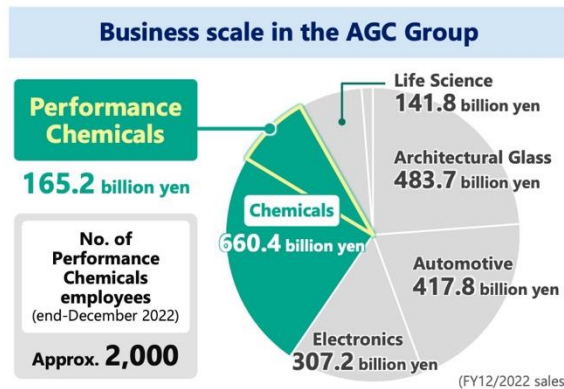
First, let me explain the positioning of the Performance Chemicals business.

As you are probably aware, the AGC Group is promoting ambidexterity, with core businesses and strategic businesses as the two wheels of the cart. Performance chemicals business is positioned as one of its core business areas.

However, as we will discuss in more detail later, performance chemicals business has a wide range of products and markets, and extends into the electronics and mobility fields, which are among our three strategic businesses.

# Positioning of the Performance Chemicals Business

- Part of the Chemicals segment and handles a wide variety of products consisting of functional chemicals and specialty chemicals
- Positioned as a growth business with high ROCE and carbon efficiency in the AGC Group's business portfolio



This chart shows the positioning of our business. The right side of the chart shows that although the performance chemicals business has a variety of products, it is generally positioned very high in terms of ROCE. Carbon efficiency is also very high, and the business is positioned as a growth business in its business portfolio.

Within the AGC Group, the performance chemicals business accounts for approximately 160 billion yen of the approximately 660 billion yen in sales in the Chemicals segment, and it employs approximately 2,000 people.

# History of the Performance Chemicals Business

- The Performance Chemicals business started from making active use of chlorine
- We have established a unique presence in global markets

60's	1962	Starts research into fluoropolymers	80's	1981	Establishes Asahi ICI Fluoropolymers, a PTFE manufacturing company, with ICI (UK)	2014	Develops <b>next-generation refrigerant AMOLEA</b> for air conditioners	
	1964	Begins production and sales of <b>CFC-12 for refrigerants</b> and <b>CFC-11 for foaming</b>		1982	Launches <b>Lumiflon, fluoropolymer for coatings</b>		2014	Establishes new Technical Service Center in Shanghai, China
	1965	Starts production of <b>HCFC 22</b> as a raw material for fluoropolymers		1988	Develops <b>CYTOP, transparent fluoropolymers</b>		2015	Completes production facility for next-generation automotive refrigerant <b>HFO-1234yf</b> at Chiba Plant
	1968	Completes a pilot plant for <b>Solvent CFC-113</b> and other products		1991	Starts production of <b>CFC substitute, ASAHIKLIN AK-225</b>		2015	Opens new Technical Service Center in Amsterdam, Netherlands
70's	1971	Develops <b>AsahiGuard water and oil repellent agents</b> Introduces fluoropolymer production technology adopted from Allied Chemical (US)	90's	1997	Establishes Asahi Allied Signal to specialize in the blended refrigerant business	10's ~	2016	Opens and starts operation at technical service center in Singapore, following those in Europe, the U.S., and China
	1972	Launches production and sales of <b>ETFE fluoropolymer</b> Starts production of <b>sulfur hexafluoride (SF6)</b>		1999	Asahi ICI Fluoropolymers becomes a 100% subsidiary Acquires the UK-based ICI's fluoropolymer business and starts businesses in the U.K. and the U.S.		2017	Launches <b>FORBLUE Family of separation and exchange functional products</b>
	1973	Starts production of TFE monomer Starts sales of <b>Fluoroelastomer AFLAS</b>		2000	Develops a new production method <b>"PERFECT"</b> for fluorine compounds		2018	Introduces <b>Fluon+</b> series, which adds further functions to the characteristics of fluorine
	1976	Starts sales of <b>fluoropolymer film AFLEX</b>		2006	Launches <b>AsahiGuard E-SERIES, a new eco-friendly product</b>		2022	AGC Si-Tech launches <b>RESIFA™</b> , an integrated brand of silica products
00's	2007	Starts overseas production of ETFE fluoropolymer in the U.K.						

Next, I will give an overview of our business.

