Denka

Possibility
of
chemistry

Results Presentation of FY2024 1Q

(The 1st 3 months of the Fiscal year ending March 2025)

Securities code: 4061

Denka Co., Ltd

August 7, 2024

Copyright © Denka Co., Ltd. All Rights Reserved.

■ Continued to take action to suspend the grace period for new regulations that will have a significant impact on the continued operations of DPE in the U.S.; requesting a review of the content of the regulations

(Press release)

・April 17 2024: Announcement of New Regulations set by the U.S. Environmental Protection Agency that apply to Chloroprene Rubber Manufacturing Facilities in the U.S.
https://www.denka.co.jp/eng/storage/news/pdf/490/20240417_denka_dpe_en.pdf

・July 10, 2024: Decision of the U.S. Court of Appeals against an injunction filed by a U.S. subsidiary of Denka
https://www.denka.co.jp/storage/news/pdf/1246/20240710_denka_dpe.pdf

Details and Company Response

Details	・April 9, 2024 U.S. Environmental Protection Agency (EPA) announces new chemical air emission regulations applicable to chloroprene rubber manufacturing facilities in the U.S., including facilities operated by DPE ・Enforcement : July 15, 2024 (60 days after the official gazette publication date of May 16, 2024) ・Grace period: 90 days from the enforcement date ・Details of the rules call for significant reductions in chloroprene monomer emissions
Company Response	・Petition filed with the U.S. Court of Appeals for review of the new regulations (decision not issued as of August 7). ・Petition for injunction seeking to stay the enforcement date of the 90-day grace period denied by the U.S. Court of Appeals. ・Meanwhile, the Louisiana Department of Environmental Quality (LDEQ) granted a two-year grace period (Currently validating)
Future outlook	・Continue to take action to suspend or extend the issuance of the 90-day grace period ・We are carefully investigating the impact the regulations will have on DPE chloroprene rubber manufacturing operations and financial results

* DPE: Denka Performance Elastomer LLC, a U.S. chloroprene rubber manufacturing subsidiary

Copyright © Denka Co., Ltd. All Rights Reserved.

Denka

FY2024 1Q Results (P4-P12)

- **Operating income：4.7billion yen　＋1.9billion yen year on year**
- **Net income　　：2.3billion yen　－0.0billion yen year on year**

Gain on sale of strategic cross-shareholdings:　FY2023 1Q ＋1.0billion yen　⇒　FY2024 1Q ＋0.1billion yen

FY2024 Earnings Forecast (P13-P15)

- **Operating income: 18.0 billion yen** (unchanged from initial forecast)
- **Net income: 9.0 billion yen** (unchanged from initial forecast)

Overall progress was in line with projections
We are carefully investigating the impact of new regulations on DPE chloroprene rubber manufacturing operations and financial results
We have not factored in the impact of fundamental measures in the chloroprene rubber business planned for announcement during 2024

Shareholder Returns (P16)

- **Dividend forecast: 100 yen per share (unchanged; 96% total return ratio)**
  Taking into account the impact fundamental measures in the chloroprene rubber business to be announced during 2024, overall future cash flow considerations, etc.
- **Future dividend policy: Aiming to maintain or increase dividend per share based on a total return ratio of 50% (cumulative total for the eight years of the management plan)**

[Topics] (P20-P24)

- **New product development in the expanding market for high-speed communications substrates**
  SNECTON, low dielectric loss tangent spherical silica, low alpha spherical alumina
  FY2030 Target SNECTON: Sales of 20 billion yen
  Low dielectric loss tangent spherical silica + Low alpha spherical alumina:Sales of 10 billion yen

Copyright © Denka Co., Ltd. All Rights Reserved.

FY2024 1Q Results

Copyright © Denka Co., Ltd. All Rights Reserved.

Denka

■ Profit higher year on year with demand recovery

(¥ billions)	FY2023 1Q Actual	FY2024 1Q Actual	(Year on Year)	
Sales	87.8	**95.2**	+	7.4
Operating Income	2.8	**4.7**	+	1.9
Operating Margin	3.2%	**5.0%**	+	1.8%
Ordinary Income	2.4	**3.6**	+	1.2
Net Income Attributable to Owners of Parent	2.3※	**2.3**※	△	0.0
Forex (¥/$)	135.8	**155.0**		
Japan Naphtha (¥/Kl)	65,800	**78,900**		

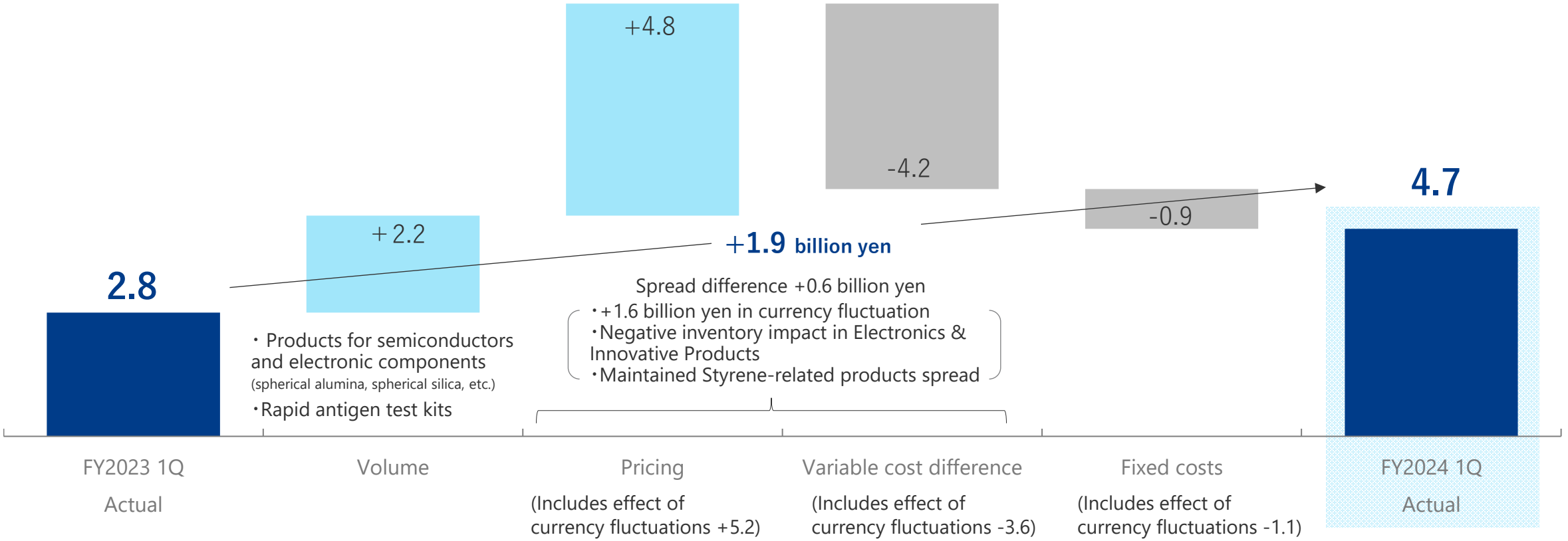
※ Gain on sale of strategic cross-shareholdings: FY2023 1Q ＋1.0billion yen ⇒ FY2024 1Q ＋0.1billion yen

