# AGC Inc.

Semiconductor-related Business Briefing

June 2, 2026

# Event Summary

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| **[Company Name]** | AGC Inc. |
| **[Company ID]** | 5201-QCODE |
| **[Event Language]** | JPN |
| **[Event Type]** | Analyst Meeting |
| **[Event Name]** | Semiconductor-related Business Briefing |
| **[Date]** | June 2, 2026 |
| **[Venue]** | Webcast |
| **[Number of Speakers]** | 3 |

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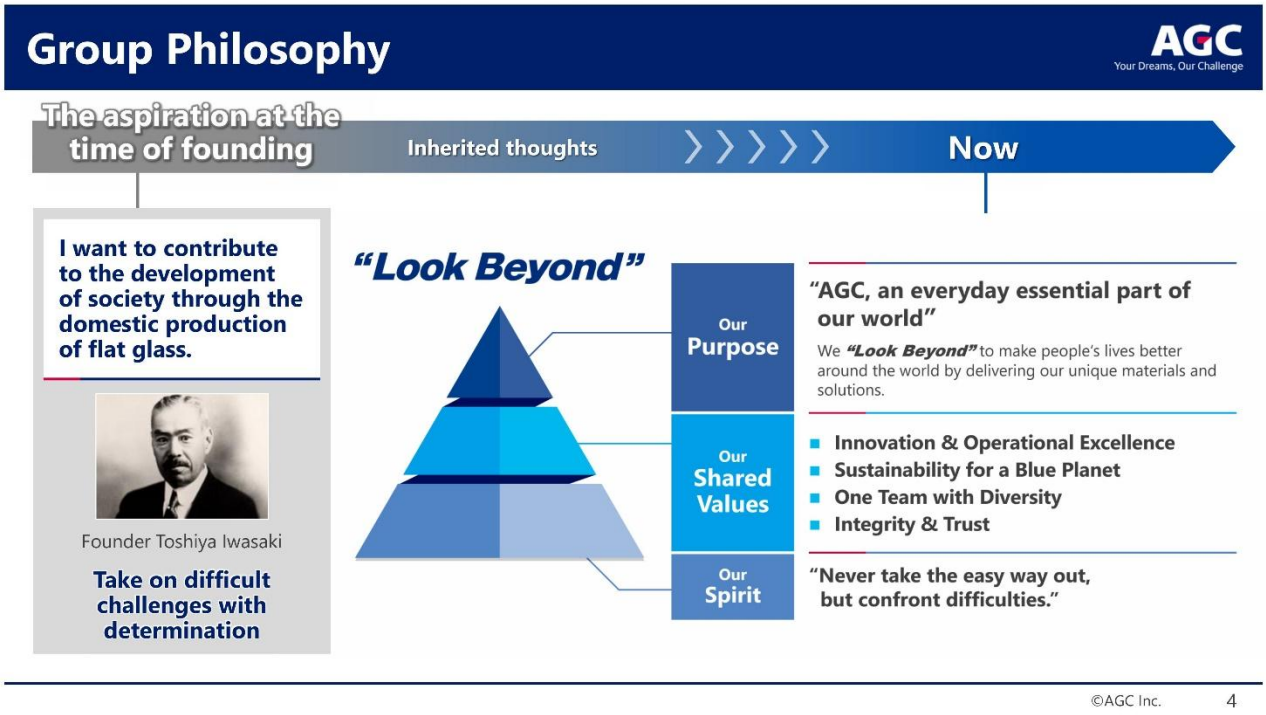
|---|---|
| Hideyuki Kurata | Representative Director, Executive Vice President & CTO |
| Nobuyuki Suzuki | Executive Vice President, President of Electronics Company |
| Tatsuo Momii | Senior Executive Officer, President of Chemicals Company |

## Presentation




**Kurata:** I am Kurata, CTO. Today, I will explain our semiconductor-related business.

As a materials manufacturer, we operate a wide range of businesses, and recently I sense that attention to our semiconductor-related products in particular has risen considerably.

I will start with our origins and the evolution of our technology development to show the foundation that has given us our many semiconductor-related products, and after that I will have the presidents of Electronics and Chemicals segments explain the specific products in detail.

Our founder, Toshiya Iwasaki, the second son of Yanosuke, the second-generation head of the Mitsubishi founding family, took on the domestic production of flat glass despite knowing how difficult it would be, and he succeeded.

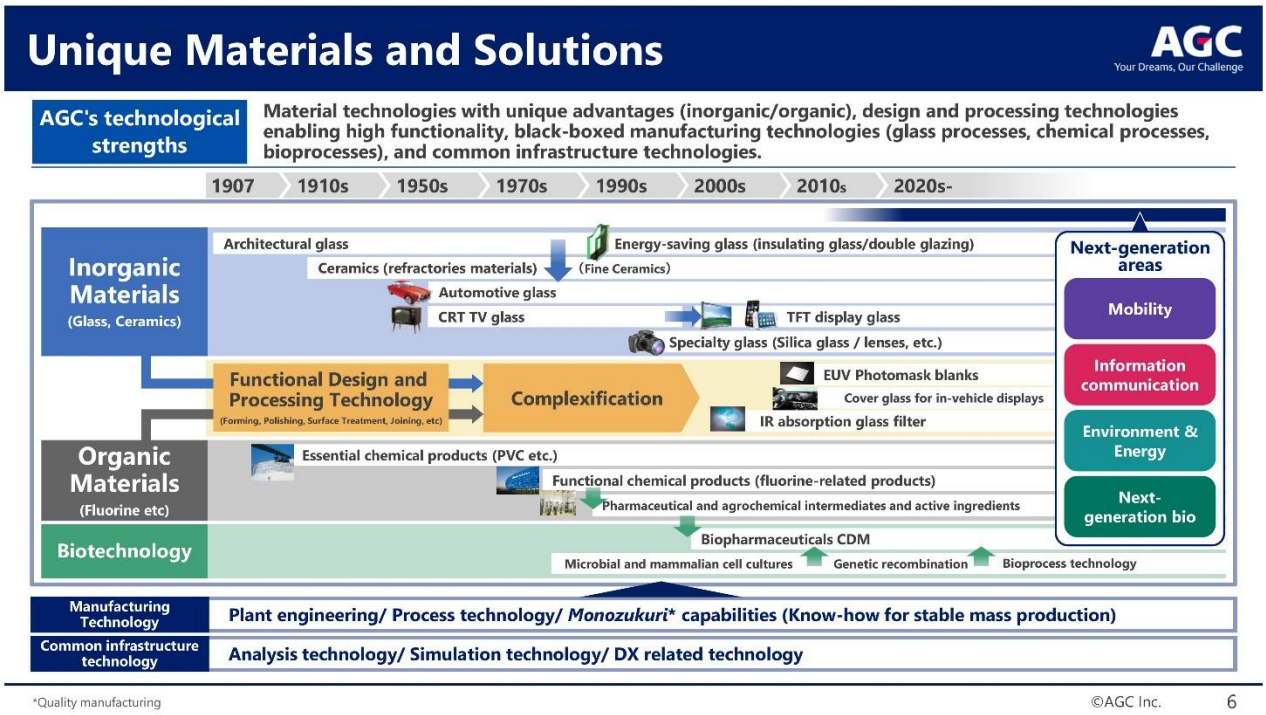
Our spirit of “Never take the easy way out, but confront difficulties.” carries on that founding spirit to this day and is embedded in our corporate culture. The founding aspiration of contributing to society through materials has also been passed down without interruption. I believe this connects to our group philosophy: “Look Beyond”, We “Look Beyond” to make people’s lives better around the world by delivering our unique materials and solutions.

Even as we have shifted our industrial domains and the products we serve, AGC continues to grow and evolve today.


Since our founding in 1907, by offering the products needed in each era, our business has diversified from architectural glass to automotive glass and then into electronics, chemicals, and life science.

We have consistently supplied what the times required, including glass for liquid crystal displays, various major chemical products, and materials and components for semiconductors.

You could say that AGC's materials and solutions capabilities have opened up new markets.

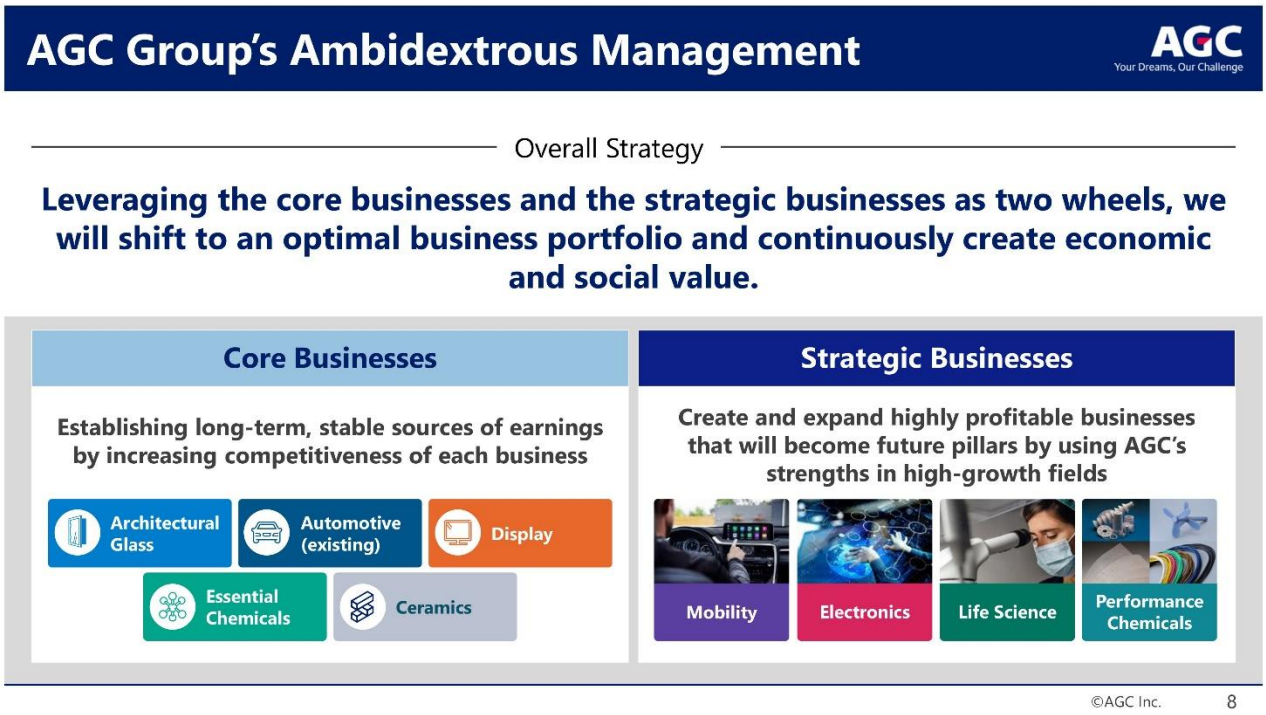



Over that long history, we have acquired and further evolved inorganic and organic materials technologies, along with technologies for combining materials based on design and processing technologies for adding higher functionality. On top of that, our black-boxed manufacturing capabilities, such as stable production and design technologies for specialty products, have become a major differentiator for us.

Combining these strong elemental technologies is precisely AGC's strength, and it is the foundation that lets us offer many products in the semiconductor field.


Since 2015, we have clearly defined Core businesses and Strategic businesses and have pursued growth through ambidextrous management, aiming for the vision we want to achieve by 2030.

Through our medium- to long-term initiatives, we are advancing our contribution to a sustainable society and our own continuous growth and evolution.




We define our five long-standing businesses, on the left side, namely Architectural Glass, Automotive, Display, Essential Chemicals, and Ceramics, as Core businesses, and these build a solid, long-term, and stable earnings base.

We have set our Strategic businesses in the four fields shown here: Mobility, Electronics, Performance Chemicals, and Life Science. We take on bold challenges in these fields, and they drive the expansion of our sales and profit.

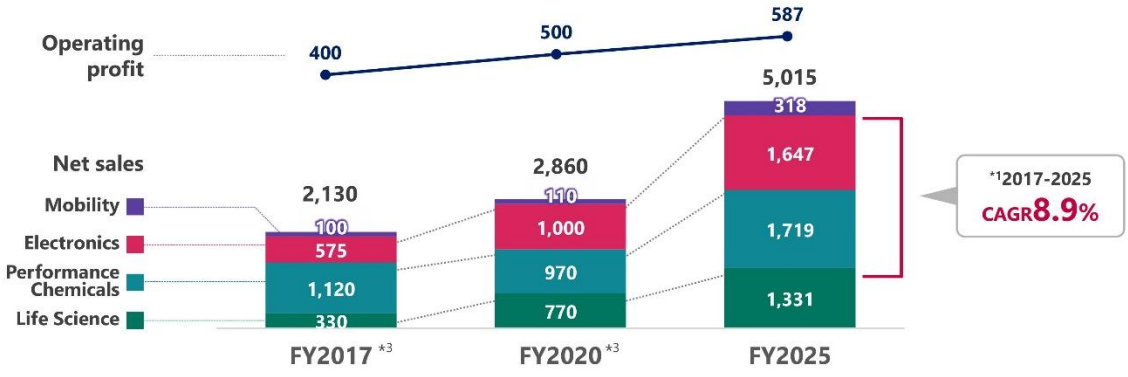
Through this strategy, we are working to shift to an optimal business portfolio and aiming to become a company that continuously creates value.

The semiconductor-related business I will introduce today is included in Electronics and Performance Chemicals, and it is precisely the Strategic business that drives our growth. By clearly defining the sources of our growth, we expect to expand and accelerate our future growth areas.

# Strategic Business Performance Trend

- Net sales from strategic businesses have increased by approx. 2.4 times from 2017.
- The average sales growth rate for Electronics and Performance Chemicals including semiconductor-related businesses was 8.9%*1.

