

Market Report

[2024 version of Photoconductor Market Forecast]

**“Comprehensive Analysis of the Photoconductor Market Facing the Industry Transformation and Restructuring”**

*=Detailed analysis of market trends in photoconductors, substrates, and coating materials =*



<Japanese manufacturers' production volume was on a downward trend in 2023>  
Image on the left: Oita Canon Materials; Right: Kyocera Shiga Yohkaichi Plant



<A wide selection of A3 photoconductors exhibited at REMAX 2023>



April 2024  
DATA SUPPLY INC.

<Overview>

I. Theme

**[2024 version of Photoconductor Market Forecast]**

**“Comprehensive Analysis of the Photoconductor Market Facing the Industry Transformation and Restructuring”**

*=Detailed analysis of market trends in photoconductors, substrates, and coating materials=*

II. Abstract

Looking back at the printing industry in 2023, shipments of both hardware devices and consumables were relatively stable in the first half of the year, but from the summer toward the end of the year, major manufacturers all rushed to eliminate excess inventories, resulting in a significant drop in industry-wide shipments. Inventory cleanup still requires time, and it is widely believed the market will be normalized from April 2024 toward the second half of the year.

As we have discussed in our past reports, print volume (PV) in offices has fallen significantly since 2020 to 80-90% of 2019 levels and is unlikely to return to previous volume in the future. And since more than 80% of photoconductor demand is covered by supplies (or consumables for devices distributed in the market), a decrease in PV directly leads to a decrease in photoconductor demand. However, this is not to suggest that PV and photoconductor demand will be declining at a faster pace in the coming years. Although paperless trends in offices are certainly progressing through document digitization such as invoices, physical documents still have advantages over digital counterparts in terms of readability in business settings. Such business documents are believed to account for a large amount of paper-based outputs from copiers, MFPs, and laser printers, and this strong demand is not likely to go away.

Since an overall industry demand will not return to previous levels, it is only natural that MFP/printer and photoconductor manufacturers will have to adapt to various changes they face. Specifically, from the perspective of business continuity planning (BCP), photoconductor manufacturers are beginning to discuss how long they will continue in-house production and if they have the possibility of external sales. As for specialized manufacturers, taking over external in-house production will mean a lot to maintain profitability. In anticipation of a further market contraction, the industry is beginning to see reorganization among machine makers integrating their development and production. These developments will have various impacts on the photoconductor market. In the third-party photoconductor market, where Chinese low-priced manufacturers hold a large share, their demand is expected to peak out as the genuine product market shrinks, resulting in a possible shakeout among themselves.

The photoconductor market is facing an extremely severe market situation, but the fact remains the same that the photoconductor is a vital component in the electrophotographic process that determines the printed image quality. As we have pointed many times in the past, we believe that manufacturers with comprehensive strengths that can achieve both quality and cost reduction will ultimately survive.

The 2024 version of Photoconductor Market Forecast is the 34th publication in the series. We have analyzed not only photoconductor manufacturers, but also a wide range of substrate manufacturers and material suppliers. We hope that our latest report will be helpful to all our readers in their redesign of business.

III. Items and Makers

1. Items

- |                   |  |   |
|-------------------|--|---|
| 1) Photoconductor | <div style="display: inline-block; vertical-align: middle;"> <div style="display: inline-block; vertical-align: middle;">—</div> <div style="display: inline-block; vertical-align: middle;">OPC drum</div> </div> | 2) Aluminum substrate for photoconductors |
|                   | <div style="display: inline-block; vertical-align: middle;">—</div> <div style="display: inline-block; vertical-align: middle;">Se-based drum</div>  |   |

2. Makers

- 1) Photoconductor makers (9 in Japan, 18 overseas)
- 2) Substrate makers (extrusion, drawing, burnishing) (9 in Japan, 10 overseas)
- 3) Coating materials makers (CTL/CGL/UCL/OCL) (15 in Japan, 4 overseas)
- 4) Hardware makers (MFP/LBP/PP) (10 in Japan, more than 10+ overseas)

IV. Survey Coverage Period and Methodology

1. Survey coverage period: 2021-2027; Targeted regions: Japan, North America, Europe, South Korea, China, and others.
2. Methodology: 1) On-site and in-person (or online) interviews with targeted makers
  - 2) Analysis and review of open literatures, materials, statistics, and other sources
  - 3) Analysis of Data Supply's own proprietary database

V. Format and Report Preparation Period

1. Survey format: Multi-client study
2. Report preparation period: January and February 2024
3. Publication date: April 15, 2024
4. Report format: A4 size/PDF format
5. Price: \$5,200
6. Survey conducted by:
 

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7. How to Apply: Please send us an email with your name, company, department, and phone number included to Data Supply Inc. at [infods@datasupply.jp](mailto:infods@datasupply.jp) or any researcher shown above.