Copyright © Denka Co., Ltd. All Rights Reserved.

■ Profit higher with demand recover for products for semiconductor and electronic components

Operating Income Variance Analysis (Year on Year)

(¥ billions)



Copyright © Denka Co., Ltd. All Rights Reserved.

Denka

Higher profits across all segments due to positive volume difference

(¥ billions)

Sales	FY2023 1Q Actual	FY2024 1Q Actual	Incr. Decr.	Volume	Pricing
Electronics & Innovative Products	19.2	21.9	+ 2.7	+ 1.9	+ 0.9
Life Innovation	7.2	7.8	+ 0.6	+ 0.6	- 0.0
Elastomers & Infrastructure Solutions	28.0	29.2	+ 1.2	+ 0.8	+ 0.4
Polymer Solutions	29.8	32.6	+ 2.8	- 0.7	+ 3.6
Others	3.7	3.8	+ 0.0	+ 0.0	-
Total	87.8	95.2	+ 7.4	+ 2.6	+ 4.8

Operating Income	FY2023 1Q Actual	FY2024 1Q Actual	Incr. Decr.	Volume	Pricing	Cost and Other
Electronics & Innovative Products	2.1	2.3	+ 0.1	+ 1.0	+ 0.9	- 1.7
Life Innovation	0.9	1.7	+ 0.8	+ 0.4	- 0.0	+ 0.4
Elastomers & Infrastructure Solutions	-0.7	-0.2	+ 0.5	+ 0.3	+ 0.4	- 0.2
Polymer Solutions	-0.0	0.3	+ 0.3	+ 0.3	+ 3.6	- 3.6
Others	0.5	0.7	+ 0.2	+ 0.2	-	- 0.0
Total	2.8	4.7	+ 1.9	+ 2.2	+ 4.8	- 5.1

Copyright © Denka Co., Ltd. All Rights Reserved.

Denka

■ Higher profits due to significant improvement in Elastomers & Infrastructure Solutions

(¥ billions)

Sales	FY2022 1Q	2Q	3Q	4Q	FY2023 1Q	2Q	3Q	4Q	FY2024 1Q	Vs. FY2023 4Q
Electronics & Innovative Products	21.9	25.6	22.3	23.8	19.2	22.5	21.7	24.5	21.9	- 2.6
Life Innovation	6.4	15.5	16.9	8.8	7.2	15.0	15.8	9.0	7.8	- 1.2
Elastomers & Infrastructure Solutions	30.4	32.5	31.6	29.3	28.0	29.2	28.6	25.6	29.2	+ 3.6
Polymer Solutions	31.6	32.0	30.3	33.7	29.8	31.7	30.9	31.9	32.6	+ 0.7
Others	4.1	2.9	4.7	3.4	3.7	5.1	4.5	5.4	3.8	- 1.7
Total	94.4	108.6	105.8	98.8	87.8	103.5	101.5	96.4	95.2	- 1.2

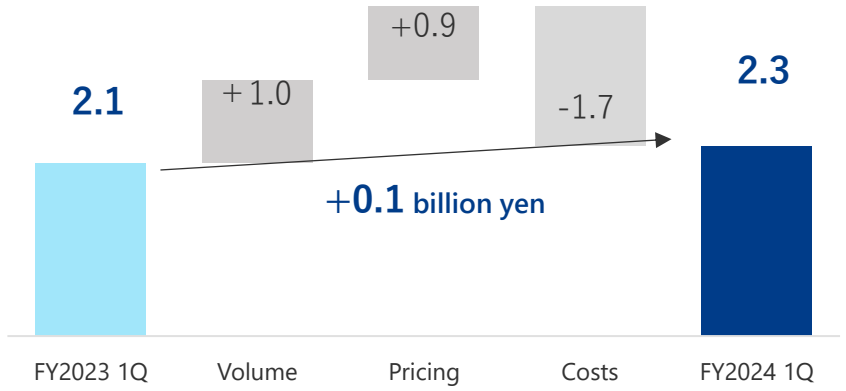
Operating Income	FY2022 1Q	2Q	3Q	4Q	FY2023 1Q	2Q	3Q	4Q	FY2024 1Q	Vs. FY2023 4Q
Electronics & Innovative Products	4.1	5.6	4.1	4.2	2.1	2.8	1.8	2.4	2.3	- 0.1
Life Innovation	0.5	6.0	5.0	2.8	0.9	5.7	3.1	2.0	1.7	- 0.3
Elastomers & Infrastructure Solutions	-0.2	1.5	-1.3	-1.1	-0.7	-0.9	-3.9	-3.7	-0.2	+ 3.6
Polymer Solutions	-0.1	-0.0	-0.9	-0.1	-0.0	-0.2	0.6	-0.4	0.3	+ 0.7
Others	0.6	0.4	0.9	0.4	0.5	0.5	0.4	0.6	0.7	+ 0.0
Total	4.9	13.4	7.8	6.3	2.8	7.7	2.0	0.8	4.7	+ 3.9

Copyright © Denka Co., Ltd. All Rights Reserved.