**Performance trend of strategic businesses*2** (100 million JPY)

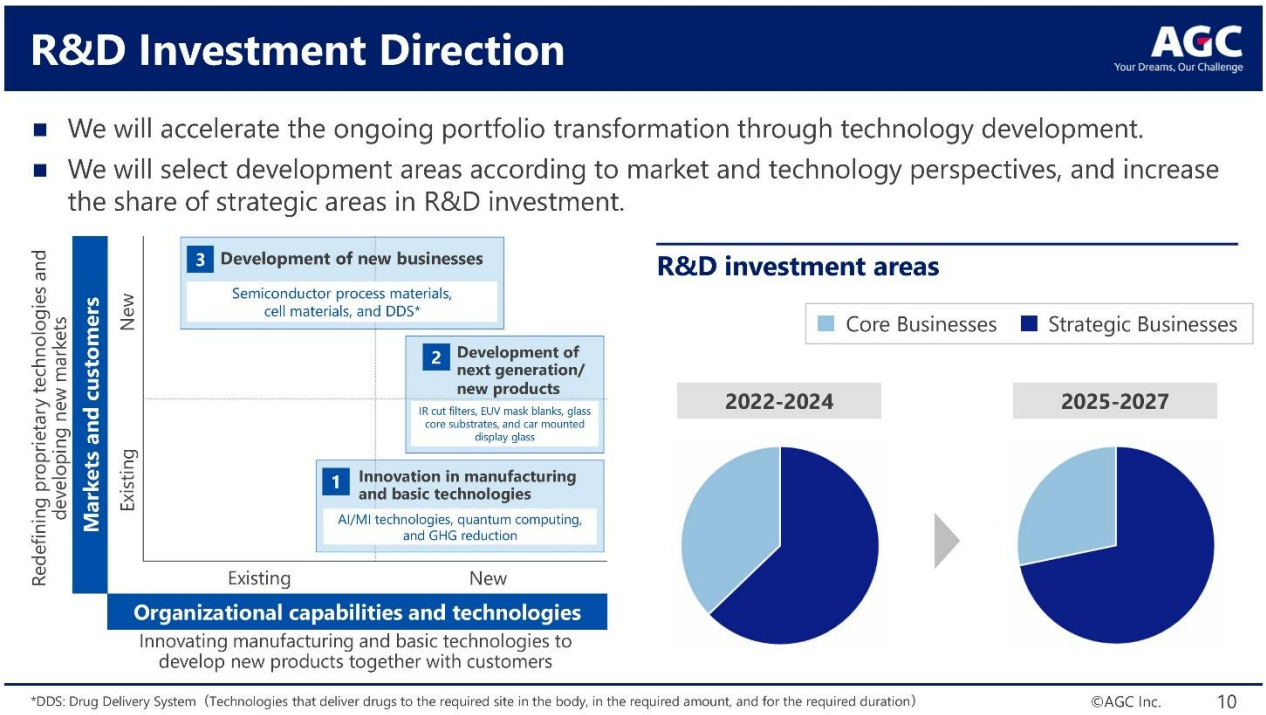



*2 New definition of strategic business revised in February 2024 *3 FY2017 and FY2020 sales and operating profit figures are approximate
※ As a result of *2*3, some figures differ from those previously published

 9

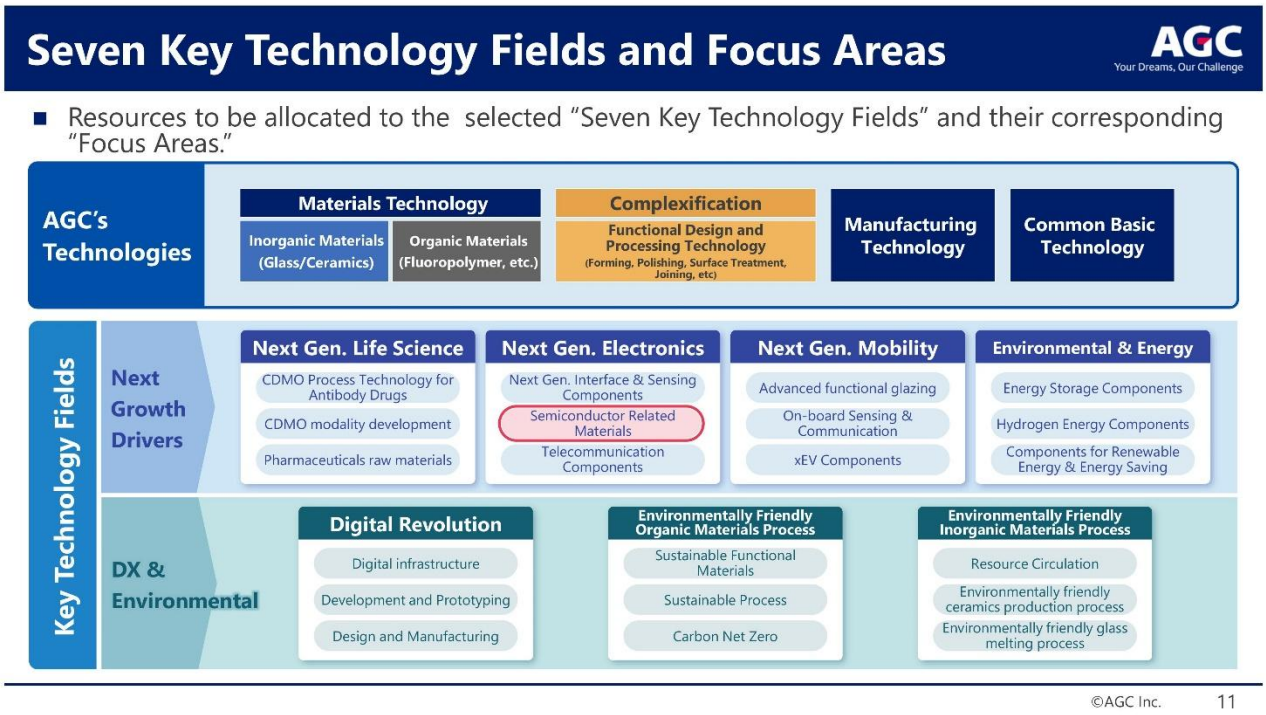
Looking at the growth trend of our Strategic businesses, net sales are now about 2.4 times the 2017 level. In particular, if we focus on Electronics and Performance Chemicals, which include the semiconductor-related business, we have secured growth at a CAGR of 8.9%.

Because of weakness in Life Science, the increase in operating profit has been limited, but the earnings of Electronics and Performance Chemicals have expanded along with their sales growth. We will continue to position the Strategic businesses as our growth drivers and work to accelerate them.



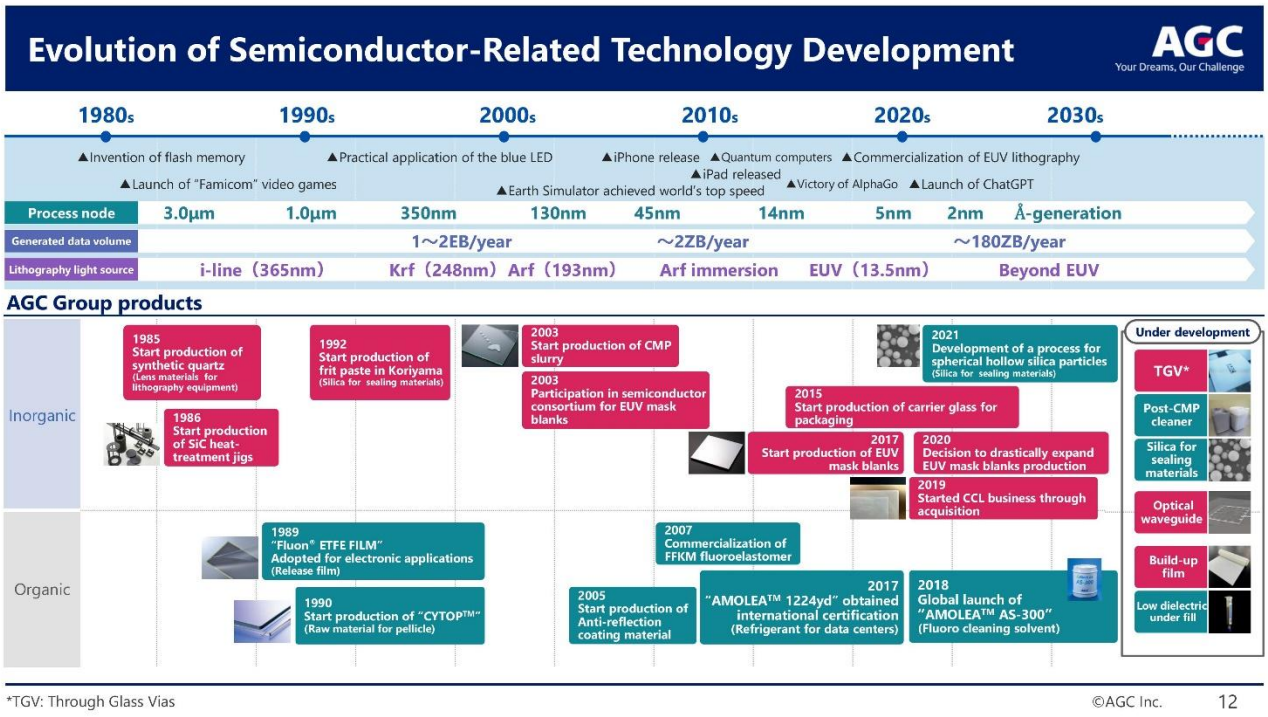

By pursuing ambidextrous management, our priorities for investment and R&D have become clear. The chart on the left organizes our R&D investment portfolio along two axes: “Markets and customers”, and “Organizational capabilities and technologies”—in a matrix of existing and new.

The comparison on the right, which aggregates three years of R&D investment, shows that Strategic business development investment has recently exceeded 70%. Moreover, here you can see that we are changing our allocation of development resources to accelerate the growth of the Strategic businesses.



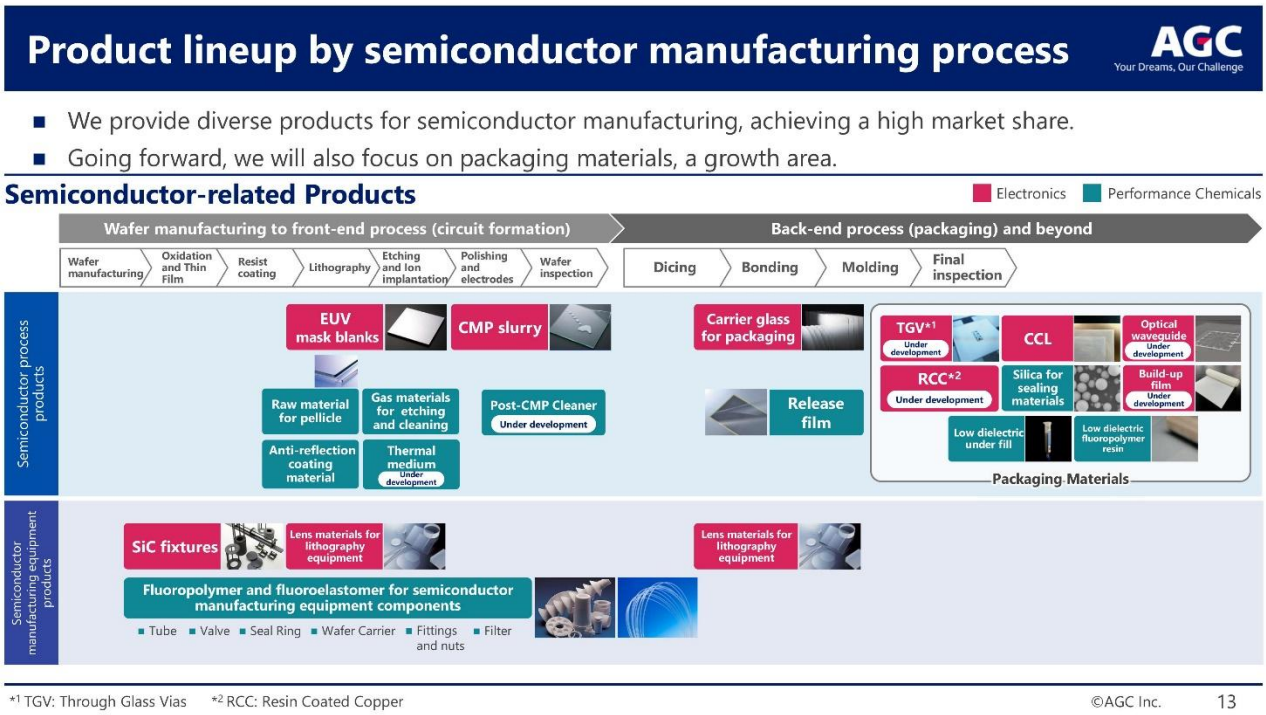

For current and future technologies, we define key technology fields and focus areas and work to raise our probability of success.

We are paying particularly close attention to the areas that will be future drivers. Notably, the next-generation electronics shown in this slide, with semiconductor related materials at its center, is an important focus area.




As you know, semiconductors have followed Moore's Law, and their history is one of changing lithography wavelengths from i-line to KrF, ArF, ArF immersion, and EUV, and of miniaturization of the process node. AGC began producing synthetic quartz, a lens material for lithography, in 1985. In step with the evolution of semiconductors and the advance to finer nodes, we have provided essential products without which semiconductors could not be made. Those products are shown here.

Technology will keep evolving from here, and going forward we will continue to develop and launch new products that are indispensable to the semiconductor industry. We will contribute to the semiconductor industry by entering the market at the right time with each product.