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■ Common survey item ■

Overall production volume/value (2021-2027 forecast) · Present and future production volume by region, production base, type, and application (Japan and overseas) (2021-2027 forecast) · Trend in production bases (facility investment, changes in the number of production lines, and future production bases) · Production volume by diameter and application · Production volume/value and unit price by diameter and length (2023 results) · Product lineup by diameter and length · Production volume by positive and negative charge · Development and prospect of long-life photoconductors · Expanding outsourcing/external sales strategy · Status of small/large diameters · Development and purchase status of photoconductive layers and coating materials (UCL, CGL, CTL, OCL) · Coating methods · Measures by genuine makers against third-party photoconductors · Production ratio between genuine (OEM) and third-party products · Supply volume by destination (2022-2024 estimate) · Worldwide production bases · History of 25 years (2003-2023 results, 2024-2027 forecast) · SDGs initiatives (regulatory compliance, recycling, energy/manpower saving, etc.)

[1] Canon [2] Ricoh [3] FUJIFILM Business Innovation [4] Konica Minolta [5] Kyocera Group [5]-1. Kyocera [5]-2. Kyocera Document Solutions [6] Mitsubishi Chemical [7] Fuji Electric [8] Sharp

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[1] APS Photoconductor (Shanghai) (China) [2] Guangzhou A&G Optoelectronics Technology (China) [3] HG Technologies (China) [4] Huaian Gantech Opto-Electronics (China) [5] Lexmark International (USA) [6] Suzhou Goldengreen Technologies (China) [7] Xerox Corporation (USA) [8] Other makers (USA: 1, China: 6, South Korea: 2, India: 1, Bangladesh: 1)

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■ Common survey item ■

Production volume (Japan and overseas) by region (by base) · Production volume by type, diameter (20 φ -260 φ), application, and length (A4-A0) · Production volume of non-burnished/burnished drum substrates · Photoconductor makers' supply volume by production base (worldwide) · Approach for color photoconductors (runout tolerance of drum substrates, roundness, surface roughness, etc.) · Relations between processing and drawing makers · Trend of production technology (burnished and non-burnished drum substrates) · Price trend, profitability · Present and future production bases

1. Resonac (formerly Showa Denko) 2. UACJ Extrusion Corporation 3. Nikkeikin ACT

### D. Coating Material Market

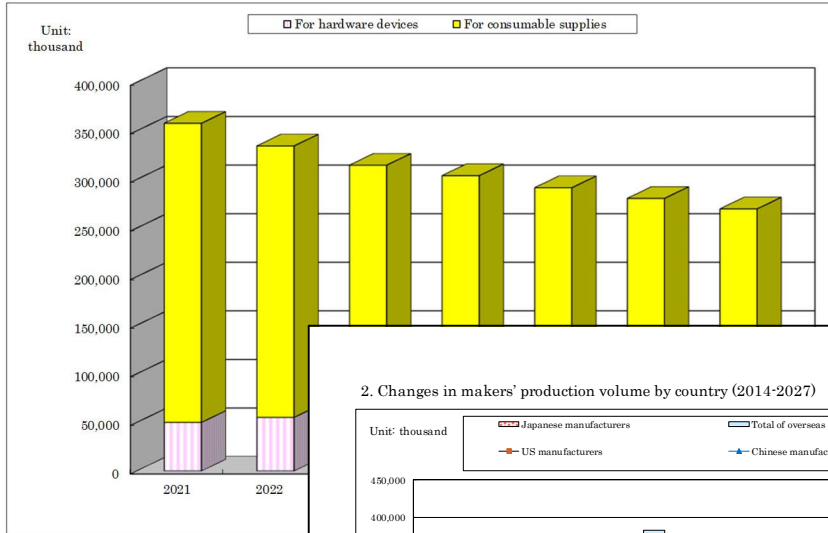
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Excerpts from < Comprehensive Analysis >

\*Charts are filled in the actual version.