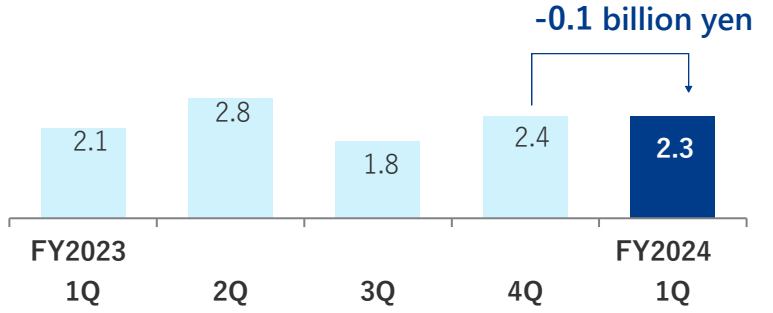
■ Higher profits due to higher sales volume with demand recovery for semiconductor and electronic components

Operating Income Variance Analysis (Year on Year)

(¥ billions)



(Reference) Operating Income by Quarter



1Q Non-Consolidated (vs. 4Q)
・Gradual recover in demand

Reason for Variance (Year on Year)

	Sales	Volume	(By Application) Semiconductor and Electronic Components	xEV	Other	Pricing
Spherical Alumina	↗	↗	(TIM* applications) Increased sales due to demand recovery	Flat year on year due to weak demand for EVs in Europe and the U.S.		↗ Currency fluctuation : Plus
Spherical Fused Silica	↗	↗	(Semiconductor sealants) Moderate recovery in semiconductors other than electronic components and memory			↗ Same as above
High-Performance Film	↗	↗	Same as above			↗ Same as above
Acetylene Black	→	→		Same as above	(For high-voltage cables) Flat year on year due to continued construction delays in Europe	↗ Same as above
Ceramic Substrates (silicon nitride, aluminum nitride)	↘	↘		Sales lower year on year due to design changes among major users	(For electric railway) Level year on year	↘ Sales composition difference

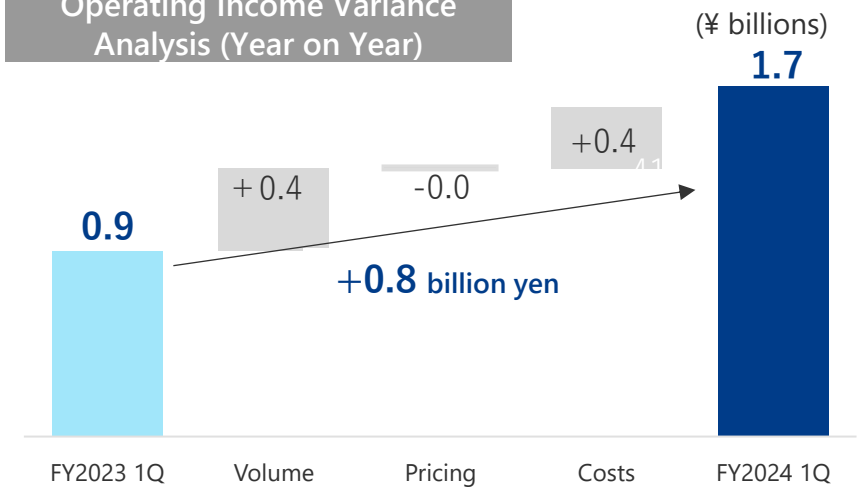
Cost and Other ↓ Foreign exchange effects, inventory effects (effects of high unit cost beginning inventory), etc.

*TIM (Thermal Interface Materials)

Copyright © Denka Co., Ltd. All Rights Reserved.

Higher profit with increase in demand for simultaneous test kits (combo kits) for COVID-19 and influenza

Operating Income Variance Analysis (Year on Year)

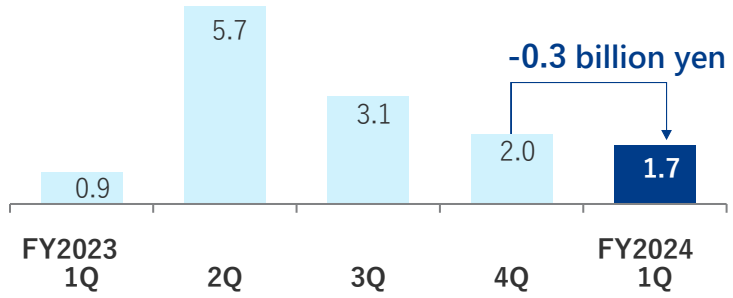


Reason for Variance (Year on Year)

	Sales	Volume		Pricing	
Influenza Vaccine	→	→	Manufacturing toward September shipments in line with plan	→	
Rapid Antigen Test Kits	↗	↗	Sales higher year on year for simultaneous test kits (combo kits) for COVID-19 and influenza	→	Impact of insurance point reductions was minimal
IVD Reagents (Inflammation markers, etc.)	→	→	Level year on year	→	

Cost and Other → Decrease in research expenses, etc.

(Reference) Operating Income by Quarter



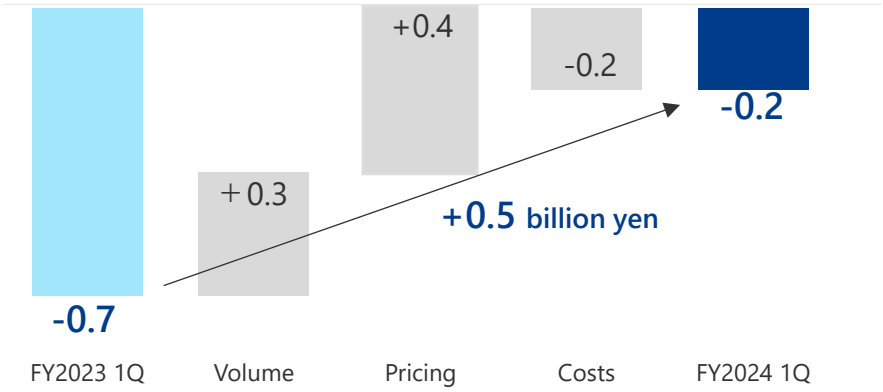
1Q Non-Consolidated (vs. 4Q)
Rapid Antigen Diagnostic Kits: Strong 4Q combo kit demand

Copyright © Denka Co., Ltd. All Rights Reserved.