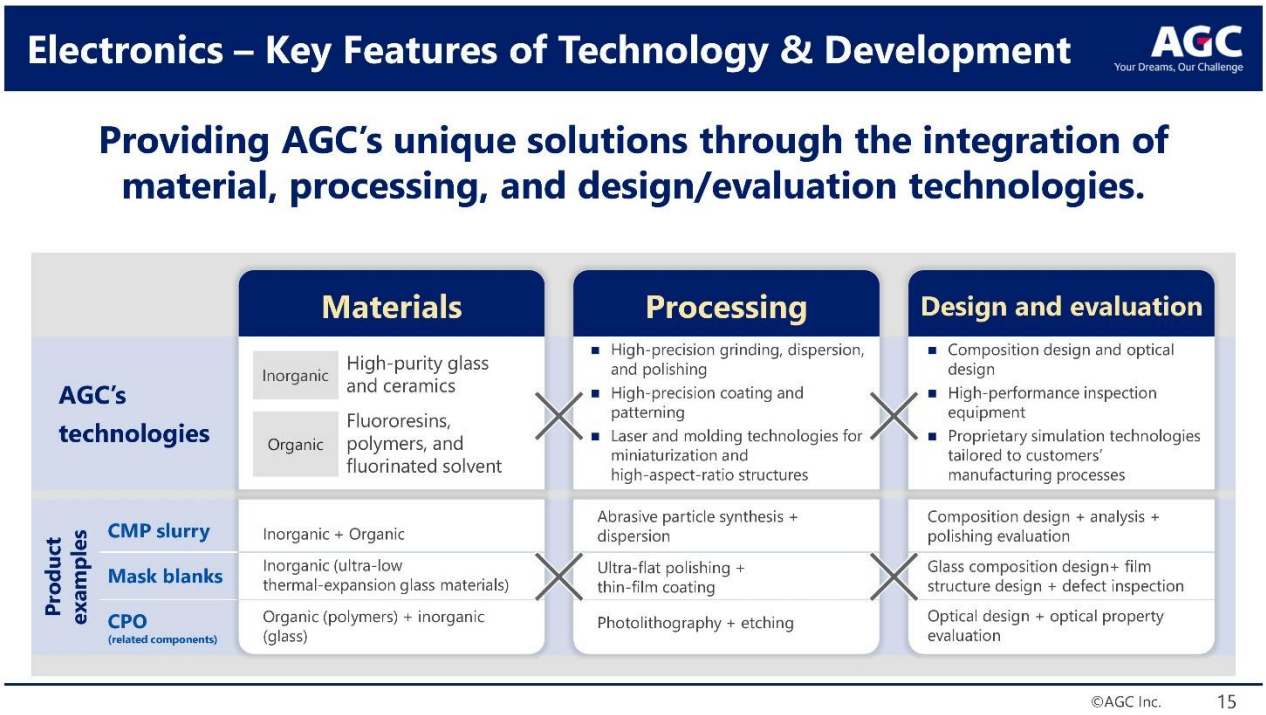

Next, this chart shows our product groups divided into the front-end wafer manufacturing process and the back-end packaging process for semiconductors. We have further divided them top and bottom into process products and manufacturing equipment products for semiconductors.

The relevant company presidents will explain the main products shortly, so I will skip the details here.

Going forward, we will also focus on packaging materials, which are a growth area. From the front-end to the back-end process, and from process products to manufacturing equipment products, we will make proposals to our customers with the breadth and depth of AGC's technology.

**Nakagawa:** Thank you, Mr. Kurata.

Next, Suzuki, please go ahead.




**Suzuki:** From here, I, Suzuki, President of Electronics Company, will explain AGC's semiconductor business in Electronics. Thank you.

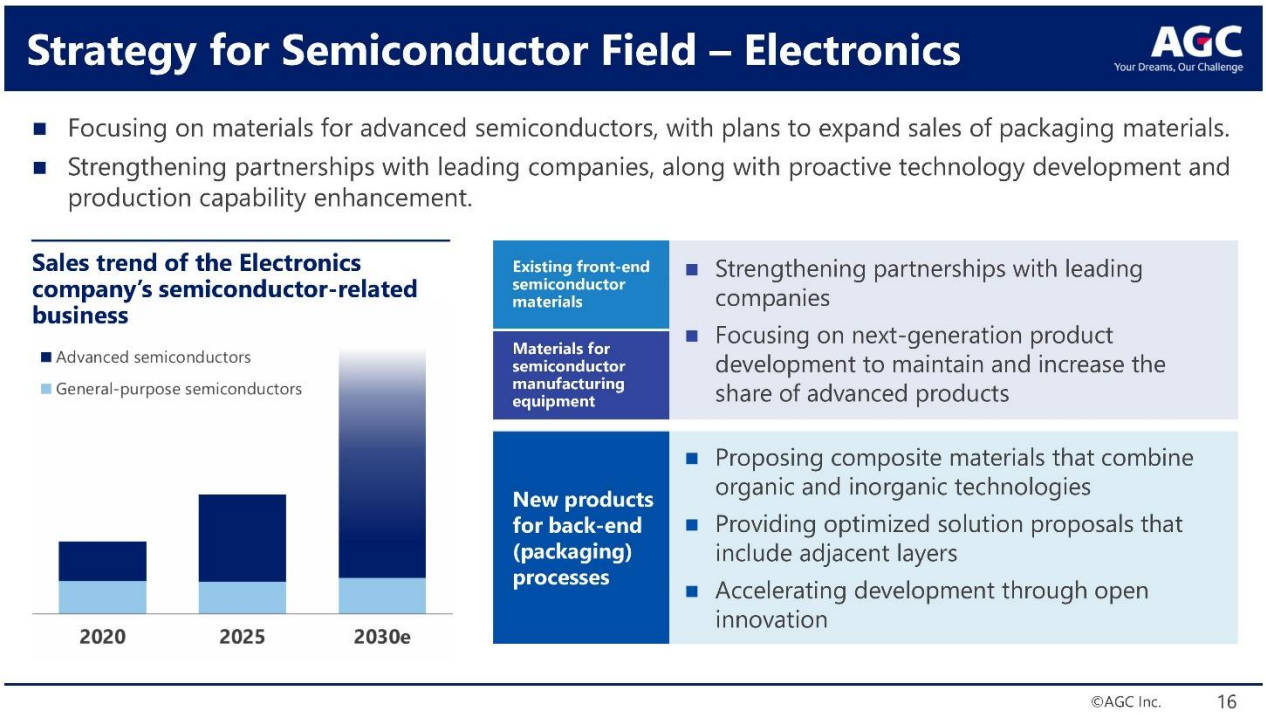
I will explain the features of technology development and product development across AGC's Electronics business as a whole. As shown in the slide, a distinctive strength of ours is that we have outstanding technologies in materials, processing, and design and evaluation, and we can supply products that combine all of them.

What is unique about our materials is that we have both inorganic and organic ones. In processing, we have not only simple glass cutting but also a wide variety of technologies, including polishing, high-precision grinding, coating, and patterning, as well as laser and molding technologies. And beyond just making things, we have composition design, optical design, and advanced simulation technologies, along with high-level inspection, evaluation, and analysis skills.

By integrating these, we provide AGC's own solutions, and we have supplied cutting-edge components and composite materials.

Similar in this respect, for example, CMP slurry uses organic and inorganic materials, and in addition to high-precision abrasive-grain synthesis and dispersion processing technologies, we supply cutting-edge, high-quality products through abrasive-grain composition design and evaluation using the same equipment as our customers.

In the field of photonic-electronic convergence, which is expected to expand going forward, we believe we can supply unique products by combining polymers and inorganic materials and bringing together processing such as photolithography, etching, and lasers with optical design and simulation.




I will explain our sustainable growth strategy in the semiconductor field, based on the kind of technologies I explained. We have long focused on advanced semiconductors in our semiconductor business. As the chart on the left shows, advanced semiconductors will drive the business even further going forward.

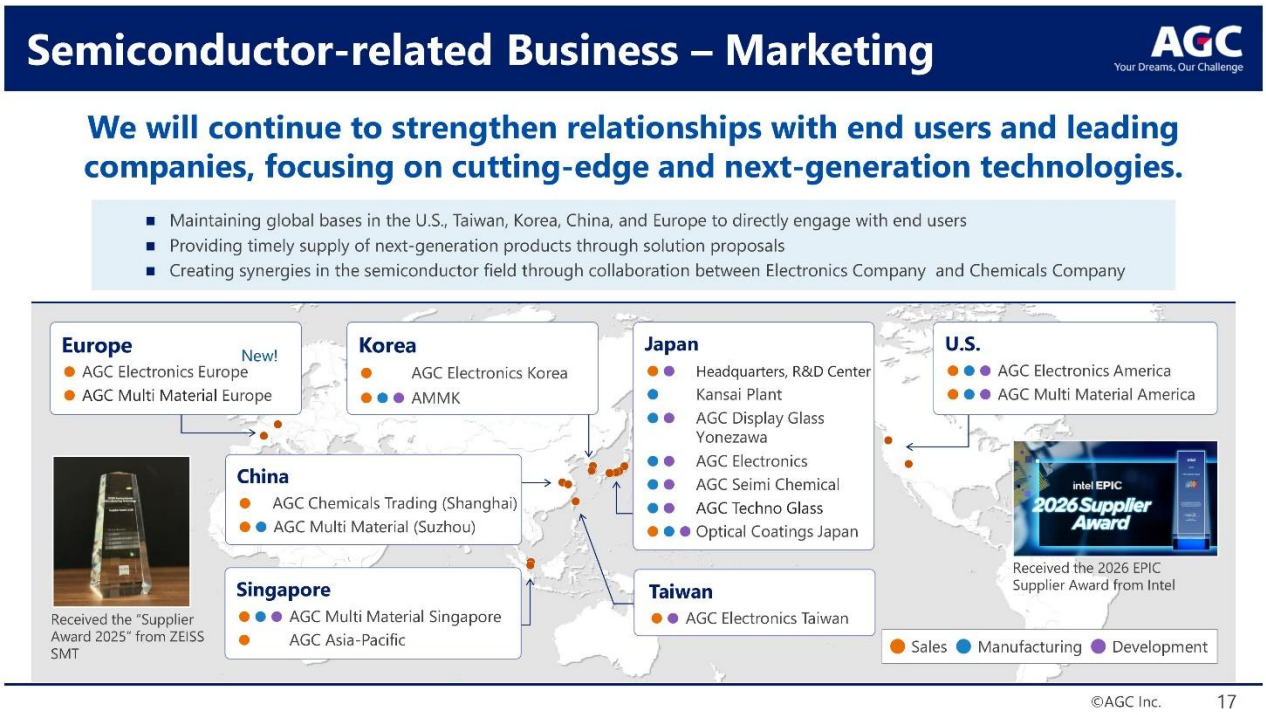
We have a high share in fields with strong technical differentiation and expected long-term growth, with representative examples being existing products such as mask blanks, CMP slurry, and materials for semiconductor equipment. Going forward, we will also focus on materials for back-end packaging, where large growth is expected for AI and high-performance servers.

We also believe that the CCL technology we acquired through M&A will become even more important going forward. I will cover the back-end process on a separate slide later.

For existing products, we will leverage the partnerships we have built with leading companies and strengthen the development of next-generation products to continuously advance our technology for advanced semiconductors. On the back-end, new needs and requirements will keep emerging, so new product development is needed. In the back-end as well, we aim to establish our position in advanced packaging by offering new products and solutions to leading companies through our combination of organic and inorganic technologies.

In the back-end, coordination with other materials and equipment is also important, so we are seeking to accelerate development through open innovation, including by participating in the JOINT3 consortium.

For both the front-end and back-end, we have our own development items and products, and by marketing them collaboratively, we aim to provide customers with the best possible solutions.




This slide explains our global locations. To strengthen relationships with leading companies, we are reinforcing local marketing.

Outside Japan, we have semiconductor-related marketing bases in the United States, Taiwan, Korea, China, Europe, specifically Germany, and Singapore. Among these, in Taiwan, China, the US, and elsewhere, we run bases jointly with Chemicals segment, creating synergies.

Development is centered on Japan, but we also have development bases in Taiwan and the US. In Japan, in addition to Yokohama Technical Center, we conduct development at each of our manufacturing sites, giving us a structure that lets us carry out product development effectively, including basic development and prototyping.

By conducting local marketing, we are deepening our partnerships with leading companies.

# ①Lens Materials for Lithography Equipment

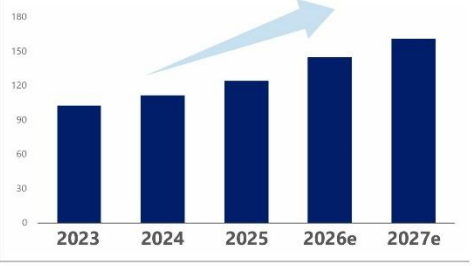
AGC Your Dreams, Our Challenge

## Market overview

Market growth

- The semiconductor market is driven by AI and data centers.
- Major advanced semiconductor manufacturers continue to invest at high levels, and the equipment market is expected to remain solid over the medium-term.

**Semiconductor manufacturing equipment market***
( billion USD )




## Strength

- Manufactured based on AGC's long-standing expertise and R&D in glass, chemicals, and ceramics.
- Holding the No.1 share in synthetic quartz lens materials for ArF lithography tools, also used in various optical components for semiconductor processes.
- High transmittance from deep UV to infrared, excellent optical homogeneity, and high laser durability.

## Strategy

- Maintaining a high market share by leveraging properties optimized for lithography lenses.
- Driving business growth by capturing expanding demand for semiconductor manufacturing equipment materials.

* Source : Gartner

 18

From here, I will introduce some representative products. First is synthetic quartz lens material for lithography equipment.

This product has not been featured much before, but AGC has products with a high share even in semiconductor equipment. For AI and data center semiconductors, EUV gets particular attention, but demand is also rising for advanced lithography with ArF, as well as for KrF and i-line.

In synthetic quartz for lenses, AGC differentiates itself from competitors through superior properties and quality, and our ArF lenses have the top share globally. Inquiries for synthetic quartz are very strong, and going forward we will expand sales for KrF and i-line beyond ArF. For semiconductor equipment, silicon carbide, which has excellent heat resistance, is also one of our high-share products.

## ②EUV Mask Blanks

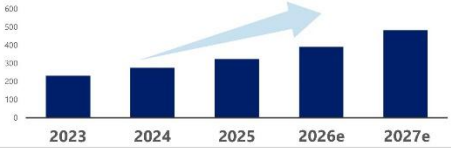
AGC Your Dreams, Our Challenge

### Market overview

**Shipment volume**

- The growth in shipments of EUV lithography equipment is accompanied by increased use of EUV mask blanks.

**Shipments of EUV lithography equipment** *1 (units)




**Technological development**

- Developing next-generation products that can improve throughput and resolution of lithography systems for each semiconductor device generation and lithography system model.