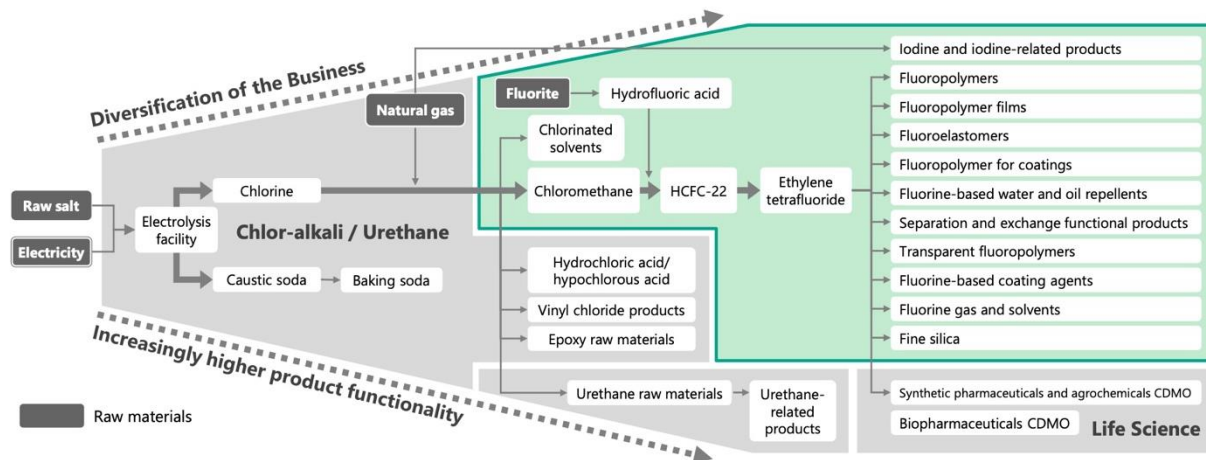
This is the history of our performance chemicals business. The history of the performance chemicals business is broken down by period, but broadly speaking, the start of the fluorine materials research and development in the 1960s and the start of the fluorocarbon gas business marked the beginning of the performance chemicals business.

From the 1970s to the 2000s, we expanded our product lines to include water and oil repellents, fluorinated resins and rubbers, and LUMIFLON®, a raw material for paints, and grew our business until the 2000s.

Since then, as you can see here, we have focused on the development of products that are environmentally compatible, environmentally responsive to the next-generation and for new markets. Now we have established a unique presence in the global market.

# Product Flow in the Chemicals Business

- The Performance Chemicals Business is positioned in the downstream part of the chemical chain
- Wide range of product lineup to provide optimal solutions to meet customer requirements

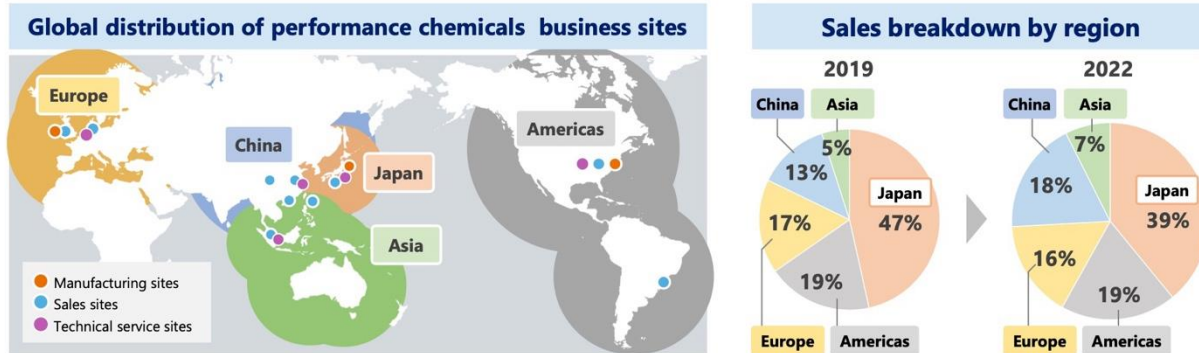


This is the product flow of our chemicals business. Our chemicals business has developed from the electrolysis of raw salt, and is characterized by the fact that all product lines are connected.

The performance chemicals business is shown in the light green area. The performance chemicals business is positioned to create various fluorine products through the effective use of chlorine and hydrofluoric acid.



- Due to the wide variety of applications, the overseas sales ratio is about 60% and the consumption area is distributed globally in where each customer industry is located
- In addition to manufacturing sites in Japan, Europe, and the U.S., sales and technical service sites are located globally
- In recent years, demand has grown in China and Asia, home to many manufacturing sites in the semiconductor sector



As I explained earlier, the products of the performance chemicals business have a wide range of applications, and looking at them by region, the pie chart on the right shows that until about 2019, sales in Japan still accounted for about half of global sales, and the other half was overseas. Overseas sales came from Europe, the U.S., China, and other Asian countries.

However, in recent years, the application of these products has been expanding greatly, especially in the semiconductor field, and as a result, demand from China and other Asian countries has been growing, and the overseas sales ratio has changed to 60%.

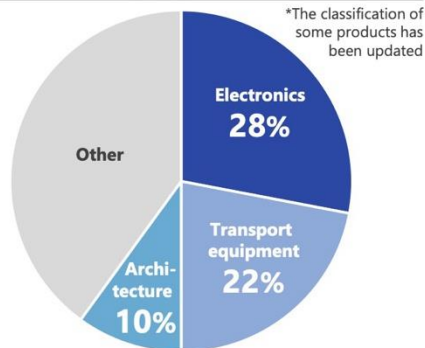
To support this business structure, we have manufacturing bases not only in Japan but also in Europe and the United States, and sales and technical service bases are also located globally.



## Main Demand Sectors

- About 60% of the demand is in the sectors of transportation equipment and architecture such as electronics, automobiles, aircraft, etc. which are the main applications
- The other remainder consists of diverse and specialized demand sectors

Sales ratio by application (2022)\*



There are many applications for fluorine products, but the three main areas of demand, electronics, transportation equipment, and construction, account for approximately 60% of total sales.

In the electronics and semiconductor fields, performance chemicals' products are used mainly in parts for semiconductor manufacturing equipment, piping materials, and optical materials, which account for about 30% of all applications.