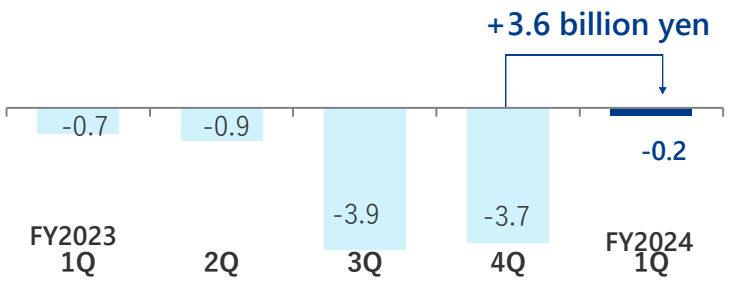
■ Decrease in red due to improved cement income/expenses from lower raw material prices

Operating Income Variance Analysis (Year on Year)

(¥ billions)



(Reference) Operating Income by Quarter



1Q Non-Consolidated (vs. 4Q):
Chloroprene rubber: Impact of Noto Peninsula earthquake on sales: -1.1 billion yen
Cement: Improved profits due to price hikes and lower coal prices

Reason for Variance (Year on Year)

	Sales	Volume	Pricing
Chloroprene Rubber	→	→	Inventory adjustment in the market progressed; demand recovery generally on a par with the previous year
Special Cement Additives	→	→	Level year on year
Cement	↗	→	Level year on year

Pricing

→

・Currency fluctuation: Plus
・Impact excluding foreign exchange: Negative
Lower sales prices due to greater product competition

[Customs Statistics] Export unit prices (dry + latex)

→

↗ Impact of the additional 3,000 yen/t price increase, largely completed by the end of July 2023

Cost and Other →

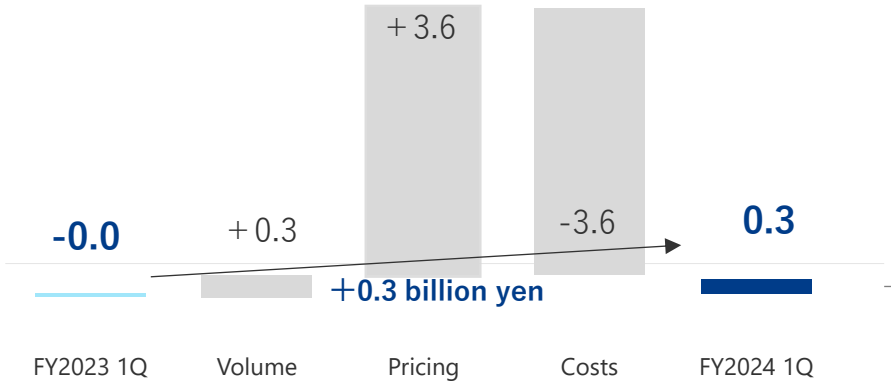
Cement: Decline in coal price (1Q FY2023: $161/t → 1Q FY2024: $136/t)
U.S. DPE: Weaker due to foreign exchange impact

Copyright © Denka Co., Ltd. All Rights Reserved.

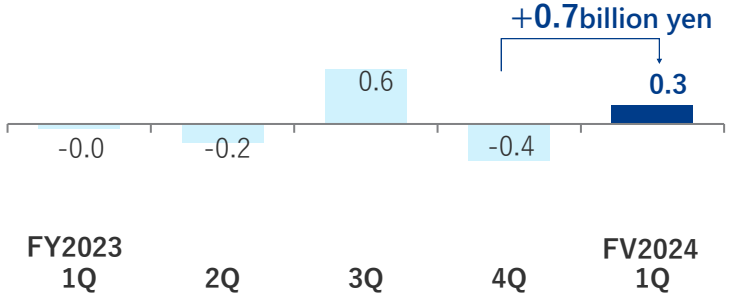
Swung to profit with demand recovery for PCs and consumer electronics

Operating Income Variance Analysis (Year on Year)

(¥ billions)



(Reference) Operating Income by Quarter



1Q Non-Consolidated (vs. 4Q):Demand recovering

Reason for Variance (Year on Year)

	Sales	Volume		Pricing	
MS Resin	↗	↗	(LGP applications for PC monitors) Gradual recovery in demand, higher sales	↗	Styrene Related Product: Price revision with rising raw materials and fuel prices (spread maintained)
AS, ABS, Transparent Resins, Etc.	↗	↗	Demand recovering for home appliances and general merchandise	↗	
Food Wrapping Sheets and Containers	↗	→	Level year on year	↗	
Toyokalon	→	→	Level year on year	→	Level year on year

Cost and Other	↓	Variable costs: Improved due to lower raw material and fuel prices (spread maintained) Fixed costs: Level year on year

Copyright © Denka Co., Ltd. All Rights Reserved.

FY2024 Earnings Forecast

Copyright © Denka Co., Ltd. All Rights Reserved.

- **Overall progress was in line with projections**
- **We are carefully investigating the impact of new regulations on DPE chloroprene rubber manufacturing operations and financial results**
- **We have not factored in the impact of fundamental measures in the chloroprene rubber business planned for announcement during 2024**

Operating Income (¥ billions)	1Q Actual	1H Forecast	FY2024 Forecast	Progress	Progress
Electronics & Innovative Products	2.3	5.0	12.0	○ (In line with projections)	1H: Sales of ceramic substrates fell short of expectations; sales of spherical alumina exceeded expectations, resulting overall in progress in line with forecasts 2H: Projecting a recovery in demand for semiconductor-related products (initial forecast assumptions unchanged)
Life Innovation	1.7	4.0	9.0	○ (In line with projections)	1H: Sales of rapid antigen test kits and influenza vaccine production on in line with overall expectations 2H: Assuming demand increase simultaneous test kits (combo kits) for COVID-19 and influenza (initial forecast assumptions unchanged)
Elastomers & Infrastructure Solutions	-0.2	-1.5	-5.5	—	Filed a motion for injunction to stay the effective date of the 90-day grace period on new regulations set by the U.S. Environmental Protection Agency (EPA); motion was denied. (See P. 2)
Polymer Solutions	0.3	0.0	0.5	○ (In line with projections)	1H: Demand, etc., for PCs and home electronics; overall in line with expectations 2H: Projecting continued moderate demand recovery (initial forecast assumptions unchanged)
Others	0.7	1.0	2.0		
Total	4.7	8.5	18.0		

Copyright © Denka Co., Ltd. All Rights Reserved.