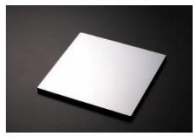
| Device Generation | Lithography System | Development Status of AGC |
|---|---|---|
| Logic 7~2nm<br>DRAM D1Z~D1D | Low NA<br>(NA0.33) | Completed |
| Logic 1.4~0.7nm<br>DRAM D0X~ | High NA<br>(NA0.55) | Under development |
| Logic <0.7nm | Hyper NA<br>(NA>0.7) | Under development |

### Strength

- The sole blanks manufacturer in the world that covers the whole production process from glass materials to polishing and deposition.
- Strengths include flexibility to customer requests, technical proposals and support to customers.
- In-house film structure design capability.

### Strategy

- Continue to invest intensively in line with market growth.
- Armed with strong technological capabilities, we will drive the development of next-generation blanks for leading-edge nodes.



**AGC is one of the market's leading two players worldwide**

*1 Source: estimated based on ASML materials and data from research companies; cumulative.

 19

Next is an explanation of EUV mask blanks.

We have been advancing R&D since 2003, when we joined the EUV consortium. We are recognized by customers as the only blanks manufacturer that has integrated in-house production from the glass material through the final process.

As you know, EUV lithography will keep increasing for AI and high-performance servers. Last year there was a view that the market might slow somewhat, but looking at increasing needs including memory and at ASML's recent comments, we see steady growth continuing.

With rising utilization rates and increases in lithography throughput, we also forecast that mask usage per tool will increase going forward, and we see a possibility that demand will firm further, which we are watching closely.

We reached net sales of JPY40 billion in 2024, and although sales declined once last year, this year we are on a recovery track, and we expect continuous growth going forward.

Currently, our customers are in mass production down to the 2-nm node for logic and the D1D generation for DRAM, but we are also advancing development of the next and the generation after that, preparing for further miniaturization. Mass-production volumes at the 2-nm class are increasing, and we are also in mass production for phase shift masks. Evaluation is progressing for High NA as well; that is the current state of our development.

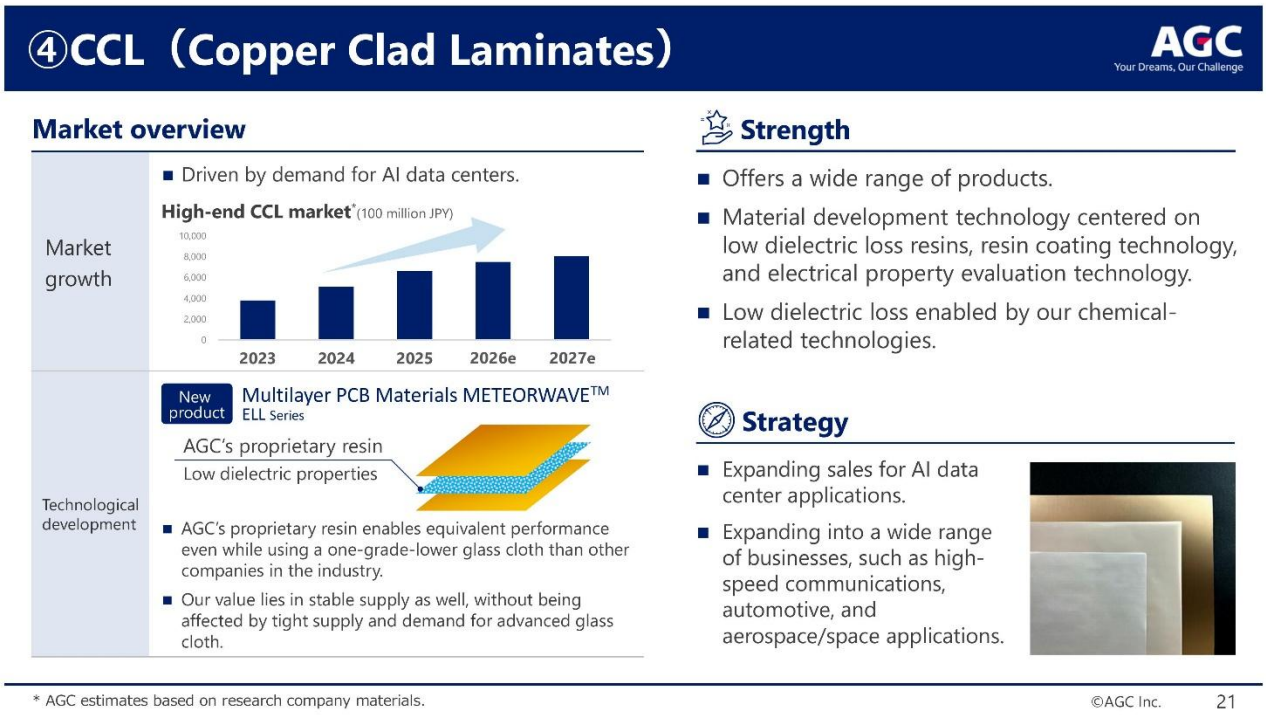
Our manufacturing sites are Motomiya Plant and Koriyama Plant of AGC Electronics. We have been investing in line with growing customer demand, and we will continue to invest actively going forward.


Next, I will explain CMP slurry, used in the polishing step of the semiconductor process. Since starting mass production in 2003, we have expanded the business with a focus on ceria slurry. We have maintained a leading position in ceria slurry for many years.

Because slurry is used in the semiconductor process, usage increases as semiconductor production lines and the number of layers that use ceria slurry grow. Our slurry is used in layers with high quality requirements, such as the STI layer, and is difficult to replace, so we expect demand to grow along with semiconductor growth going forward.

Our advantage is that we produce everything in-house, from the abrasive grains that are the raw material through to the slurry. Because we can respond to customer requirements within our own operations, we can provide high-quality slurry and solutions tailored to customer processes. And because we produce in-house consistently, we have an advantage in quality stability and supply stability, which earns customer trust.

As a new application, for 3D mounting in the back-end, silica slurry is currently the main material used, we believe, but needs for this ceria slurry are also emerging, which we find promising. In addition, our chemicals division is developing a cleaner used after slurry polishing, so AGC can provide customers with solutions through our combined capabilities.




Next, I will introduce CCL, copper clad laminate.

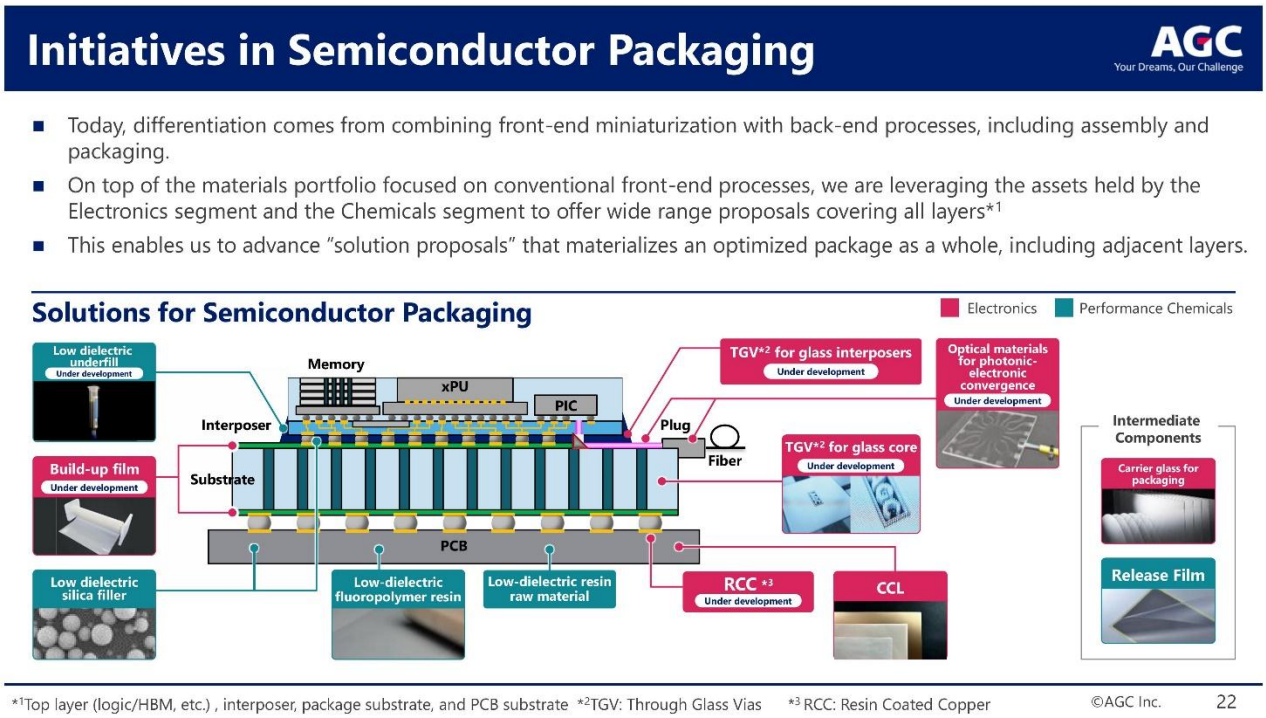
CCL is glass cloth impregnated with resin and sandwiched on both sides with copper foil. The copper is patterned to form circuits, and laminate is then used as a PCB.

CCL is used in a wide range of applications, and the market is growing rapidly, especially in AI-related uses. For resin, we have a low-dielectric-loss resin developed with chemicals-related technology, and with that at the core, plus coating technology and electrical-property evaluation technology, we are expanding sales using these as our strengths.

To reduce dielectric loss, there is the approach of using the glass cloth material itself and the approach of lowering the dielectric loss of the resin impregnated into the glass cloth. The material that currently suppresses dielectric loss most in glass cloth is quartz, but it is difficult to manufacture and also has drawbacks in its properties.

If our low-dielectric-loss resin is used, the same glass cloth can deliver higher performance, and in some cases the required performance can be achieved even by dropping the glass cloth grade by one. With glass cloth supply and demand currently tight, we believe that using our resin can contribute to the industry in terms of stable supply. We have begun supplying prototypes for the next-generation 224 Gbps applications, and if adoption is decided here, we can expect a sales increase from next year onward.

A new product in this field is RCC, or resin coated copper. This removes the glass cloth from CCL, and because there is no glass cloth, it can be made thinner and its flatness improves, making multilayering easier. As high-speed communication advances going forward, the improved flatness reduces signal-pattern degradation, which is one of the technical advantages we expect.




Lastly, I will explain our initiatives in the semiconductor packaging field.

This is a cross-section of an advanced package. Memory and logic semiconductors are connected to the substrate via an interposer and so on. At the bottom is the PCB, which connects to the circuit. And to handle higher signal speeds, photonic-electronic convergence technology, which connects both electrical and optical signals, is used.

AGC is developing a glass interposer for the part that connects the semiconductor chip and the substrate. For the substrate, we are developing a glass core and build-up film. We are putting particular effort into the glass core, because it is an important material for the future enlargement and lower power consumption of packages and chiplets, and has a high possibility of becoming a large market.

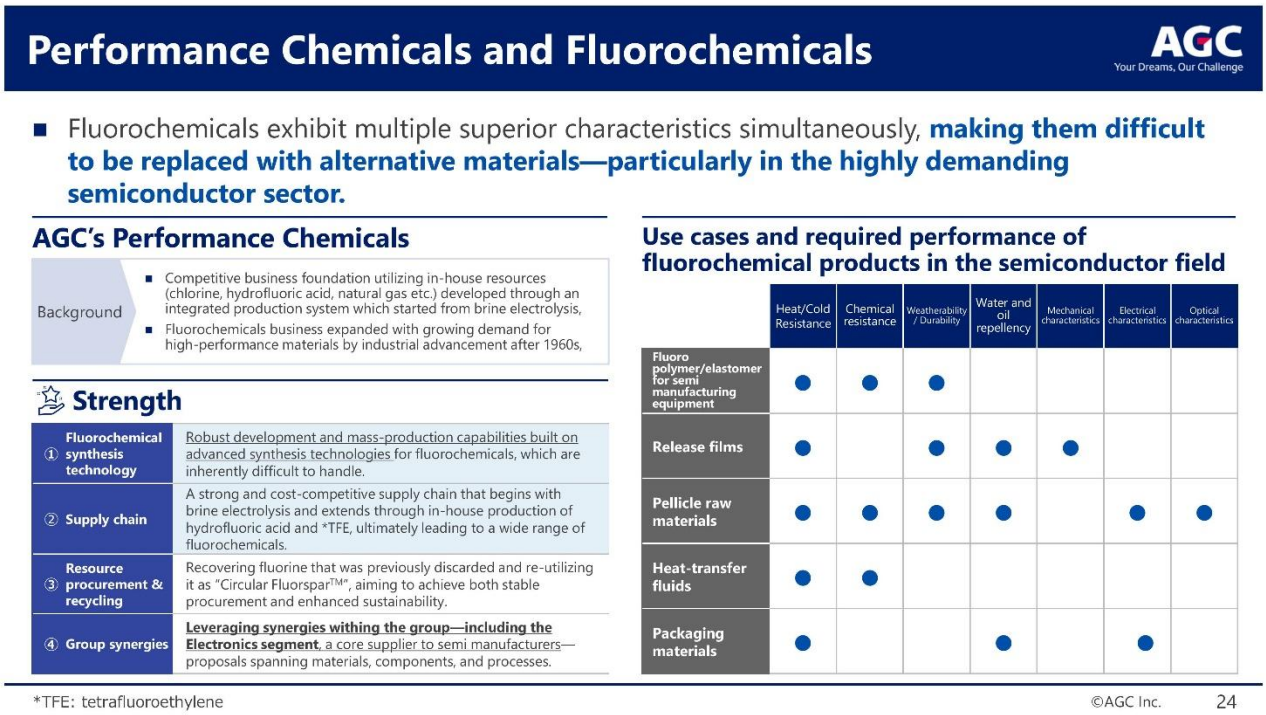
For the PCB, we are mass-producing and supplying copper clad laminate, and the RCC I mentioned earlier is also under development. As a material used for packaging process, we are mass-producing and supplying carrier glass. And to handle higher signal speeds, in photonic-electronic convergence, which connects both electrical and optical signals, we are developing MLAs, or microlens arrays, that control and connect light, as well as transmitting polymers and glass waveguides.

What I have introduced so far is handled by Electronics segment, but in Chemicals segment as well, we are developing low-dielectric underfill and other low-dielectric products for each layer. And as a process material, chemicals also supplies release film.