In the transportation field, fluorine is mainly used as a coating material for electric wires. Fluorine products have high heat resistance, high weather resistance, and high reliability, and are used in fields that require extremely high reliability in transportation, such as aircraft and automobiles.

In the construction field, fluorine is used as a coating material for buildings and bridges, taking advantage of its durability, which means that it does not deteriorate even after years of use and does not need to be reapplied or repainted. These are the main applications for fluoropolymers, and currently account for approximately 60% of our sales.

# Excellent Characteristics of Fluorochemicals

- Our products with two or more superior characteristics differentiate them from rivals and are used in a wide range of industrial fields
- We continue to develop new markets with the technology to control characteristics

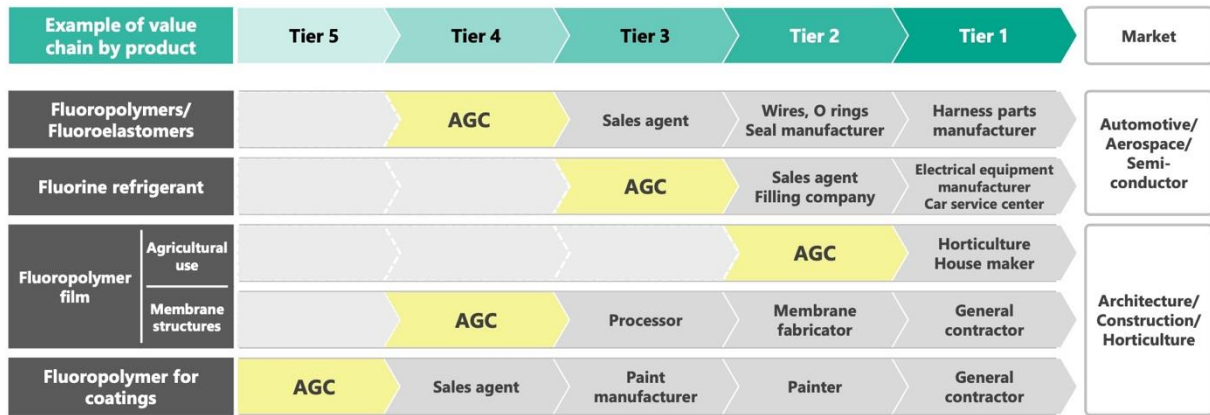
Major characteristics and sample applications for fluorochemicals		Heat resistance Resistance to cold	Chemical resistance	Weatherability Durability	Water and oil repellency Anti-stick properties	Mechanical characteristics	Electrical characteristics	Optical characteristics
Automobiles Transport equipment	Oil filters	●		●	●			
	Wire covering/fuel hoses	●		●		●	●	
	Oscillation components	●	●	●	●		●	
Electronics Tele-communications	O-rings	●		●	●			
	Semiconductor packaging	●	●	●	●		●	
	Semiconductor manufacturing equipment components		●	●	●			●
	Optical lenses			●	●			
	Touch panels			●	●			
Architecture materials	Film for LED production processes				●			
	Printed circuit boards	●			●			
	Wire covering	●		●		●	●	
	OA equipment components	●			●			
Energy	Coatings			●	●			
	Interior/exterior materials			●	●			
	Metal construction material coatings			●	●			
Infrastructure Plants	Roof/exterior wall/membrane structures			●	●			
	Solar cell materials			●	●		●	
Industrial materials	Power plant cables	●	●	●		●		
	Bridge/steel tower coatings			●		●		
Medical & lifestyle industries	Chimney/pipe sealing		●	●				
	Various sealants	●	●	●				
Medical & lifestyle industries	Tubes/hoses	●	●					
	Surgical gowns/medical masks				●			
Medical & lifestyle industries	Food packages/containers				●			

This table is a bit more detailed, but it shows how the properties of fluorine are utilized in various application fields.

I will refrain from explaining each of them one by one, but what is characteristic of fluorine is that, for example, "semiconductor manufacturing equipment parts" in "electronics information and communications" require multiple required characteristics such as chemical resistance and durability. In this context, fluorine is unique in that it possesses multiple excellent properties in a single material, and the source of our business is to control these properties with skillful technology and develop them as solutions for our customers.

# Positioning in the Supply Chain

- These products are positioned upstream of the supply chain, which is difficult to recognize from the final consumer product side
- Market demand trends tend to appear late



This is our position in the supply chain.

While the specific positioning varies depending on the application and market, the common denominator is that we focus on upstream raw materials and are therefore located very far upstream in the supply chain.

As a result, the demand trends for our materials show some time lag in relation to market movements like automobile sales and semiconductor production. This is one of the characteristics of our company, and the positioning of our company in the supply chain shows how this works.



I will now explain the strengths of AGC's performance chemicals business. I would say that our three strengths make up the current highly profitable business foundation.

First of all, we have been working on our global niche strategy which we have been pursuing since last year to become a global niche top fluorine company. Although there are materials that have become general-purpose in the fluorine world, our goal is to differentiate ourselves from our competitors, develop highly functional materials, and become No. 1 in specific markets around the world. We have adopted such a global niche strategy.