Initial forecast unchanged

(¥ billions)

	Investment & Lending				Depreciation				R&D			
	FY2023		FY2024		FY2023		FY2024		FY2023		FY2024	
	1Q Actual	FY2023 Actual	1Q Actual	FY2024 Forecast (No change)	1Q Actual	FY2023 Actual	1Q Actual	FY2024 Forecast (No change)	1Q Actual	FY2023 Actual	1Q Actual	FY2024 Forecast (No change)
Electronics & Innovative Products	4.5	**23.2**	5.3	**48.0**	2.2	**8.8**	2.4	**9.6**	1.2	**5.3**	1.4	**6.0**
Life Innovation	0.6	**3.9**	3.0	**10.0**	1.0	**3.7**	0.8	**3.0**	1.4	**4.5**	1.2	**6.0**
Elastomers & Infrastructure Solutions	1.6	**11.8**	1.9	**8.0**	2.1	**8.9**	2.3	**9.0**	0.6	**2.8**	0.7	**2.5**
Polymer Solutions	1.0	**4.7**	1.9	**4.0**	1.2	**5.1**	1.3	**5.0**	0.6	**2.2**	0.6	**2.5**
Others	-	**0.2**	0.0	**-**	0.1	**0.4**	0.1	**0.4**	-	**0.5**	-	**-**
Total	7.7	**43.7**	12.1	**70.0**	6.7	**26.9**	6.8	**27.0**	3.8	**15.2**	3.8	**17.0**

Copyright © Denka Co., Ltd. All Rights Reserved.

Dividend forecast: 100 yen per share (unchanged)

Expecting improved cash flow next year and beyond, considering the impact of the drastic measures in the chloroprene rubber business to be announced by the end of this year

		FY2018 Actual	FY2019 Actual	FY2020 Actual	FY2021 Actual	FY2022 Actual	FY2023 Actual	FY2024 Forecast
Net Income	(¥ billions)	25.0	22.7	22.8	26.0	12.8	11.9	9.0
Dividends per Share	(¥/share)	120.0	125.0	125.0	145.0	100.0	100.0	100.0 Mid-term 50.0 End 50.0
Dividend	(¥ billions)	10.5	10.8	10.8	12.5	8.6	8.6	8.6
Shareholders Return		42%	48%	47%	48%	68%	72%	96%
Stock Purchase	(¥ billions)	2.1	-	-	-	-	-	-
Total Return	(¥ billions)	12.6	10.8	10.8	12.5	8.6	8.6	8.6
Total Return Ratio		50%	48%	47%	48%	68%	72%	96%
Depreciation	(¥ billions)	22.9	22.5	22.9	23.9	27.0	26.9	27.0
Investment & Lending	(¥ billions)	32.8	36.9	42.3	35.6	39.4	43.7	70.0
Interest Bearing Debt	(¥ billions)	112.1	134.3	138.2	137.0	169.7	174.4	209.0
Net D/E Ratio		0.40	0.42	0.42	0.40	0.50	0.45	0.60
ROIC		**7.8%**	**6.6%**	**6.8%**	**7.3%**	**6.7%**	**2.5%**	**3.0%**
ROE		**10.3%**	**9.1%**	**8.8%**	**9.4%**	**4.4%**	**4.0%**	**2.9%**

Copyright © Denka Co., Ltd. All Rights Reserved.

(¥ billions)

Sales	FY2023 1H Actual	FY2024 1H Forecast (No change)	Incr. Decr.	Volume	Pricing
Electronics & Innovative Products	41.7	**45.0**	+ 3.3	+ 2.4	+ 1.0
Life Innovation	22.2	**20.0**	- 2.2	- 1.5	- 0.7
Elastomers & Infrastructure Solutions	57.2	**60.0**	+ 2.8	+ 4.4	- 1.7
Polymer Solutions	61.5	**65.0**	+ 3.5	- 2.5	+ 6.0
Others	8.8	**10.0**	+ 1.2	+ 1.2	-
Total	191.4	**200.0**	+ 8.6	+ 4.0	+ 4.7

Operating Income	FY2023 1H Actual	FY2024 1H Forecast (No change)	Incr. Decr.	Volume	Pricing	Cost and Other
Electronics & Innovative Products	4.9	**5.0**	+ 0.1	+ 2.4	+ 1.0	- 3.2
Life Innovation	6.6	**4.0**	- 2.6	- 0.6	- 0.7	- 1.3
Elastomers & Infrastructure Solutions	-1.6	**-1.5**	+ 0.1	+ 1.2	- 1.7	+ 0.6
Polymer Solutions	-0.3	**0.0**	+ 0.3	+ 0.7	+ 6.0	- 6.4
Others	1.0	**1.0**	+ 0.0	+ 0.0	-	- 0.0
Total	10.5	**8.5**	- 2.0	+ 3.7	+ 4.7	- 10.4

Copyright © Denka Co., Ltd. All Rights Reserved.

(¥ billions)

Sales	FY2023 Actual	FY2024 Forecast (No change)	Incr. Decr.	Volume	Pricing
Electronics & Innovative Products	87.8	100.0	+ 12.2	+ 11.1	+ 1.1
Life Innovation	47.1	45.0	- 2.1	- 0.4	- 1.7
Elastomers & Infrastructure Solutions	111.4	120.0	+ 8.6	+ 12.5	- 3.8
Polymer Solutions	124.2	135.0	+ 10.8	+ 1.0	+ 9.8
Others	18.8	20.0	+ 1.2	+ 1.2	-
Total	389.3	420.0	+ 30.7	+ 25.4	+ 5.3

Operating Income	FY2023 Actual	FY2024 Forecast (No change)	Incr. Decr.	Volume	Pricing	Cost and Other
Electronics & Innovative Products	9.0	12.0	+ 3.0	+ 6.2	+ 1.1	- 4.2
Life Innovation	11.7	9.0	- 2.7	- 0.5	- 1.7	- 0.5
Elastomers & Infrastructure Solutions	-9.3	-5.5	+ 3.8	+ 5.5	- 3.8	+ 2.1
Polymer Solutions	-0.1	0.5	+ 0.6	+ 1.4	+ 9.8	- 10.6
Others	2.0	2.0	- 0.0	- 0.0	-	+ 0.0
Total	13.4	18.0	+ 4.6	+ 12.5	+ 5.3	- 13.2

Copyright © Denka Co., Ltd. All Rights Reserved.