In this way, AGC has product groups for each layer, and we make proposals and commercialize products at each layer. Drawing on our knowledge of each layer, we will continue to make proposals for optimized solutions that include adjacent layers, from our standpoint as a materials manufacturer.

That concludes my explanation of the strategy and products of AGC's Electronics semiconductor business. This ends the Electronics segment. Thank you.

**Nakagawa:** Thank you, Suzuki. Next, Mr. Momii, please go ahead.




**Momii:** I am Momii, President of the Chemicals segment. From here, I will explain the business of the Performance Chemicals business of the Chemicals segment.

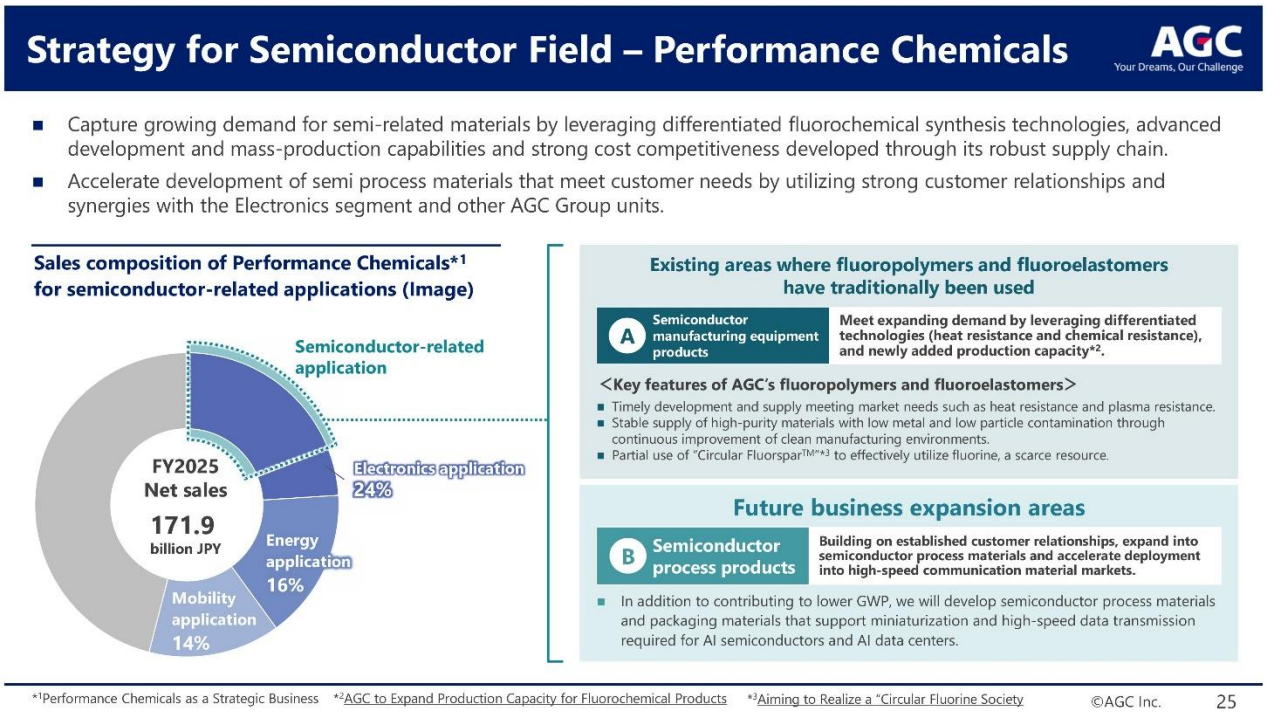
With fluorochemistry as our core technology, our business offers a wide range of high-performance materials essential to the semiconductor manufacturing process. Today, I will introduce the growth strategy for the semiconductor-related business and five main chemicals products, along with development items.

Our Performance Chemicals business is built on an integrated production system that starts from the electrolysis of brine. Using our own resources, such as chlorine, hydrofluoric acid, and natural gas, we have built a strong, cost-competitive business base.

Fluorine products can simultaneously achieve multiple advanced properties, such as heat resistance, chemical resistance, and excellent electrical and optical characteristics, giving them an advantage that is hard to replace with other materials.

As shown in the table on the right side of this slide, AGC's fluorine products are adopted and under evaluation across a wide range of semiconductor manufacturing steps, including fluoropolymer and fluoroelastomer for semiconductor manufacturing equipment, release film, pellicle raw material, thermal media, and packaging materials.

Our strengths come down to four points. First, advanced synthesis technology for fluorine products. Second, a strong supply chain that starts from brine electrolysis and runs from hydrofluoric acid through to fluorine products. Third, resource recycling through “Circular Fluorspar.” And fourth, the use of synergies within the AGC Group, starting with the Electronics segment.




Our business's strategy in the semiconductor field consists of two broad directions.

The first is materials for semiconductor manufacturing equipment, where fluoropolymer and fluoroelastomer have traditionally been used. Here, we will firmly meet expanding demand by leveraging differentiated technologies such as heat resistance and chemical resistance, together with the capacity expansion at our Chiba Plant, the mother plant for performance chemicals.

The other is materials for the semiconductor process, which we see as the axis of our future growth. Drawing on the customer relationships we have built so far, we will accelerate the expansion of our semiconductor process materials and our entry into the high-speed communication materials market. We are also focusing on developing new products that address the miniaturization and high-speed communication required for AI semiconductors and AI data centers.

Performance Chemicals net sales in 2025 were JPY171.9 billion. Most of the electronics applications, which account for 24% of that, are semiconductor-related applications. We plan to raise this ratio through both new product launches and the expansion of existing products.

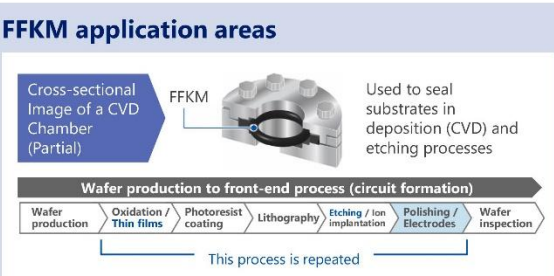
## ① Fluoropolymer and Fluoroelastomer Components for Semiconductor Manufacturing Equipment (AFLAS™ FFKM) 1/2

A Semiconductor manufacturing equipment products

### Market overview

| | |
|---|---|
| What is FFKM | ■ Common name for perfluoroelastomers<br>■ **A high performance fluoroelastomer** with a fully fluorinated structure in which all hydrogen atoms are replaced by fluorine. |
| Applications | Used as sealing materials inside semiconductor manufacturing equipment. |
| Required characteristics | ■ **Resistant to a wide range of chemicals**, including acids, bases, solvents, and oxidizers.<br>■ **Maintains long term elasticity and sealing performance under high temperature conditions.** |
| Market growth | ■ Demand for FFKM continues to grow each year in line with increasing semiconductor demand.<br>■ Although demand fluctuates with equipment utilization rates, stable replacement demand is expected.<br>(In etching processes, the harsh plasma environment requires replacement once every quarter.) |

### FFKM application areas




### Supply chain

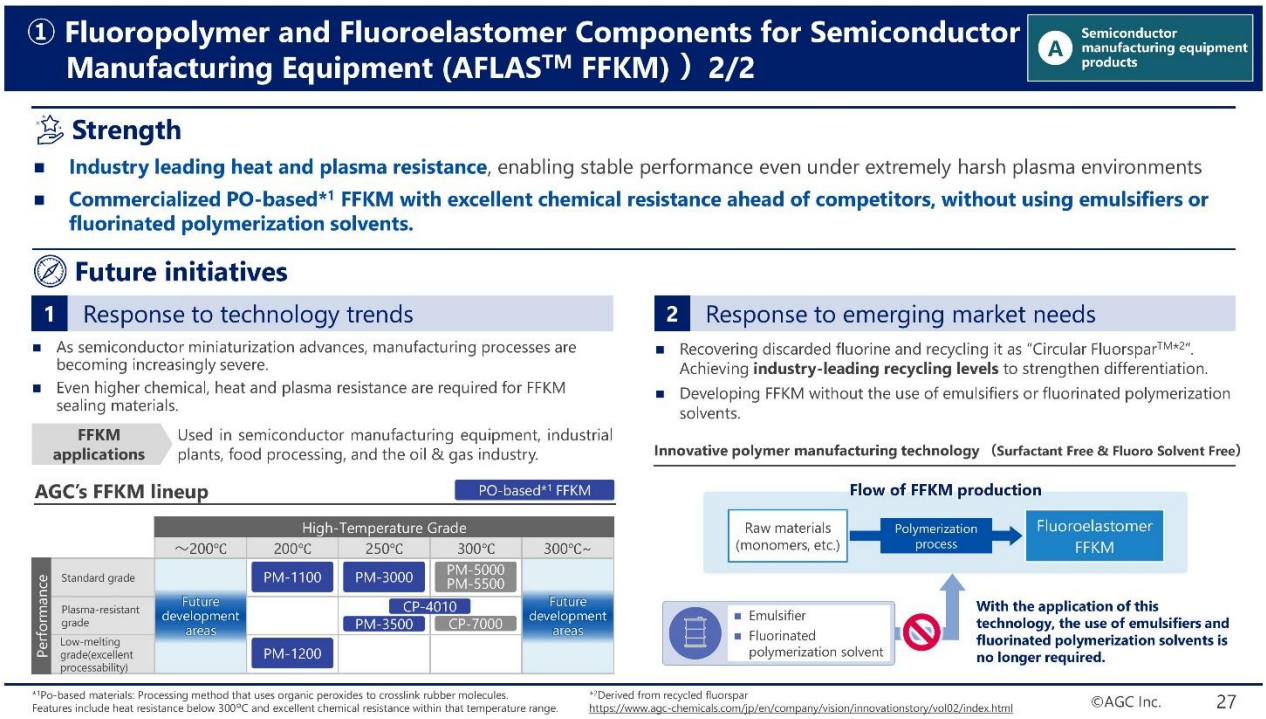

 26

Now I will explain specific product groups and development items. The first I will explain is the perfluoroelastomer for semiconductor manufacturing equipment, AFLAS™, known as FFKM.

FFKM is a high-quality fluoroelastomer with a fully fluorinated structure in which all hydrogen atoms are replaced by fluorine. It is used as a sealing material inside semiconductor manufacturing equipment and is an indispensable material for sealing between components in CVD and etching processes.

A noteworthy point in the market environment is the presence of stable replacement demand. In the etching process in particular, the harsh plasma environment requires replacement once per quarter, so we can expect continuous replacement demand linked to semiconductor production activity.

In the supply chain, AGC manufactures FFKM, O-ring makers process it into sealing materials, and it is then supplied to semiconductor equipment makers and ultimately to semiconductor makers.




The strength of our FFKM lies in its industry-leading heat resistance and plasma resistance. We deliver quality that can be used stably even in extremely harsh plasma environments.

We are also ahead on the environmental front. As shown in the lower-right figure on the slide, we were the first in the industry to commercialize an emulsifier-free, fluorinated-solvent-free FFKM that uses none of the emulsifiers or fluorinated polymerization solvents normally used in the manufacturing process.

Going forward, we will pursue two axes. First, we will address the harsher processes that come with the semiconductor miniaturization trend by pursuing further improvements in chemical resistance, heat resistance, and plasma resistance.

Second, we will achieve an industry-leading recycling level using Circular Fluorspar, made by recycling fluorspar, which is indispensable as a raw material for fluorine products, and differentiate ourselves on sustainability as well.

As shown in the product lineup on the left side of the slide, we already offer products that cover a wide temperature range, and going forward we will also move into the ranges below 200 degrees Celsius and above 300 degrees Celsius.

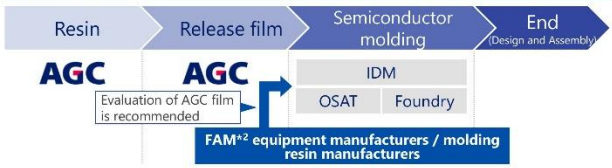
## ② ETFE-based Release Film (Fluon™ ETFE FILM) 1/2

B Semiconductor process products

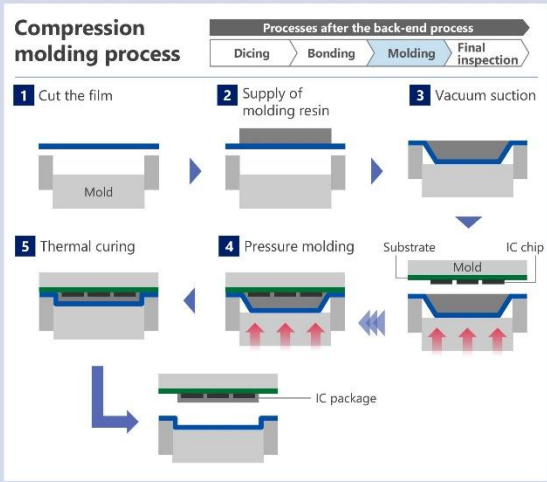
### Market overview

| | |
|---|---|
| Applications | Release film used in the semiconductor back-end molding process (consumable) |
| Required characteristics | Release properties / Mold-following capability<br>Heat resistance / Purity<br>Cushioning properties |
| Market | ■ **AGC share: No.1 in the world**[*1]<br>■ Correlates with semiconductor production volume. Expected to increase in quantity in line with market growth<br>■ Also used in HBM |

### Supply chain




### Illustration of how release films are use




*1Based on sales / estimates by AGC *2FAM: Film Assisted Molding A high-precision molding method in semiconductor packaging that uses film during resin molding. ©AGC Inc. 28

Next, as a semiconductor process material, I will explain our ETFE release film, AFLEX.

This product is a consumable used in the molding process in the semiconductor back-end, the process shown on the right side of the slide. It plays an important role: when an IC chip is sealed with resin, it is placed between the mold and the resin to ensure release properties that prevent the mold and resin from adhering.

In the market, AGC has established the top share in the world. It is a model where demand increases in proportion to semiconductor production volume, and it is also used in HBM, the next-generation semiconductor memory, so it is a field where we expect continued growth.