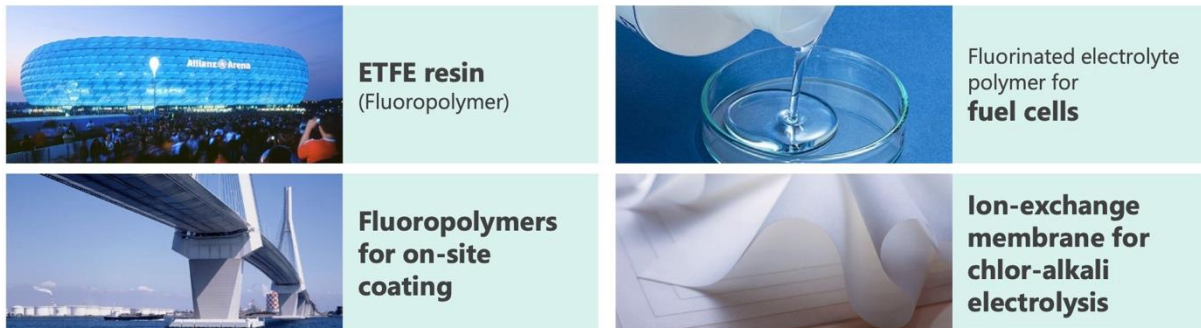
In order to realize our global niche strategy, we have developed global manufacturing, marketing, technical service, and product development functions.

Our strength lies in our ability to take advantage of this to anticipate various needs in cutting-edge fields and to quickly bring to market products demanded by our customers through our technological development capabilities, thereby forming the highly profitable business foundation of this performance chemicals business.

From here, I would like to discuss in some detail each of the three strengths I have just mentioned.

- **Global Niche Strategy** through technological development using the exceptionally unique characteristics of fluorine compounds
- High entry barriers in manufacturing due to the **intermediates that are difficult to handle**

### Products with the **No.1** global market share\*



\* Estimate as of January 2023

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First, this picture shows what exactly is the global No. 1 in the global niche strategy.

When we talk about fluoropolymers, PTFE materials such as Teflon may come to mind, but our company is very good at ETFE resins. We are also very competitive in fluoropolymers for paints. Recently, fuel cell technology is gradually spreading throughout the world, and we have an overwhelming share in the field of electrolyte polymers, which are indispensable for fuel cells.

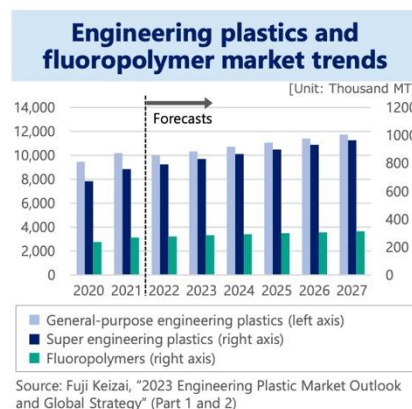
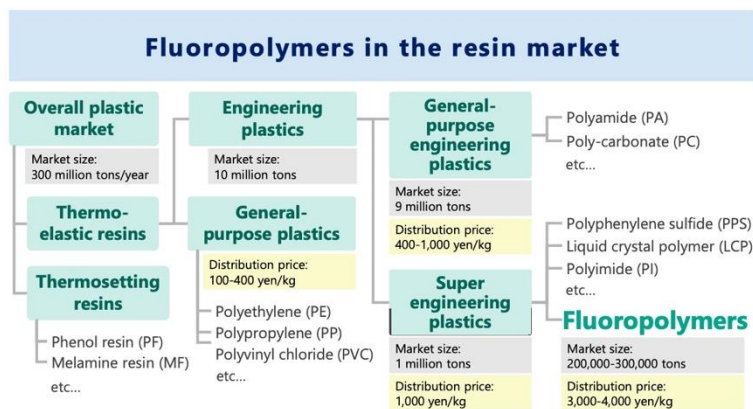
One of the reasons for our No. 1 global market share in these product groups is that we manufacture materials that are extremely difficult to produce or handle as raw materials or intermediates, and use them in our manufacturing processes.

Therefore, the barriers to entry are very high and our business cannot be easily imitated.



# Strengths of the AGC Group: (1) Global niche strategy

- Fluoropolymers, AGC’s mainstay product, are used in applications with special physical properties and have a high sales price level
- Due to the increasingly sophisticated final products in growing markets such as automobiles and semiconductors, the required specifications for materials have become more sophisticated, and the market is expanding.



Fluoropolymers are a niche material in the general resin market. While the market for engineering plastics is several million tons, the overall market for fluoropolymers is only several hundred thousand, or 200,000 to 300,000 tons.

However, as I mentioned earlier, fluorine is an extremely rare material that possesses multiple properties that cannot be achieved with other materials. Therefore, although it may be a niche market, it is an expensive material that is highly valued in terms of its distribution price. In terms of market growth, as shown in the graph on the right, the need for fluoropolymers is expected to increase in the future, just as it is the case with regular engineering plastics.

In this market environment, our number one strength is to firmly capture the top share of the market for niche materials.

- AGC's fluoropolymers have established the world's leading technology and production capacity, since the world's first successful mass production of ETFE about 50 years before.
- In addition to the high performance of our materials, Fluon® products are **highly evaluated by the market for our differentiated technologies**, such as excellent processability  
Refining technical capabilities to meet customer needs and further improve characteristics



Fluon® product characteristics	Fluon® product application examples
<ul style="list-style-type: none"><li>● High heat resistance, high weather resistance, flame resistance</li><li>● High electrical insulation, high optical characteristics</li><li>● Chemical resistance, non-adhesiveness, water and oil repellency</li></ul>	<ul style="list-style-type: none"><li>● Wire coating material</li><li>● Liquid transfer tubes</li><li>● Various linings and coatings</li><li>● Film (Membrane structure, green houses)</li><li>● Gaskets, packing</li><li>● Oil seals</li></ul>

For your reference, the ETFE resin I mentioned earlier is a fluoropolymer material that AGC succeeded in mass-producing for the first time in the world about 50 years ago. We have been working hard for 50 years, and we currently hold an overwhelming share of the world market.