Sales (¥ billions)	FY2022 1Q	2Q	3Q	4Q	FY2023 1Q	2Q	3Q	4Q	FY2024 1Q Actual	2Q Forecast	2H Forecast
Electronics & Innovative Products	21.9	25.6	22.3	23.8	19.2	22.5	21.7	24.5	21.9	23.1	55.0
Life Innovation	6.4	15.5	16.9	8.8	7.2	15.0	15.8	9.0	7.8	12.2	25.0
Elastomers & Infrastructure Solutions	30.4	32.5	31.6	29.3	28.0	29.2	28.6	25.6	29.2	30.8	60.0
Polymer Solutions	31.6	32.0	30.3	33.7	29.8	31.7	30.9	31.9	32.6	32.4	70.0
Others	4.1	2.9	4.7	3.4	3.7	5.1	4.5	5.4	3.8	6.2	10.0
Total	94.4	108.6	105.8	98.8	87.8	103.5	101.5	96.4	95.2	104.8	220.0

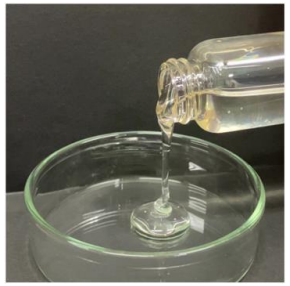
Operating Income (¥ billions)	FY2022 1Q	2Q	3Q	4Q	FY2023 1Q	2Q	3Q	4Q	FY2024 1Q Actual	2Q Forecast	2H Forecast
Electronics & Innovative Products	4.1	5.6	4.1	4.2	2.1	2.8	1.8	2.4	2.3	2.7	7.0
Life Innovation	0.5	6.0	5.0	2.8	0.9	5.7	3.1	2.0	1.7	2.3	5.0
Elastomers & Infrastructure Solutions	-0.2	1.5	-1.3	-1.1	-0.7	-0.9	-3.9	-3.7	-0.2	-1.3	-4.0
Polymer Solutions	-0.1	-0.0	-0.9	-0.1	-0.0	-0.2	0.6	-0.4	0.3	-0.3	0.5
Others	0.6	0.4	0.9	0.4	0.5	0.5	0.4	0.6	0.7	0.3	1.0
Total	4.9	13.4	7.8	6.3	2.8	7.7	2.0	0.8	4.7	3.8	9.5

Copyright © Denka Co., Ltd. All Rights Reserved.

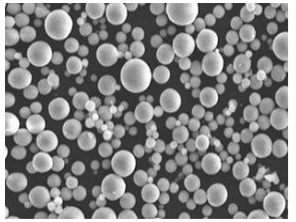
[Topics]

New product development in the expanding market for high-speed communications substrates

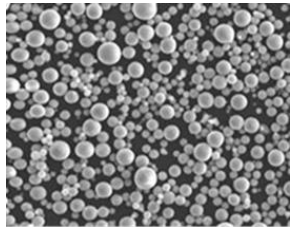
SNECTON



Low dielectric loss tangent spherical silica

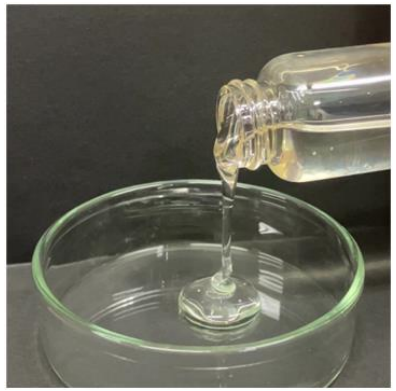


Low alpha
(low alpha ray)
spherical alumina



Copyright © Denka Co., Ltd. All Rights Reserved.

Denka



SNECTON

Cutting-edge organic material with electrical characteristics (low dielectric constant, low dielectric loss tangent) required of materials to reduce electrical signal loss (transmission loss); features cross-linkability (heat resistance) despite being a soft resin

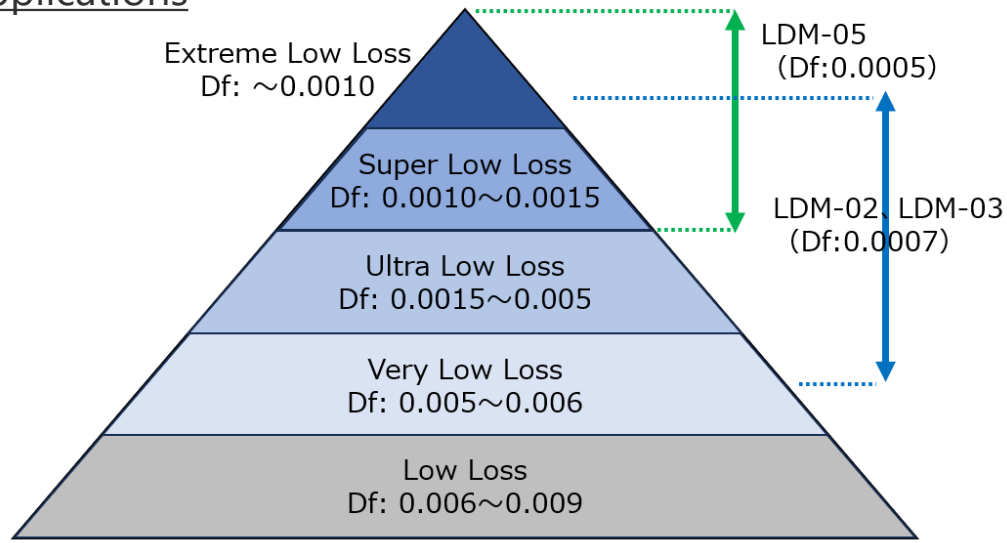
SNECTON Positioning

	SNECTON	Low Dielectric Resins of Other Co's	PTFE
Thermosetting, Thermoplastic	Thermosetting	Thermosetting	Thermoplastic
Type	Soft	Hard	–
Df	0.0005~0.0007	0.0010~0.0020	0.0005
Type	Hydrocarbon-Based	Hydrocarbon Modified PPE Maleimide	Fluorine
Laminate Process	○	○	×