A feature of the supply chain is that we have built a strong position in which equipment makers and molding resin makers recommend evaluating our film.

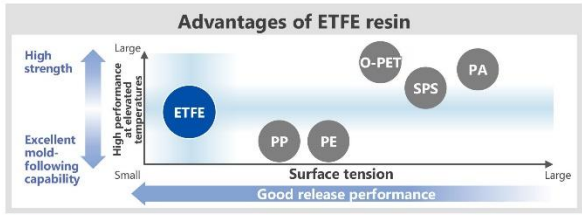
## ② ETFE-based Release Film (Fluon™ ETFE FILM) 2/2

B Semiconductor process products

- By integrating proprietary resin design and molding technologies, **we maintain the world's No.1 share in semiconductor release films.**
- We will expand into next-generation molding processes that accommodate increasing package sizes.

### Strength

- **Achieving strength, mold-following capability, and release performance simultaneously—properties difficult to balance with other materials—establishing the industry's de facto standard.**
  - ➡ Customizable solutions are available.
- The world's No.1 ETFE resin supplier and **the only company capable of integrated development and production—from raw resin to film—for semiconductor applications.**
- Strong relationships with equipment manufacturers and semiconductor manufacturers.
  - ➡ As molding processes is highly stringent in changes, switching suppliers is extremely difficult, enabling us to maintain a high market share.




### Future initiatives

- Maintaining high share in the existing (general-purpose semiconductor) market
- Strengthening development for cutting-edge packages such as HBM
- Development and expansion of AGC's proprietary antistatic film lineup.
  - ➡ Adoption in advanced applications requiring electrostatic discharge protection

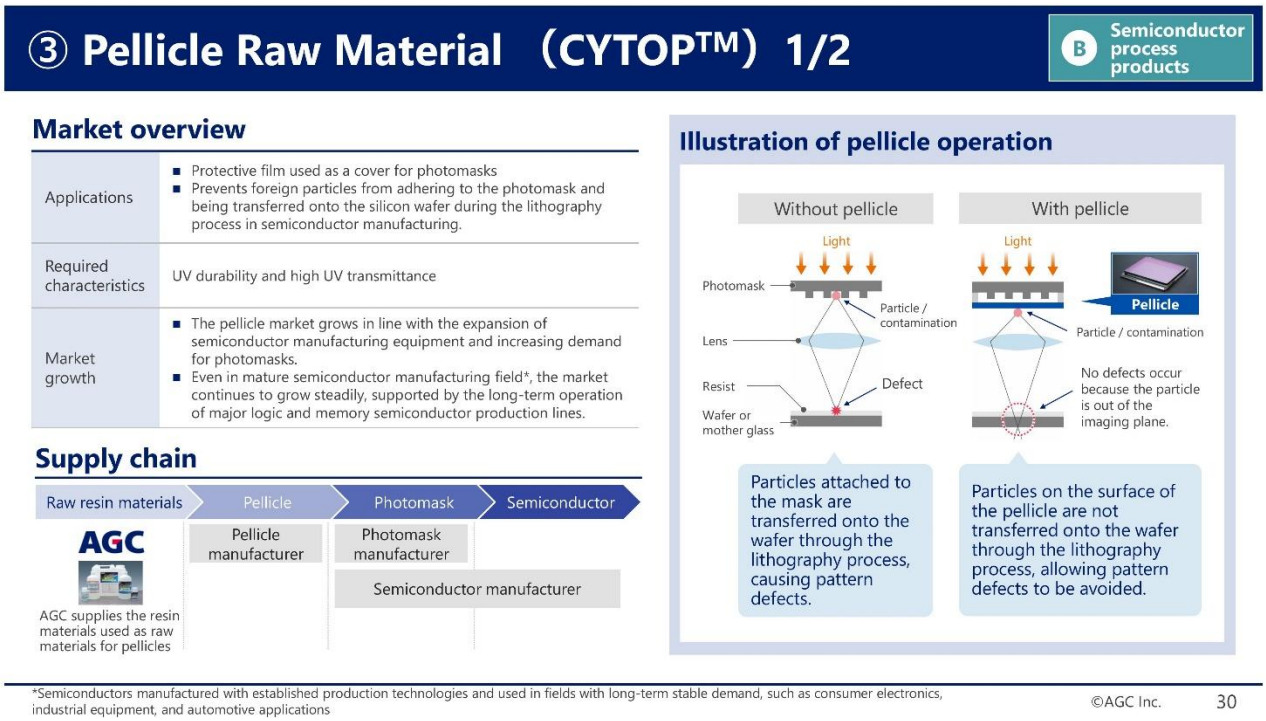
Final product image

 29

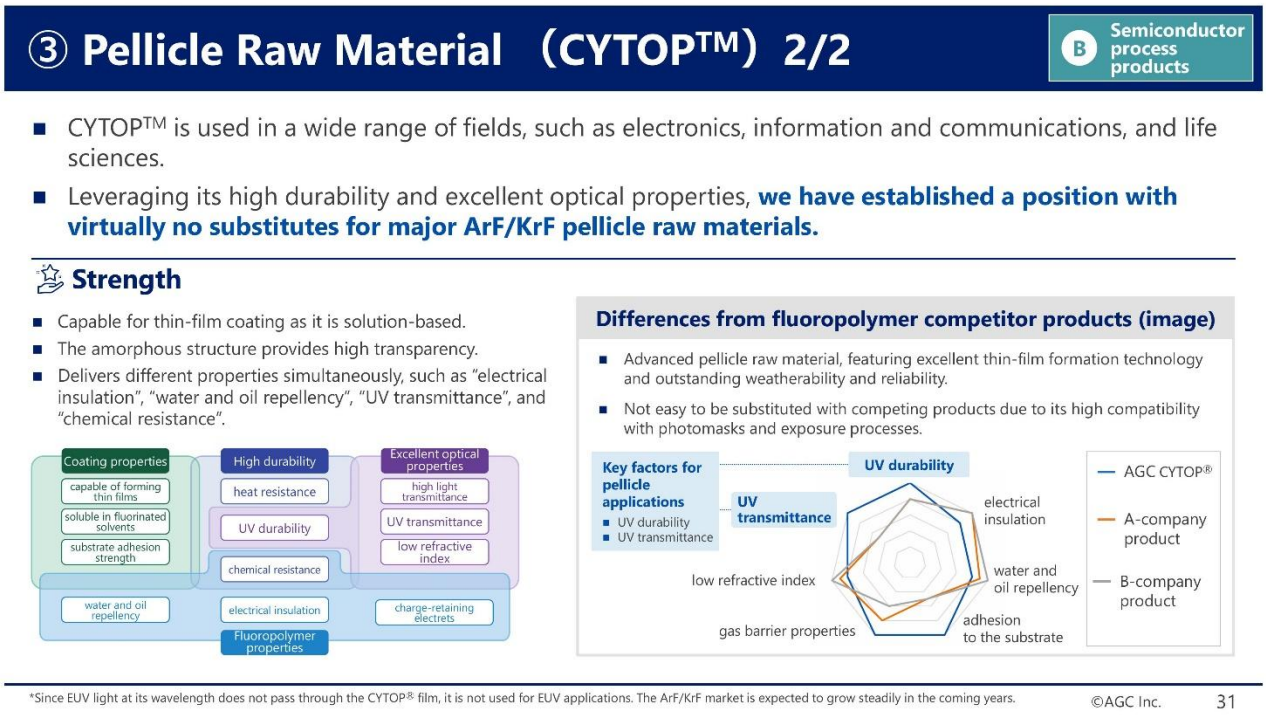
The competitive advantage of this ETFE release film, AFLEX, lies in the fusion of our own resin design and molding technologies. As shown in the figure on the right side of the slide, ETFE resin simultaneously achieves three properties that are difficult to balance with other materials: film strength, flexibility to follow the mold, and release performance, establishing the de facto standard in the industry.

Furthermore, as the world's number one supplier of ETFE resin, AGC is the only company that can develop and produce in-house consistently, from the raw resin to the film. In addition, change control in the molding process is extremely strict and the hurdle to switch to a competing product is very high, so we expect to maintain a high share.

Going forward, we will strengthen development for advanced packages such as HBM and expand our lineup of antistatic film for advanced applications where electrostatic discharge protection is essential.




The third product is the pellicle raw material CYTOP™. As shown in the figure on the right side of the slide, a pellicle is a cover film that protects the surface of the photomask in the lithography process of semiconductor manufacturing. It is an extremely important material for quality control, preventing foreign particles from adhering to the photomask and pattern defects from being transferred onto the silicon wafer. As the figure on the slide shows, with a pellicle, foreign particles on the surface do not form an image on the wafer during lithography, so defects can be avoided.

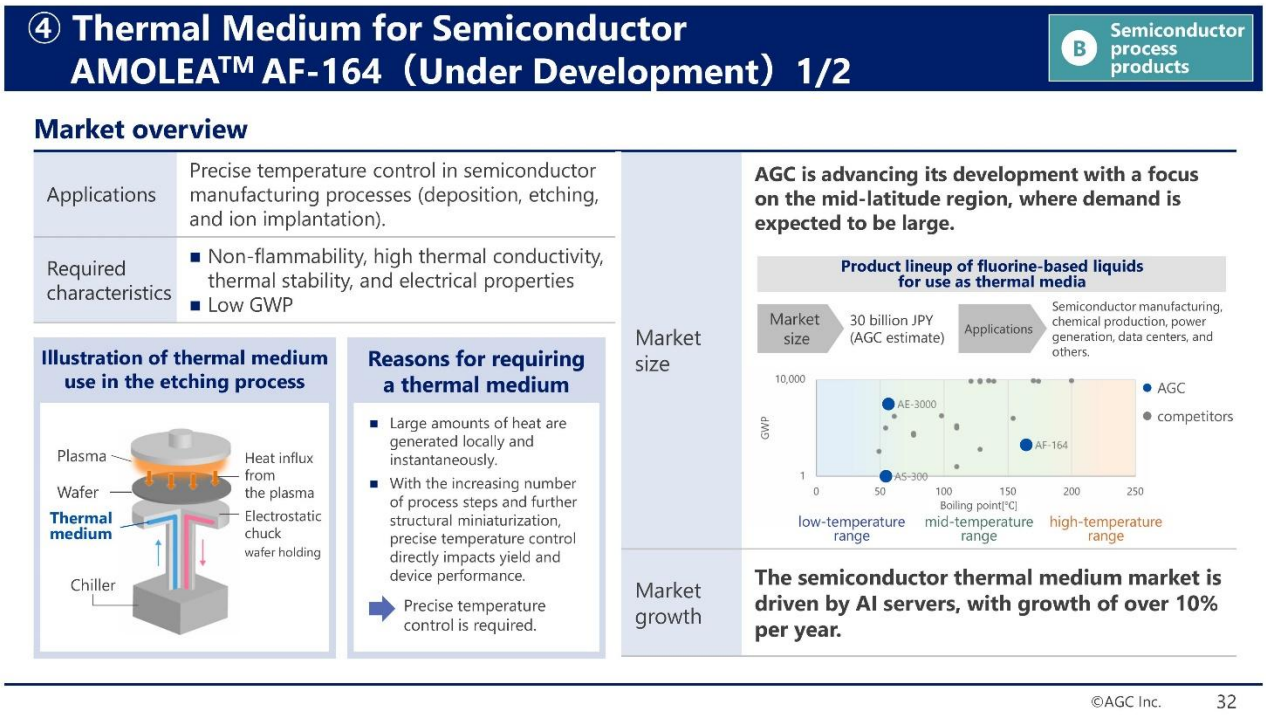



AGC supplies CYTOP™, the fluorine-based resin that is the raw material for this pellicle.

Market growth is linked to the expansion of semiconductor manufacturing equipment and increasing demand for photomasks, and even in the mature semiconductor manufacturing field, we expect steady growth backed by long-term operation.

The greatest strength of CYTOP™ is that it has established a virtually unrivaled, dominant position as a raw material for ArF and KrF pellicles. The reason lies in three differentiated properties. One is that, being solution-based, it can be coated as a thin film; another is its very high transparency from its amorphous structure; and the third is that it can simultaneously achieve advanced properties such as electrical insulation, water and oil repellency, UV transmittance, and chemical resistance.

As shown in the radar chart on the right side of the slide, in both UV durability and UV transmittance, which are most valued for pellicle applications, our CYTOP™ has a clear advantage over competing products, and it has established a firm position in the market as a product that is extremely difficult to replace.




The fourth item I will introduce is a development product, the thermal medium for semiconductor manufacturing processes, AMOLEA™ AF-164.

In semiconductor manufacturing processes, especially deposition, etching, and ion implantation, large amounts of heat are generated locally and instantaneously. As the number of process steps increases and structures become finer, the precision of temperature control directly affects yield and device performance, so precise temperature control has become essential.

We estimate the market for fluorine-based liquid thermal media at about JPY30 billion, and it is growing at an annual rate of 10% or more, driven by AI servers. We are advancing development with a focus on the mid-temperature range, where demand is large. While existing competitors have strengths in the high- and low-temperature ranges, we have taken a strategic positioning that targets the mid-temperature range, the core of the market.

## ④ Thermal Medium for Semiconductor AMOLEA™ AF-164 (Under Development) 2/2

B Semiconductor process products

- Newly developed AMOLEA™ AF-164 with a competitive advantage. Built based on relationships with equipment manufacturers fostered through fluoropolymer and fluoroelastomer supply, as well as the know-how gained through the development and mass production of refrigerants and cleaning agents.
- Continue to expand the business by exploring further applications in semiconductor manufacturing processes.

**AF-164**

- A fluorinated solvent with a boiling point of 164℃ as a single chemical substance.
- Used in semiconductor manufacturing etching processes

### Strength

- With AF-164 alone, a wide temperature range can be covered. No need to switch between multiple thermal medium, **reducing customers' equipment operation and procurement burdens and helping lower total costs.**
- Small environmental impact with low GWP.
- Low geopolitical risk. Produced domestically in Japan from upstream raw materials.