In addition to its excellent processability, fluorine's unique properties such as heat resistance and weather resistance make it a material used in a variety of fields, including electric wire coatings such as those shown in the photo, coatings for parts that come in contact with various chemicals, and coatings for buildings used outdoors. The material is used in a wide variety of fields.



## Strengths of the AGC Group: (2) Global expansion

- Globally expanding functions for manufacturing, marketing, technical service and product development
- Considering building a strategic planning system in each area to focus on initiatives for medium- to long-term themes




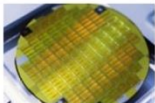


Next is global expansion.

Because of the wide range of applications and markets, we have a base of manufacturing, sales, and development in Japan, as well as manufacturing facilities on the East Coast of the U.S. and in the UK.

We have marketing bases in Europe, the U.S., Europe, Asia, China, Singapore, and, although not shown on this slide, India as well. We also have technical service bases in Japan, the U.S., Europe, and Asia to ensure that our materials are used properly by our customers.

**Strengths of the AGC Group:**  
**(3) New product and technology development capabilities**

- Increasingly market are requiring more sophisticated specifications for materials in growth markets such as hydrogen and semiconductors with increasingly higher product functionality
- Developing new products and technologies with fluorine technology cultivated over many years to meet needs

	Hydrogen business	Semiconductor business
Consumer goods	<ul style="list-style-type: none"> <li>■ Hydrogen power generation</li> <li>■ Alternative fuel feedstock</li> <li>■ Fuel-cell vehicle</li> </ul> 	<ul style="list-style-type: none"> <li>■ High-speed and high-capacity communications</li> <li>■ Millimeter wave band utilization expansion</li> </ul> 
Required technology	<ul style="list-style-type: none"> <li>■ Water electrolysis devices to produce hydrogen</li> <li>■ Fuel cells requiring hydrogen</li> </ul>	<ul style="list-style-type: none"> <li>■ Achievement of low dielectric constant and low dissipation factor of dielectric materials, reduction of transmission loss</li> </ul>
Necessary materials	<ul style="list-style-type: none"> <li>■ Electrolytic membrane for water electrolysis</li> <li>■ Electrolyte polymer solution for fuel cells</li> </ul> 	<ul style="list-style-type: none"> <li>■ Silica products as inorganic filler and EA-2000 as printed circuit board material</li> </ul> 

By developing manufacturing, sales, and technology development bases globally, we hope to be able to quickly identify technologies demanded by our customers, for example, in the fast-growing field of semiconductors and the hydrogen society that is expected to emerge as a new market, and develop them at our global technical service bases. We will then develop these technologies at our global technical service centers, or at our R&D center based in Japan, and provide them to the world as quickly as possible. Our third strength is that we have a global system to meet the needs for new materials and provide them to our customers.

# Growth Strategy for Performance Chemicals Business

- Contributing to the sustainable society with the further deepening and developing fluorine technology for social issues such as environmental problems

- Examples of fluorine technology cultivated by AGC**
- Polymer synthesis and polymerization technology
  - Molecular design technology
  - Molding and compounding technology
  - Film forming technology
  - Mass production technology

## SUSTAINABLE DEVELOPMENT GOALS

**Performance Chemicals Business**  
Contributing to the Realization of a Sustainable Society



\*1 VOC: Volatile Organic Compounds \*\* ODP: Ozone Depletion Potential \*\*3 GSC: Green Sustainable Chemistry Award \*\*4 FCDIC: Fuel Cell Development Information Center ©AGC Inc. 20

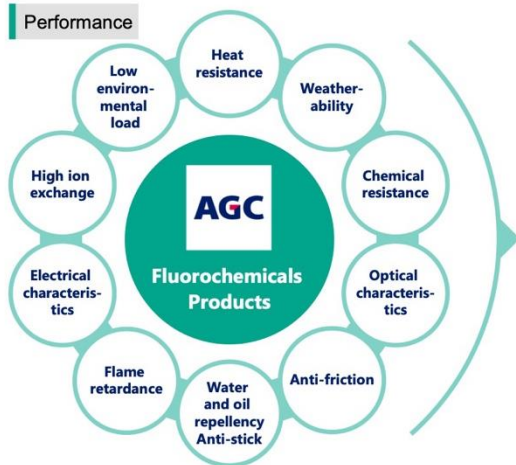
Next, I will explain our future growth strategy.

This diagram is in line with the history of our performance chemicals business shown earlier. Looking back, the history of the performance chemicals business is basically the history of our efforts to introduce new products one after another in response to environmental and other social issues, and we believe that this has led to our growth strategy.

These include the launch of the environmentally friendly ion exchange membrane Flemion® in 1975 to replace the mercury process, the development of alternative CFCs with low ozone depletion potential, and more recently, the electrolyte polymer for fuel cells mentioned earlier, as well as new membranes for water electrolysis in preparation for the hydrogen society of the future. Our growth strategy for the performance chemicals business is to provide new material solutions that contribute to the realization of a sustainable society.