＊Excellent laminate processability (adhesion, etc.) and low Df PTFE level

Df: Dissipation factor

Applications



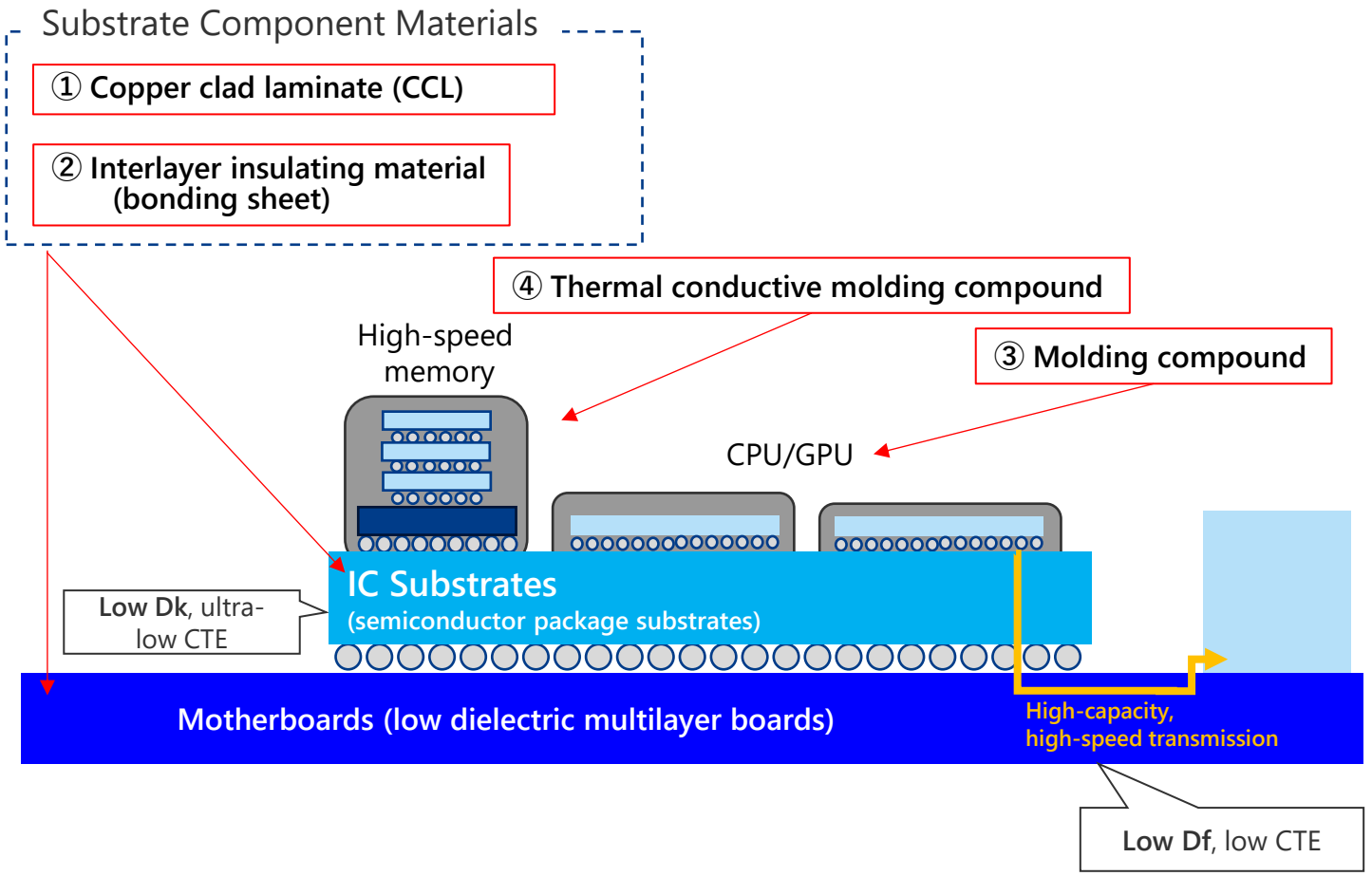
*Dielectric loss reduced by between 30% and 50% through the use of our SNECTON formulation
Reduction possible (vs. super low loss)

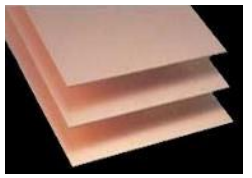
Copyright © Denka Co., Ltd. All Rights Reserved.

Products Used in High-Speed Communication Modules

Denka

<High-Speed Communication Module Schematic>



Applications for High-Speed Communication Modules	Our Products
① **Copper clad laminate (CCL)** 	・**SNECTON (cross-linkable soft low-dielectric resin)** ・**Low dielectric loss tangent spherical silica**
② **Interlayer insulating material (bonding sheet)** 	・**SNECTON (cross-linkable soft low-dielectric resin)** ・**Low dielectric loss tangent spherical silica**
③ **Molding compound**	・**Spherical silica**
④ **Thermal conductive molding compound (for next generation memory)**	・**Low alpha** (low alpha ray) **spherical alumina**

Dk: Dielectric constant
Df: Dissipation Factor
CTE: Coefficient of thermal expansion

Alpha ray: Emitted from radioactive elements (uranium, thorium, etc.) that exist in trace amounts in nature.
Low alpha ray desired as alpha rays are a cause of soft errors in semiconductors.

Copyright © Denka Co., Ltd. All Rights Reserved.

High-Speed Communication (High-Frequency) Substrate Market Expansion

Denka

- **Expansion of generative AI**
  Global AI Market Size (Revenue)
  2022: US$142 billion
  ⇒2030: US$1,847 billion (13x)

- **Spread of next-generation optical communications**

- **Use in automated driving, telemedicine, etc.**

- Expansion and growth in data centers and telecommunication base stations
- Higher capacity and speeds for data communication

High-Speed Communication Circuit Board Growth

- Ultra Low Loss (area)

2030 **9x** (vs. 2023)

(2023: 3,590,000 m2 ⇒ 2030: 32,990,000 m2)

Super low loss (area)

2030 **35x** (vs. 2023)

(2023: 340,000 m2 ⇒ 2030: 11,900,000 m2)

High-Speed (High-Frequency) Communication Substrate Applications

- Data centers Servers (including AI servers)
  Base stations
- TV broadcasting
- Mobile phones
  Commercial radio
  Wi-Fi
  Millimeter wave radar, etc.
- GPS positioning
  Weather observation sensors
  Human body sensors, etc.