### Comparison with competing products

| Product | Manufacturer | Operating temperature range for use in the mid-temperature band | GWP (environmental considerations) | Country of manufacture (geopolitical risk) |
|---|---|---|---|---|
| AF-164 | AGC | ◎ 30~130℃ | ◎ | ◎ |
| - | B-company | ○ -10~100℃ | × | × |
| - | C-company | ○ -30~90℃ | ○ | ○ |
| - | D-company | ○ -30~80℃ | ○ | ◎ |
| - | E-company | × -60~60℃ | ◎ | ? |

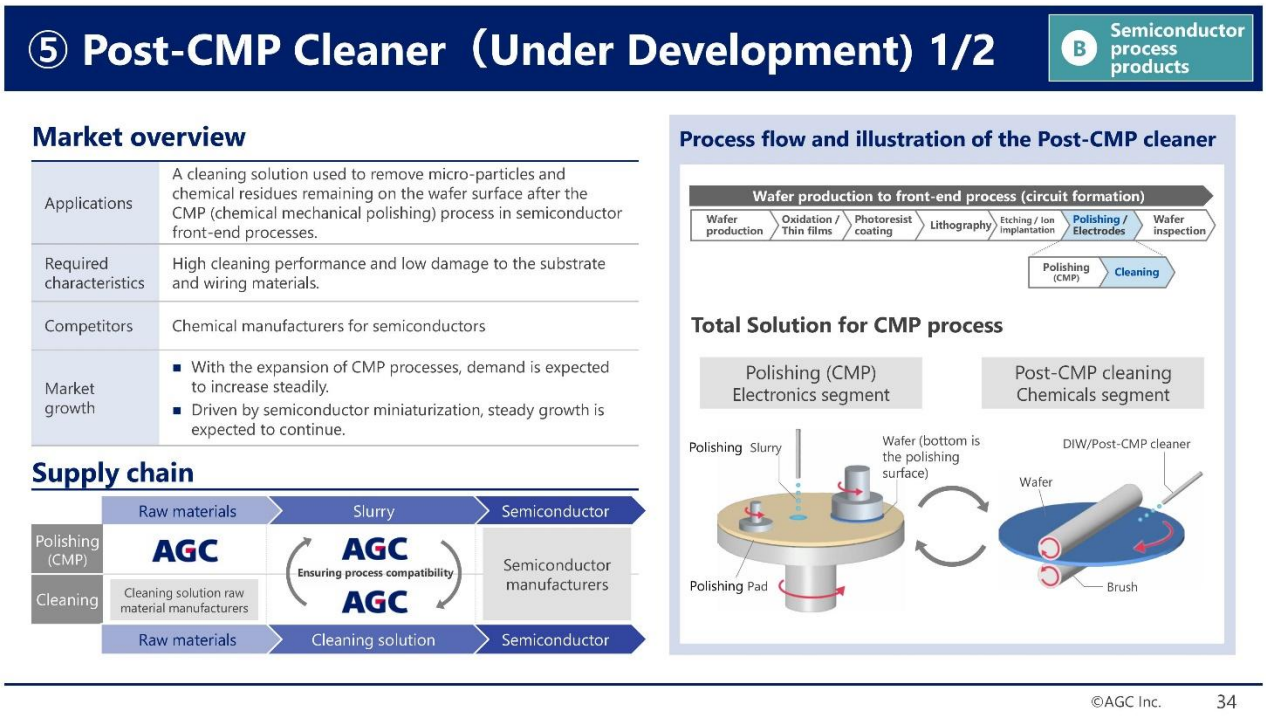
 

AF-164's competitive advantages come down to three points. First, as a single chemical substance with a boiling point of 164 degrees Celsius, it can be used across a broad temperature range. For customers, this eliminates the need to use multiple thermal media, helping reduce the burden of equipment operation and procurement and lowering total costs.

Second, it has an extremely low GWP, or global warming potential, and a small environmental footprint. Looking ahead to tighter environmental regulations, this is a major advantage.

Third, because AF-164 is produced in an integrated process in Japan from upstream raw materials, it carries low geopolitical risk.

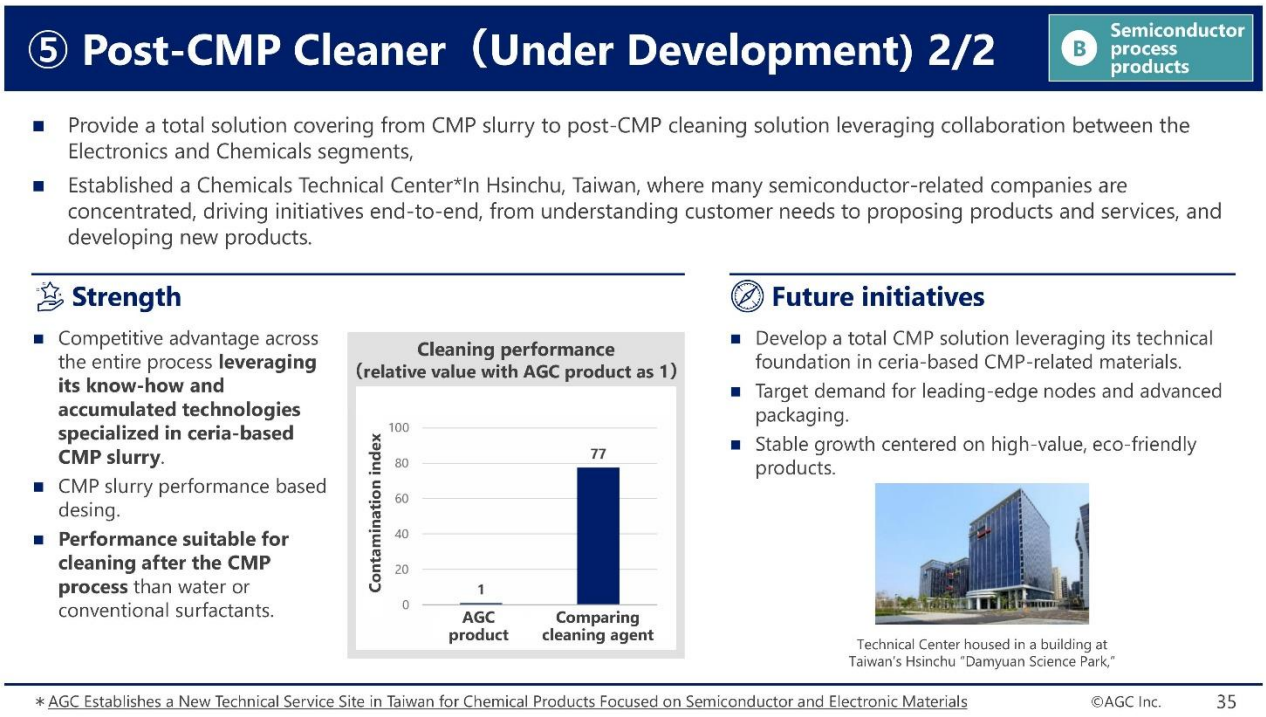
As shown in the comparison table on the right side of the slide, AF-164 is the only product that earns the top rating on all three axes: usable temperature range, environmental considerations, and geopolitical risk. Going forward, we will work to penetrate the market by leveraging the relationships with equipment makers that we built through fluoropolymer and fluoroelastomer.




The last item I will introduce is also a development product, the post-CMP cleaning solution.

CMP, which also came up in the earlier explanation by Suzuki of Electronics segment, is chemical mechanical polishing, an important step that planarizes the wafer surface in the semiconductor front-end. This development product is a cleaning solution that removes the fine particles and chemical residues remaining on the wafer surface after polishing.

What I would particularly like you all to note here is the synergy within AGC Group. The Electronics segment handles the polishing slurry for CMP, and the Chemicals segment handles the cleaning solution, enabling us to offer a total solution for the CMP process. Against the backdrop of semiconductor miniaturization, the CMP process is expanding, and we expect demand for cleaning solutions to grow steadily.




The strength of the post-CMP cleaning solution lies in a design that leverages our knowledge and accumulated technology specialized in ceria-based CMP slurry. As shown in the cleaning-performance comparison graph on the slide, our product delivers far superior performance in removing contamination after the CMP process compared with general cleaning agents. This is differentiation we can achieve precisely because we design the cleaning solution with a thorough understanding of the properties of CMP slurry.

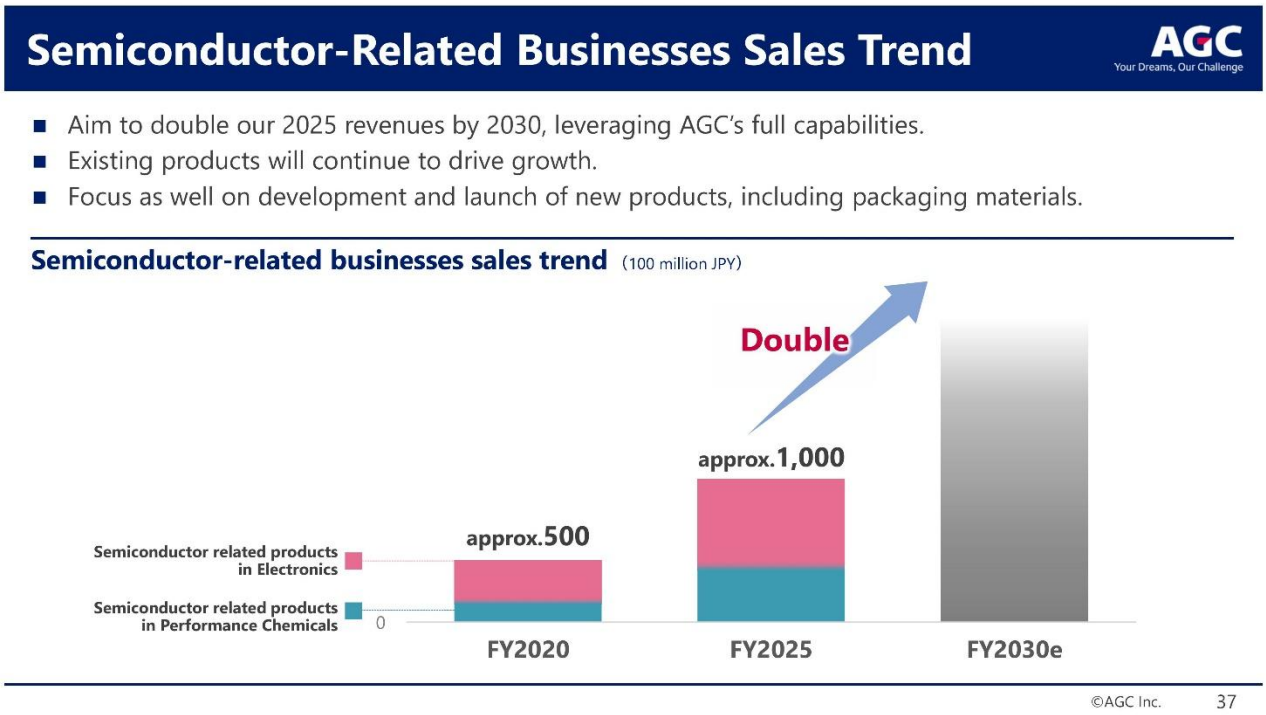
We have also established a Chemicals Technical Center in Hsinchu, Taiwan, where many semiconductor-related companies are concentrated. We have put in place a structure that integrally advances everything from grasping customer needs to proposing products and developing new products.

Going forward, we will focus on capturing demand for leading-edge nodes and advanced packaging, and we aim for stable growth centered on high-value-added, environmentally friendly products.

That concludes my explanation of the semiconductor-related products of the Performance Chemicals business. Thank you very much.

**Nakagawa:** Thank you, Mr. Kurata, Mr. Suzuki, and Mr. Momii.

Mr. Kurata, please give us the closing summary. Thank you.




**Kurata:** As a closing summary, AGC aims to double the sales of its semiconductor-related business in 2030 versus 2025. We will achieve this through continued growth of our existing high-share products and the launch of new products such as packaging materials. There are three reasons behind this growth.

The first is reliably capturing solid demand for existing products. For example, with EUV mask blanks, lens materials for lithography equipment, CMP slurry, and release film, we will secure a high market position and stable earnings.

The second is expanding our product portfolio. By focusing on back-end packaging materials, we will broaden our front-end-centered earnings structure and strengthen solution proposals from upstream to downstream.

The third is the fusion of technology, supply chain, services, and marketing across the group. The coordination between electronics and performance chemicals, which lets us provide everything from materials to components and processes as a package, is also one of AGC's strengths.

Based on these three grounds, and on our product and technology groups with clear strengths, we will reliably carry out our investment plans in growth areas and aim for sustainable earnings expansion.

That concludes the overall presentation. Thank you.

**Nakagawa:** Thank you.

## Question & Answer

**Nakagawa [M]:** Now, we will move to the Q&A session. First, a voice question.

**Questioner [Q]:** Let me ask two quick points.

First, a basic confirmation. I'm looking at page 37, the last slide. In particular the pink portion, the electronics semiconductor-related products. Since the whole is about JPY100 billion, the pink part is probably on the order of JPY70 billion to JPY80 billion, I'd guess.

Earlier you explained four products, from lens materials to CCL. I'd like to get a rough sense of the share each one occupies within that JPY70 billion to JPY80 billion; a rough image is fine.

Also, I would also like to ask how much profit the electronics business is generating. Within the Electronics segment there are display and electronic materials, and within electronic materials there are semiconductors and optoelectronics. The composition ratio within electronic materials is fine, so please tell me, to the extent you can, the sales scale of each product and a rough image of the profit from these electronics semiconductor-related products.

**Nakagawa [M]:** Thank you. Both of these are electronics questions, so I will ask Mr. Suzuki to answer.

**Suzuki [A]:** I, Suzuki, will answer the question just raised.

First, the first point. I can't go into individual detail, but the largest in sales scale within our business is the blanks business. Next come, the CMP slurry and CCL businesses, and after that the semiconductor lithography lenses. That is the order.

Next, the second point, profit. You can understand that, within electronic materials, semiconductors and optoelectronics are currently roughly half each in both sales and profit.

That said, looking ahead, semiconductors will grow going forward, so in terms of business scale we expect semiconductors to become the larger one.

**Questioner [Q]:** Thank you.

The second point is about CCL. I'd like to hear your sense of where you are uniquely positioned, integrated all the way from the materials.