# Growth Areas in the Performance Chemicals Business

- Establishing growth areas where AGC's fluorochemicals performance will contribute to solving sustainable management issues



1	<b>Safe and secure society</b> Issues: Solving food, water problems, realizing a healthy and long-lived society	  
2	<b>Comfortable society</b> Issues: Development of social infrastructure and smart society	 
3	<b>Environmentally friendly society</b> Issues: Development of a hydrogen society, addressing environmental protection	 

Among the 17 challenges of the SDGs, we have specifically set growth areas focusing on safe and secure society, comfortable society, and environmentally friendly society. In order to realize these societies, we will provide new materials by taking advantage of the characteristics of fluorochemical products.

# Initiatives in Growth Areas

	Main products									
	Fluoropolymers	Fluoropolymer films	Fluoroelastomers	Fluoropolymer for coatings	Water and oil repellents	Separation and exchange functional products	Transparent fluoropolymers	Coatings	Gas/solvents	Fine silica
	Fluon Fluon+	AFLEX F-Clean	AFLAS	Lumiflon	Asahi Guard	FORBLUE	CYTOP	SURECO	AMOLEA	RESIFA
Food/water solutions		●				●				
Realization of a healthy and long-lived society	●				●	●	●			●
Development of social infrastructure		●		●		●				
Building a smart society	●	●	●				●	●		
Building a hydrogen society						●				
Addressing environmental conservation						●			●	●

This slide shows what specific product lines will contribute to solving which issues in order to contribute to society as mentioned earlier. Fluoropolymers, rubbers, and coating materials, as well as AGC S.I. TECH's silica business, which recently came under the umbrella of the performance chemicals business, are also businesses that can contribute to the realization of a healthy and long-lived society and to the response to environmental protection. I would like to introduce three products that are expected to grow in the future.



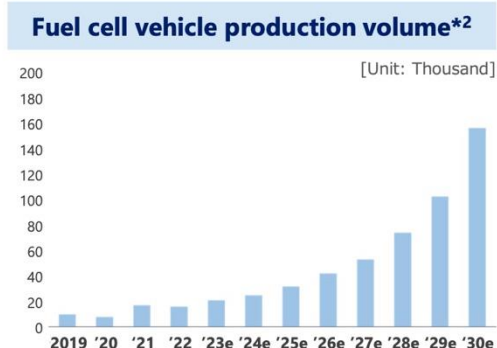
## Products Expected to Grow in the Future: (1) Fluorinated electrolyte polymers for fuel cells



- Demand growth is accelerating due to the diffusion of fuel cell vehicles and technological development toward the realization of a hydrogen society.
- AGC supplies **fluorinated electrolyte polymers for fuel cells**, which are indispensable for fuel cells
- High quality that combines high power generation performance and durability achieved by differentiated technological capabilities to establish an **overwhelming No. 1 position**



AGC Group's Strengths	
Issues with conventional products	AGC Group's Strengths
Battery cooling required due to insufficient thermal resistance of electrolytes	Developed electrolyte with excellent heat resistance
Electrolyte degradation during power generation	Durability is also dramatically improved by AGC's original technology (NPC*1 technology)
Increased cost due to the use of platinum as a catalyst	Molecular design technology that significantly reduces platinum usage



\*1 New Polymer Composite \*2 Compiled from S&P Global data

The first is the fluorinated electrolyte polymer used in fuel cells. This is what we call ionomer, and as you can see in the photo on the upper right, this is a polymer in liquid form.

Demand for fuel cells is expected to increase not only for automobiles but also for the realization of a hydrogen society, and our strength is the development of a polymer electrolyte with extremely high heat resistance. Our strength is that we have developed a polymer electrolyte with excellent heat resistance, and our proprietary technology ensures that the electrolyte does not deteriorate during power generation and has extremely high durability.

Another strength of AGC is its molecular design that can significantly reduce the amount of platinum used. One of the challenges in fuel cells is the cost increase due to the use of platinum as a catalyst, and AGC has designed molecules that can drastically reduce the amount of platinum used. As a result, AGC currently holds the overwhelming No. 1 position in electrolyte polymers for fuel cells in the world.

This is one of the products we expect to see significant growth as fuel cell technology develops.

## Products Expected to Grow in the Future: (2) Fluorinated sulfonate ion-exchange membranes



- Growing demand for electricity derived from renewable energy accelerating introduction of water electrolysis devices for hydrogen production
- AGC has integrated its electrolyte technologies for fuel cells and ion-exchange membrane technologies for chloroform electrolysis to supply electrolyte membranes for water electrolysis with the **world's highest efficiency and safety performance**



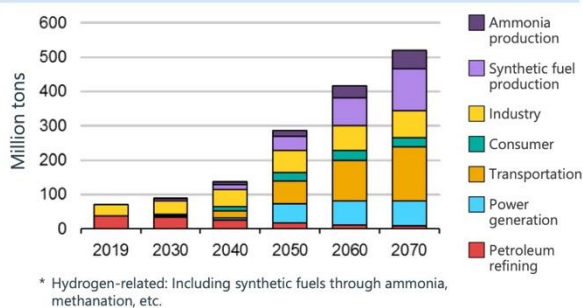
### AGC Group's Strengths

Minimal electrical resistance, which improves efficiency of water electrolysis

Low hydrogen leakage, suitable for safe operation of water electrolysis

Excellent handling and dimensional stability due to reinforced body

### Trends in hydrogen demand\*



\*Ministry of Economy, Trade and Industry, Future Hydrogen Policy Issues and Directions for Response (2021)

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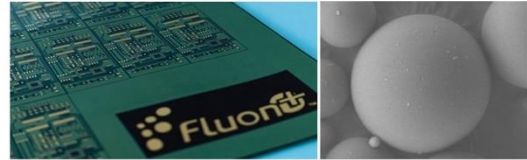
Next, from the same electrolyte polymers, now we will introduce a membrane product.