4. Production volume of photoconductors by shipment application (for hardware devices/for consumable supplies) (2021-2027)  
1) Overall

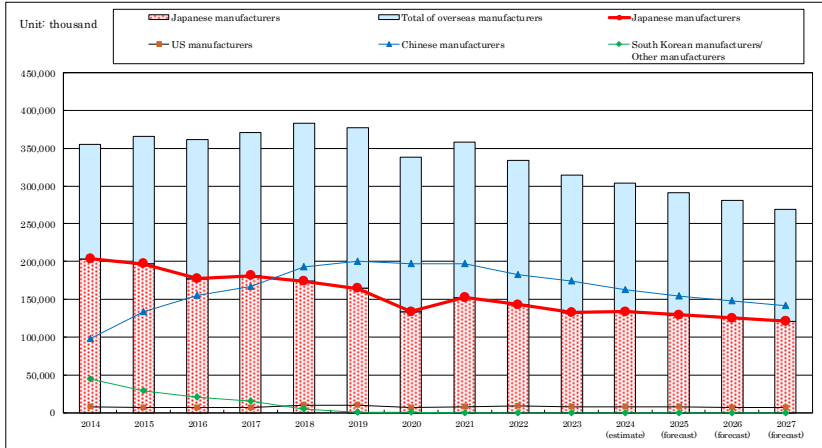


Year	2021	2022
For hardware devices	%	%
For consumable supplies	%	%
Total	%	%

\*The shipment

In 2023, production volume of photoconductor level for hardware devices and 265,322,000 un significantly due to a large increase in the prev to a decline in office print volume.  
From 2024 onward, while demand for hardwa 5% annually due to sluggish office PV and less

2. Changes in makers' production volume by country (2014-2027)



Year	2014	2015	2016	2017	2018	2019	2020
Japanese manufacturers	%	%	%	%	%	%	%
Overseas manufacturers							
US							
China							
South Korea/Other							
total							
Total							

Year	2021	2022	2023	2024 (estimate)	2025 (forecast)	2026 (forecast)	2027 (forecast)
Japanese manufacturers	%	%	%	%	%	%	%
Overseas manufacturers							
US							
China							
South Korea/Other							
total							
Total							

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Excerpts from < Comprehensive Analysis > and < Photoconductor Market >

\*Charts are filled in the actual version.

## 12. Major supply relations between hardware makers and photoconductor makers (2023)

1) OEM supply volume

Unit: thousand

Photoconductor maker / Supply destination	Canon	Ricoh	FUJIFILM Business Innovation (including Xerox)	Konica Minolta	Kyocera	Kyocera Document Solutions	Mitsubishi Chemical	Fuji Electric	Sharp	Others	Total
											%
Canon											
Ricoh											
FUJIFILM Business Innovation (including Xerox)											
Konica Minolta											
Kyocera Document Solutions											
Sharp											
Toshiba TEC											
OKI											
Brother Industries											
HPPK											
Lexmark											
Pantum											
Avison											
Others (Chinese makers)											
Total											%

## 2) Production volume by region and maker

Unit: thousand

Region	Maker	%	%	%	%	%	%	%	%	%	
Japan	Canon	%									
	Ricoh	%									
	FUJIFILM Business Innovation	%									
	Konica Minolta	%									
	Kyocera	%									
	Mitsubishi Chemical	%									
	Sharp	%									
	Canon Virginia	%									
	Canon Dahan	%									
	Fuji Electric (Shenzhen)	%									
	Kyocera Document Technology (Dongguan)	%									
	Mitsubishi Chemical Infonics (Singapore)	%									
	Vina MC Infonics (Vietnam)	%									
	Yamanashi Electronics Thailand (Thailand)	%									
Japan total	%										
Overseas	Lexmark International	%									
	Xerox Manufacturing (Netherlands BV) (Netherlands)	%									
	APS Photoconductor (Shanghai)	%									
	Guangzhou A&G Optoelectronics Technology	%									
	HG Technologies	%									
	Huian Gantech Opto-Electronics	%									
	Suzhou Goldengreen Technologies	%									
	Others	%									
	Overseas total	%									
	Total	%									