In your resins, I believe you have traditionally done PTFE and, more recently, a cutting-edge, high-performance hydrocarbon type. Including these PTFE-based and hydrocarbon-based types, for the data center CCL you'll be targeting, has it already been adopted, or are you currently advancing sample work? Please share your outlook going forward, including that.

**Nakagawa [M]:** On CCL, Mr. Suzuki will answer this as well.

**Suzuki [A]:** Let me explain about CCL. As you just asked, we believe we can differentiate through the properties of the resin. Because our chemicals-related development is advanced, we develop the resin in-house as well. This is a very unique point for a CCL maker.

In low dielectric loss in particular, we are now launching a new product. Even now, in AI-related uses, we are mainly expanding sales for routers and switches, and it has been partly adopted. Especially when it comes to

224 Gbps, low dielectric loss becomes critical, so right now we are providing prototype products made with a new resin in order to expand sales.

We expect the shift to 224 Gbps to come especially from next year onward, so as these prototypes get evaluated, we see them contributing to results from next year onward.

The applications are, after all, routers and switches, and right now we are currently focusing our efforts in places that especially require that kind of low dielectric loss.

**Questioner [M]:** Thank you.

**Nakagawa [M]:** Thank you. Now we will move to the next questioner.

**Questioner [Q]:** Thank you for having me.

You spoke about doubling sales by 2030, which I take to mean aiming for about JPY100 billion in sales growth over five years. Could you tell me, as much as possible, which products will drive this, which products look likely to contribute the most to the sales growth, and a sense of their scale?

**Nakagawa [M]:** Thank you. This involves both electronics and performance chemicals, so Mr. Suzuki, and then Momii, will answer.

**Suzuki [A]:** First, let me explain from electronics. The whole roughly doubles, but in electronics' case, this doubling basically includes almost none of the back-end new products. It is built on growth in existing products.

For the back-end, there are still parts where we don't know what kind of new products will emerge, so to avoid creating misunderstanding, we have not included them.

Within that, as I mentioned earlier, the growth of blanks, which is a big one, and then CCL, will drive these sales. CMP slurry and lens materials for lithography equipment will also grow steadily with the number of tools and the increase in layers, so synthetic quartz for lithography and polishing will drive things as the second group.

**Momii [A]:** This is slide 25. In performance chemicals, as I introduced today, there are materials for semiconductor manufacturing equipment, centered mainly on resin and rubber, and materials for the semiconductor process, which we want to expand going forward.

As regards performance chemicals, we are likewise aiming to double. For materials for semiconductor manufacturing equipment, where we have done business for many years, we will aim for what you might call organic growth.

On the other hand, for materials for the semiconductor process, today I introduced development items such as thermal media and post-CMP cleaning solution, and the plan is to grow the semiconductor area of performance chemicals more strongly on this semiconductor process materials side through the launch of such new products.

**Questioner [Q]:** Thank you. In that case, let me ask one more question.

On page 22, the packaging-related solutions you presented as a focus area going forward. Looking at the products, there really are a lot of them.

Which products in particular do you expect to expand sales over the next five years, and around when do you envision each product's market sales ramping up? Could you tell me about the main ones?

**Nakagawa [M]:** For this as well, first Mr. Suzuki, and then Mr. Momii if there is anything to add. Please go ahead.

**Suzuki [A]:** Let me explain about packaging. There are various things, but the one with the greatest potential to become the largest market right now is, I think, glass core.

Resin is used for this now, but as packages get larger, resin has drawbacks in warpage and thermal stability , so there are high expectations for glass. So once glass core can properly be brought out as a product by the industry, I think it will spread fairly quickly as a replacement, so to speak, for high-performance uses, so if something gets big, it will be glass core.

Also, copper clad laminate, CCL, if it properly gets into the 224 Gbps applications needed for the AI servers I mentioned earlier, we expect large growth.

Then there is photonic-electronic convergence. I have a feeling this might spread relatively early, and we see it growing large in scale as well.

As I just said, looking to the future it's glass core, and at present it's copper clad laminate. With photonic-electronic convergence, the market scale is hard to gauge depending on how far along the value chain one goes, but if something comes early, I think it will be this.

**Momii [A]:** In performance chemicals, there is the low-dielectric fluoropolymer resin shown on the slide now. For this low-dielectric fluoropolymer resin, mass production, sales, and adoption evaluations are progressing at several major CCL makers, and against the backdrop of a buoyant AI server market, we expect shipments to increase going forward.

Next is the low-dielectric resin raw material. We have already put a supply structure in place for this as well, and we expect shipments to grow for high-speed communication board applications.

And, as written on the left, there is the low-dielectric silica filler. We are already preparing for mass production of this too, and we position it as a promising product that meets the need to lower the dielectric constant of AI server boards.

**Questioner [M]:** Thank you. That's all.

**Nakagawa [M]:** Thank you. Now we will move on.

**Questioner [Q]:** Thank you for the explanation.

On the CCL on page 21, it says you use a glass cloth one grade lower. Is this saying you can achieve with the first generation what currently uses a second-generation Low Dk, or that you can substitute the second generation where older glass is required? Could you add some detail on which grade range you are targeting?

Also, looking at METEORWAVE on your website and so on, I believe it is mainly modified PPE, but is the new ELL series PTFE or hydrocarbon? Could you explain that area?

**Nakagawa [M]:** This is CCL, both points. Mr. Suzuki, could you answer?

**Suzuki [A]:** First, the first question, the relationship between glass cloth and resin. As I said earlier, since the area we are targeting is the 224 Gbps domain, with conventional resin there was a possibility that performance could not be achieved without using quartz, but by combining it with the level currently used at 112 Gbps, in product-name terms something like NER, we now expect to be able to bring out that performance using the current cloth.

**Nakagawa [M]:** As for the second point, I, from IR, will respond at a later date.

**Questioner [Q]:** May I ask a separate question? On EUV blanks, as the CPU demand outlook improves, should I understand that demand from your major customers has become better than you saw at the start of the year?

For example, I believe net sales exceeded JPY4 billion in 2024; is a level around there coming into view? Also, if there are areas where new mass-production adoption is increasing beyond your major customers, please let me know. That's all.

**Nakagawa [M]:** Then, on EUV mask blanks, Mr. Suzuki, please go ahead.

**Suzuki [A]:** Let me explain about EUV mask blanks. I can't answer down to the details of individual customers, but comparing last year and this year, usage of EUV blanks has increased at each customer and is stabilizing.

Last year, demand from one particular customer declined somewhat, but this customer's usage has also returned this year, and looking at the recent market situation and shipment situation, we expect stable demand.

In terms of customers, there are not that many customers for EUV mask blanks, but our product usage at each customer has been increasing, so in that sense, compared with 2024, our customer portfolio has shifted in a direction that should allow us to expect more stable growth.

Therefore, with last year as the bottom, we are recovering this year, and this year will exceed 2024 demand on a comparable-period basis, and from next year onward we project exceeding that further.

**Questioner [M]:** Understood. Thank you.

**Nakagawa [M]:** Now we will move to the next questioner. Mr. Maeda from SMBC Nikko Securities, please go ahead.

**Questioner [Q]:** Thank you for your continued support. Thank you for the explanation. I have two questions; the first is page 25.

Whether you frame it as performance chemicals semiconductor-related or as electronics applications is fine, but for each product you explained today, could you give me a rough sales breakdown by composition? And from the standpoint of profit contribution, which areas in particular contribute the most?

**Nakagawa [M]:** On performance chemicals' sales and profit contribution, Mr. Momii will answer. Please go ahead.

**Momii [A]:** Thank you for the question. I'm sorry, but regarding the specific sales figures or the ratio of each product for the question just asked, we would like to refrain from disclosing them this time.

In terms of which products will drive profit contribution or sales contribution, it is the area we will expand going forward, shown on the slide. The semiconductor process materials business already has a very high profit margin even for existing products, and recognizing that we can capture more value in such areas, Performance Chemicals plans to launch development items for semiconductor process materials onto the market one after another going forward. I hope you'll understand it that way.

**Questioner [Q]:** Thank you.

For the other question, recently there has been talk that AI GPU architectures might use some fluorinated material in the backplane. How do you view your business opportunity there?

Also, a few years ago there was talk of PFAS regulation; is there anything to be concerned about, such as regulatory risk for fluorine products?

**Momii [A]:** Indeed, as you point out, on PFAS regulation, the direct impact on our business and products is extremely limited at this point, but as you know, the regulatory discussion is advancing, centered on Europe. In that sense, we do recognize it as one of the significant risks for the Performance Chemicals business as well.

However, for our part, applications such as 5G and 6G communications, and the semiconductor-related products I introduced today, are indispensable for manufacturing semiconductors. So, while continuing to supply products, we intend to respond appropriately to regulatory trends by reducing the environmental footprint of our manufacturing processes, enhancing emissions management, and also pursuing the study of alternative technologies.

On the first question, we are aware that there is a need for fluorine-based materials from a low-dielectric angle for AI, and although it is not yet at a stage I can introduce today, I'd like to note that we are working on it in development.

**Questioner [Q]:** Thank you. As a follow-up, within that development, how do you currently view your company's position?

**Momii [A]:** In that sense, we still do have materials we have held so far from a low-dielectric angle, but for the areas where requirements will rise from here, we are not yet in a position to assess whether we are clearly ahead or lagging.

**Questioner [M]:** I understand very well. Thank you.

**Nakagawa [M]:** Thank you. Now, the next questioner, Please go ahead.

**Questioner [Q]:** Thank you for your continued support. Thank you. I also have two questions.

I am looking at page 22, about glass core. I believe there is talk that sample shipments of TGV-equipped substrates, glass core, have begun in some cases, while there has also been mention within your company that it might be somewhat delayed, possibly after 2030. How do you view the current ramp-up timeline? If anything has changed in light of recent conditions, please touch on it. That's the first point. Please go ahead.

**Nakagawa [M]:** I believe the question is how you currently view the ramp-up timing of TGV substrates. Mr. Suzuki, please go ahead.

**Suzuki [A]:** I think this is about the ramp-up timing of TGV substrates for packaging, glass core. There are some technical aspects, not just for us but across the industry, and while we initially thought it would be from around 2028, my sense is that the ramp-up will happen around 2029.

Customers, too, won't start doing this on a large scale; they'll begin applying it from around 2028 and gradually increase. Once a glass core supply structure is somewhat in place and the technical issues are resolved, I think it will grow suddenly, so in answer to your question, I'd say around 2029.

**Questioner [Q]:** Understood, thank you. Let me ask one more question.

It's about the optical components for photonic-electronic convergence on page 22. These are also development items, so I believe they aren't included in the sales-doubling plan through 2030, but around

when, and specifically what kind of things, at roughly what scale, do you see ramping up? I'd appreciate your current image of that.

**Nakagawa [M]:** Mr. Suzuki, please go ahead.

**Suzuki [M]:** For this, I'll have Mr. Maeda explain.

**Maeda [A]:** I am Maeda from the Electronics segment. On the photonic-electronic convergence you just asked about, I believe adoption of photonic-electronic convergence is just now starting in areas such as the switch that NVIDIA recently released.

What we can currently propose is what Mr. Suzuki mentioned earlier, the microlens array, known as the MLA, which creates collimated light and couples it into a grating. We are receiving many inquiries for components of this kind; that is the current situation.

And further into the future, as integration advances further, we are also receiving various inquiries, including for the waveguide introduced earlier, with sample provision and the like even at this point.

You asked about the scale of sales. It's hard to give a single specific figure, since it depends a lot on how far we extend the value chain, but we are aiming for a business on the order of tens of billions of yen and want to advance development.

**Suzuki [A]:** In a future market that becomes tens of billions of yen, we want to take a portion of it.

In terms of market expansion, we believe it will likely start to take off around 2028–2029, and that the photonic-electronic convergence will really begin to grow significantly in the 2030s

**Questioner [Q]:** Thank you for the details.

One follow-up. When you say adoption has already started, does that mean some of your products have already been adopted? What are the facts there? I'd appreciate it if you could confirm.

**Suzuki [A]:** Our current status is development and prototyping; mass production is still ahead of us.

**Questioner [M]:** Understood, thank you. That's all from me.

**Nakagawa [M]:** Thank you. We have a few minutes left, but we will move to the next questioner.

**Questioner [Q]:** Thank you. I have one question, please.

Looking at the overall flow, right now, with the AI theme, there's attention on low-dielectric glass and CCL and the like. But going forward, as glass core emerges, there's the risk that CCL gets replaced by glass core and so on. And since in your case you do fluorine-based resin, when I think about its compatibility with glass cloth, how will the fluorine-based part be used?

Could you organize, as far as you can, over what kind of time frame these products, CCL and fluorine-based resin, will grow before things eventually flow toward glass core, and whether they get replaced? That's my question. That's all.

**Nakagawa [M]:** Thank you. On packaging materials, first Mr. Suzuki will answer, and then Mr. Momii will also speak about the fluorine-based side. Please go ahead.

**Suzuki [A]:** First, the relationship between glass core and PCB in packaging that you asked about. Even if glass core becomes widespread, the demand for PCB, which for us CCL, won't disappear. Glass core is, after all, just the substrate's resin becoming glass, so even if that happens, the PCB remains, and so we don't think there's any cannibalization for us from it.

Also, looking at the bigger picture going forward, things like integrating the photonic-electronic convergence I mentioned with the substrate and glass core might emerge, but this too is more of a plus as a business opportunity, so we don't think it cannibalizes.

There may be various proposals about how functionality can be enhanced in each layer, but when it comes to each of these disappearing and consolidating, we don't see any major movement at the moment.

**Momii [A]:** On the low-dielectric fluoropolymer resin in Performance Chemicals, the underlying fluororesin is basically rarely used on its own and is mostly used in combination with other materials.

As Mr. Suzuki said earlier, together with the fact that it isn't an area that cannibalizes glass core, basically, case by case, customers are studying it in combination with various materials, and we believe it will be used as a product in that way.

**Questioner [Q]:** Today in the market and elsewhere, your fluorine is getting quite a lot of attention. On this point, there's also the compatibility between glass cloth and resin, so depending on that, is there ample possibility that fluorine-related products could grow from here?

**Momii [A]:** That is how we see it.

**Questioner [M]:** Understood. Thank you, that's all.

[END]