As related to fuel cells, the introduction of water electrolysis equipment to produce hydrogen is expected to grow significantly in the future as the demand for electricity derived from renewable energy sources increases, supported by subsidies from governments around the world.

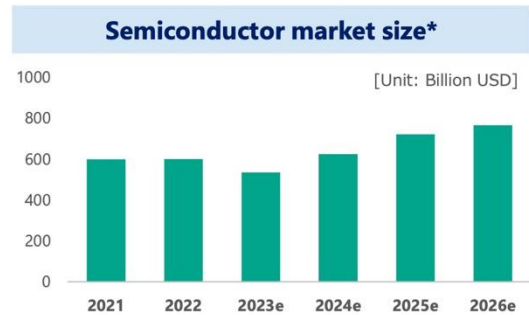
Our fluorinated sulfonic acid ion exchange membranes are electrolyte membranes developed by utilizing our membrane deposition technology in addition to the molecular design technology originally cultivated in the salt water decomposition technology. The low electrical resistance ensures high efficiency, and the low leakage of hydrogen ensures safe operation. We expect this product to become a mainstream product among water electrolyzers in the future.

## Products Expected to Grow in the Future: (3) Fluon+™ EA-2000 / Silica for inorganic fillers

- As communication speeds and capacities increase, there is a need for substrate materials with low dielectric constant, low dielectric dissipation factor, and reduced transmission loss



AGC Group's Strengths	
<b>Fluon+™ EA-2000</b>	<p>Unique characteristics of low-dielectricity fluoropolymer with adhesive properties, enabling printed circuit boards with composite low-transmission-loss materials</p> <p>Available in various forms such as powders, films, and dispersions according to customer needs</p>
<b>Silica for inorganic fillers</b>	<p>Lowest dielectric constant and dissipation factor in the industry with AGC's proprietary silica technology</p> <p>Available in a wide range of applications, including printed circuit boards and semiconductor sealants</p>



\* Chart created by AGC based on Gartner data. Gartner®, Semiconductors and Electronics Forecast Database, Worldwide, 3Q23 Update, Rajeev Rajput et al., 4 October 2023, Semiconductor Revenue by Electronic Equipment basis. Gartner is a registered trademark and service mark of Gartner, Inc. and/or its affiliates in the U.S. and internationally, and is used herein with permission. All rights reserved.

Next is Fluon + EA-2000 and silica for inorganic fillers. These are two products that we expect to grow in the semiconductor field.

As communication speeds and capacities increase, there is a demand for substrate materials with lower dielectric constant. Fluorine is a material with excellent electrical properties and low dielectric constant, but another characteristic of fluorine is its non-adhesiveness. It can be said that it is very difficult to combine with various materials, but EA-2000, which we have developed this time, is a very unique material that has adhesive properties despite being a fluoroplastic.

Therefore, by combining with conventional substrate materials such as polyimide, it is expected to be developed as a substrate material required for future high-speed, high-capacity applications.

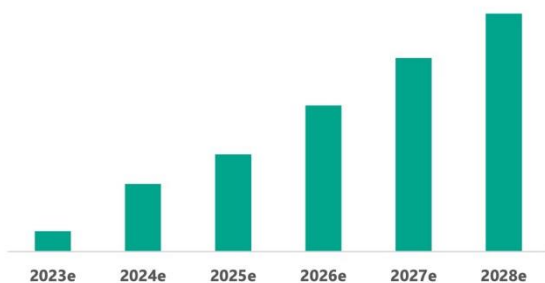
In addition, AGC's proprietary silica technology for inorganic fillers has been highly evaluated by customers as a filler that achieves the industry's highest level of low dielectric constant. We expect this product to grow in the future era of high-speed communications.



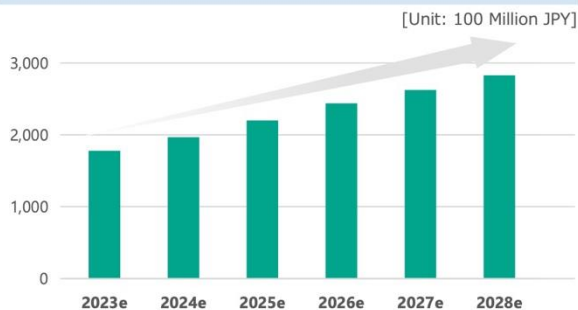
## Medium- to Long-term Earnings Targets

- Decided in March 2023 to invest 35 billion yen to increase fluorine product capacity (scheduled to start operation in 2Q 2025)
- In addition to existing applications, we aim to capture cutting-edge needs and achieve sales of 200 billion yen or more by 2025 and 300 billion yen by 2030

### Performance Chemicals Business: Conceptual image of Cumulative Investment



### Performance Chemicals Business: Sales Trends


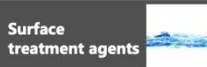








Based on the three strengths of our performance chemicals business, we believe it is important to provide solutions to our customers ahead of time and to have the supply capacity to ensure that our customers can use our products with confidence, including the anticipated products I have just introduced.