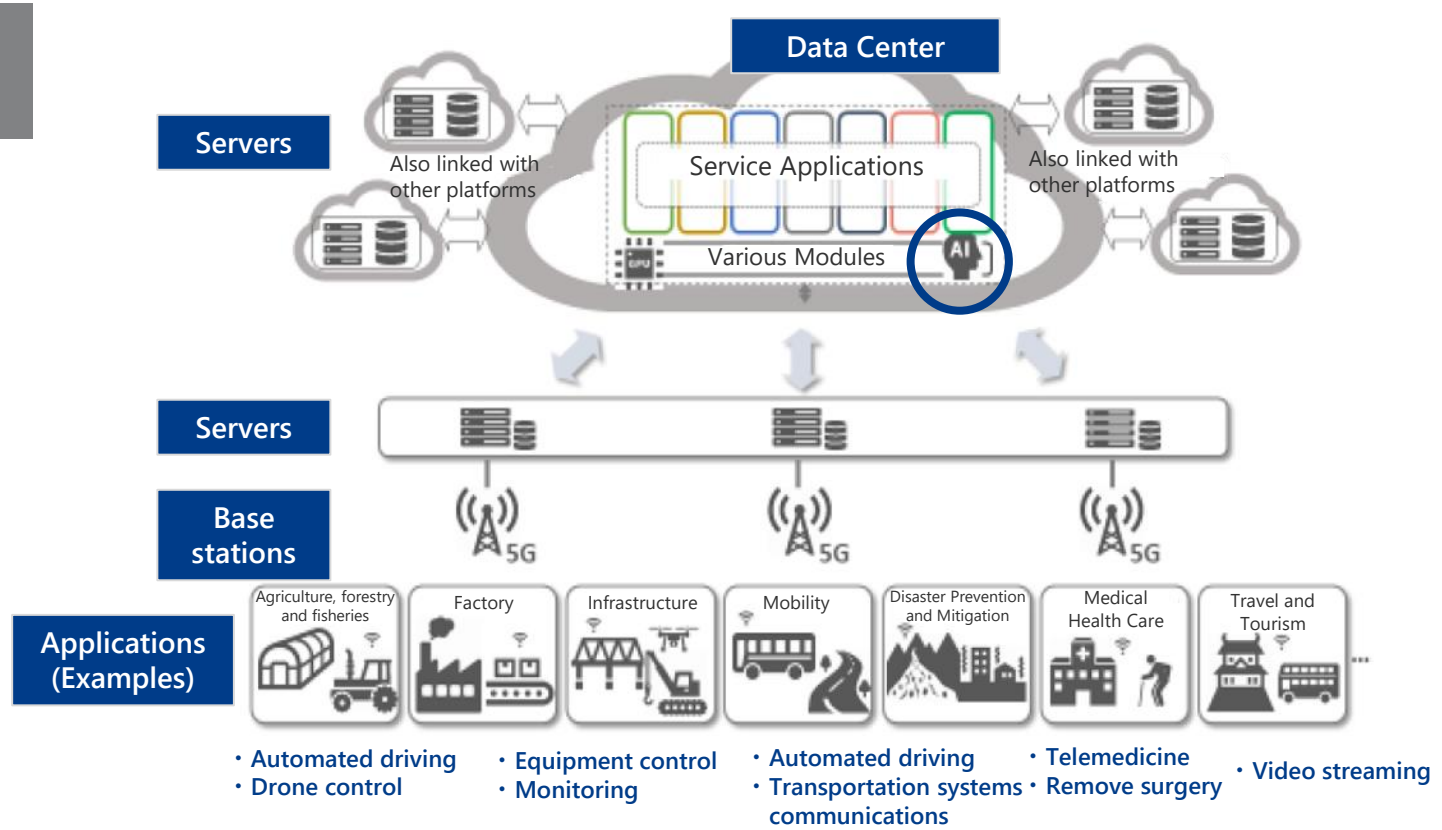
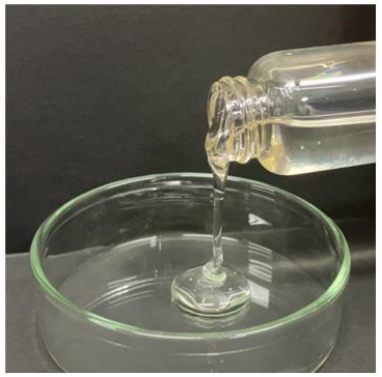
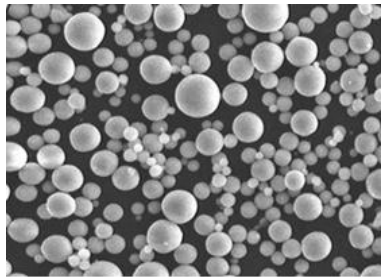
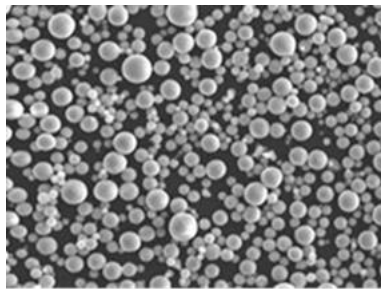


Figure: 5G, Beyond 5G (6G) Application Examples and Prospects (Source: Ministry of Internal Affairs and Communications, R2 Beyond 5G Promotion Strategy Document, and R5 White Paper on Information and Communications)

Copyright © Denka Co., Ltd. All Rights Reserved.

Targets for FY2030 and Beyond

Denka

Major Products		Applications	Target Target for FY2030	Investment Plan
SNECTON		Various low-dielectric circuit boards, interlayer insulating materials, etc.	Sales 20 billion yen/year	Launch: 2026 Location: Chiba Plant
Low dielectric loss tangent spherical silica		Various low-dielectric circuit boards, interlayer insulating materials, etc.	Sales 10 billion yen/year	Launch: 2025 Location: Omuta Plant
Low alpha spherical alumina		Thermal conductive molding compound (for next generation memory)		In production at existing facilities

Copyright © Denka Co., Ltd. All Rights Reserved.

Cautionary statement regarding forward-looking information

Target figures in this material are not forecasts of business results.
In addition, any description relating to the future in this material is subject to known or unknown risks and uncertainties, although it is based on management's current assumptions and beliefs in light of the information currently available to it.
Please be cautioned that a number of important factors could cause actual results to differ significantly from the description in the material.
Such risks and uncertainties include adverse economic conditions, currency exchange rate fluctuations, adverse legislative and regulatory developments, delays in new product launch, pricing, and product initiatives of competitors, the inability of the Company to market existing and new products effectively, interruptions in production, infringements of the company's intellectual property rights and the adverse outcome of material litigation.

Possibility of chemistry

Denka

Inquiries regarding this material

Corporate Communications Dept,
Denka Co., Ltd.

TEL 03-5290-5511

URL https://www.denka.co.jp/eng/