We have already decided to invest 35 billion yen in March of this year to increase our production capacity for fluorine products, which will begin operation in the second quarter of 2025. By introducing new products, anticipating market growth and customer demand, we will continue to expand our capacity ahead of schedule, aiming to achieve sales of 200 billion yen by 2025 and over 300 billion yen by 2030.

## PFAS : generic name for fluorine compounds, and there are about 12,000 kinds

- AGC has no history of manufacturing PFOS, which is currently regulated. Furthermore, we terminated the manufacturing and sales of PFOA by 2015, prior to the regulation\*.
- To fulfill its corporate social responsibility, AGC Group is working to minimize the environmental impact of our business activities and reduce the environmental impact of our products based on scientific evidence

<b>Regulated substances</b>	<b>PFOS</b>	<b>PFOA</b>
	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Aqueous Film-Forming Foam</p> </div> <div style="text-align: center;">  <p>Surface treatment agents</p> </div> </div> <p style="text-align: center;"><b>AGC has no experience in manufacturing or selling PFOS</b></p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Water repellents (old generation)</p> </div> <div style="text-align: center;">  <p>Emulsifier</p> </div> </div> <p style="text-align: center;"><b>AGC abolished manufacturing and selling PFOA ahead of regulation completely</b></p>
<b>AGC products</b>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Ion-exchange membranes</p> </div> <div style="text-align: center;">  <p>Fluorinated resins</p> </div> </div> <p style="text-align: center;"><b>Meeting the OECD's criteria for Low concern Polymers i.e. low environmental, human health impacts and hazards</b></p>	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Pharmaceuticals</p> </div> <div style="text-align: center;">  <p>Agrochemicals</p> </div> </div> <p style="text-align: center;"><b>Strictly controlled by related law</b></p>

\*Regulations in this page refer to substances designated as Class I Specified Chemical Substances under the Act on the Regulation of Manufacture and Evaluation of Chemical Substances (Chemical Substances Control Law) in Japan.

Last but not least, I would like to mention the recent PFAS regulatory trend.

The term "PFAS" has recently been widely used in the media, and I am sure that some of you have heard the term "PFAS pollution". However, we would like to remind everyone that, among PFAS, the substances currently regulated in Japan are PFOS and PFOA only.

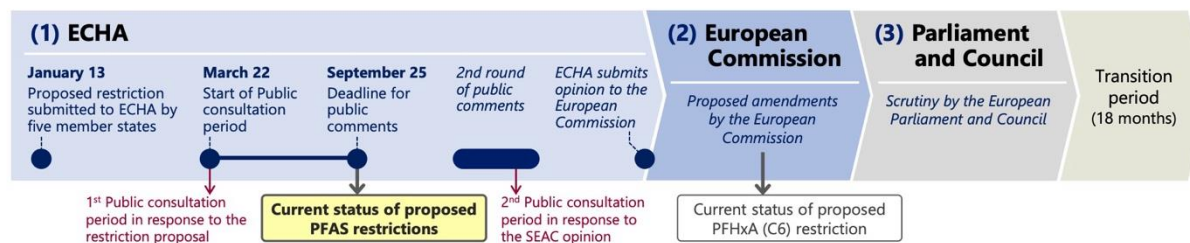
AGC has no experience in the manufacture or sale of PFOS. With respect to PFOA, although we used to manufacture and sell some products containing PFOA in the past, all production and sales were terminated by 2015, before the regulations on PFOA took effect.

Regarding other PFAS-related materials other than PFOA, we are constantly working to minimize the environmental impact of such PFAS-related materials, including the emission from the manufacturing process. We regard the minimization of environmental impact as the most important thing in the expansion of our business.

- The expert committee of the European Chemicals Agency (ECHA) is currently reviewing the proposal of the universal PFAS restriction.
- The draft regulation may be adopted in 2025, and substances without a derogation period may be regulated no earlier than 2027. However, the ECHA's review process is taking time due to the significant number of public comments received, and the time frame for the regulatory process is currently unclear.
- AGC Group has submitted our public comments.

## Review process of the proposal of the universal PFAS regulation in Europe

- (1) After two rounds of public consultation by ECHA, the expert committee submits their final opinion
- (2) The European Commission prepares a draft regulation referring the final opinion submitted, and the REACH Committee, consisting of member states, deliberates on and adopts the draft.
- (3) The adopted legislation enters into force after being scrutinized by the European Parliament and Council



Currently, in Europe, the restriction on PFAS is being considered under the framework of REACH regulation. The following is a summary of the current trends.

The European Chemicals Agency (ECHA) is now studying the proposed regulation draft of PFAS restriction. In the original plan, the legislation is expected to be enacted in 2025 and take effect in 2027 for applications for which no transition period has been set. However, due to the large number of public comments having been received during the public consultation, it is currently unclear whether the legislation process will proceed as planned.

AGC is active as a member of industry associations, have submitted public comments, and will continue to advocate globally, particularly in Europe, the importance of fluorinated products.

This is the end of my explanation, although it is rather lengthy. Thank you very much for your attention.

Ogawa: Thank you very much, Mr. Momii.