(Note) HPPK (HP Printing Korea)

- ① Canon: All for its own engines (including the HP brand)
- ② Ricoh: For its own engines and for Toshiba TEC (A3)
- ③ Fujifilm Business Innovation: For its own engines
- ④ Konica Minolta: For its own use and for Fujifilm BI
- ⑤ Kyocera: For Kyocera DS and for Fujifilm BI's content
- ⑥ Kyocera DS: Mainly for its own use and for Brother
- ⑦ Mitsubishi Chemical: For Fujifilm BI, OKI, HPPK,
- ⑧ Fuji Electric: Mainly for Brother Industries. Others
- ⑨ Sharp: All for its own use.
- ⑩ Xerox produces products for its own use for A3 MFP
- ⑪ Lexmark: for its own use.
- ⑫ China's HG: For HPPK's low-speed machines.
- ⑬ China's A&G: For Pantum's low-speed machines.

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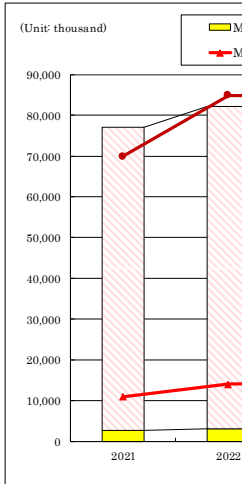
\*Charts are filled in the actual version.

**[3] HG Technologies (China)**

1. Overall

1) Changes in production volume/production value (2021-2027)

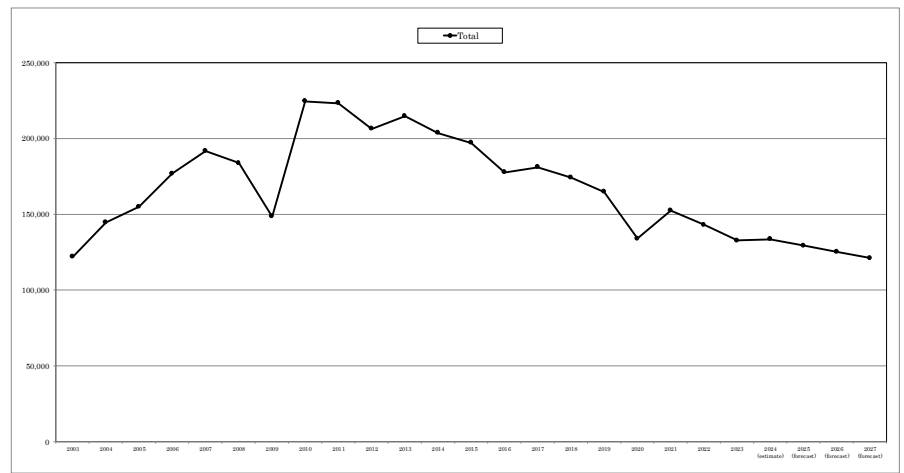
Application		Year	2021	2022	2023	2024 (estimate)	2025 (forecast)	2026 (forecast)	2027 (forecast)
			%	%	%	%	%	%	%
Production volume (Unit: thousand)	MFP/PP	%							
	Printer/FAX	%							
	Total	%							
		%							
Production value (Unit: million yen)	MFP/PP	%							
	Printer/FAX	%							
	Total	%							
		%							



HG Technologies' production volume in 2021 was 10,000 thousand units, and its production value was 4.96 billion yen. It is expected to decline from 2024 onwards. The company has been rapidly strengthening its financial strength. Its current production is slowing down. However, as demand recovers over the medium to long term.

3) Changes in production volume over 25 years  
(1) Summary of Japanese makers

Year	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024 (estimate)	2025 (forecast)	2026 (forecast)	2027 (forecast)		
Canon																											
Ricoh																											
Yamanashi Electronics																											
FUJIFILM BI																											
Konica Minolta																											
Kyocera																											
Kyocera DS																											
Mitsubishi Chemical																											
Fuji Electric																											
Sharp																											
Others																											
Total																											

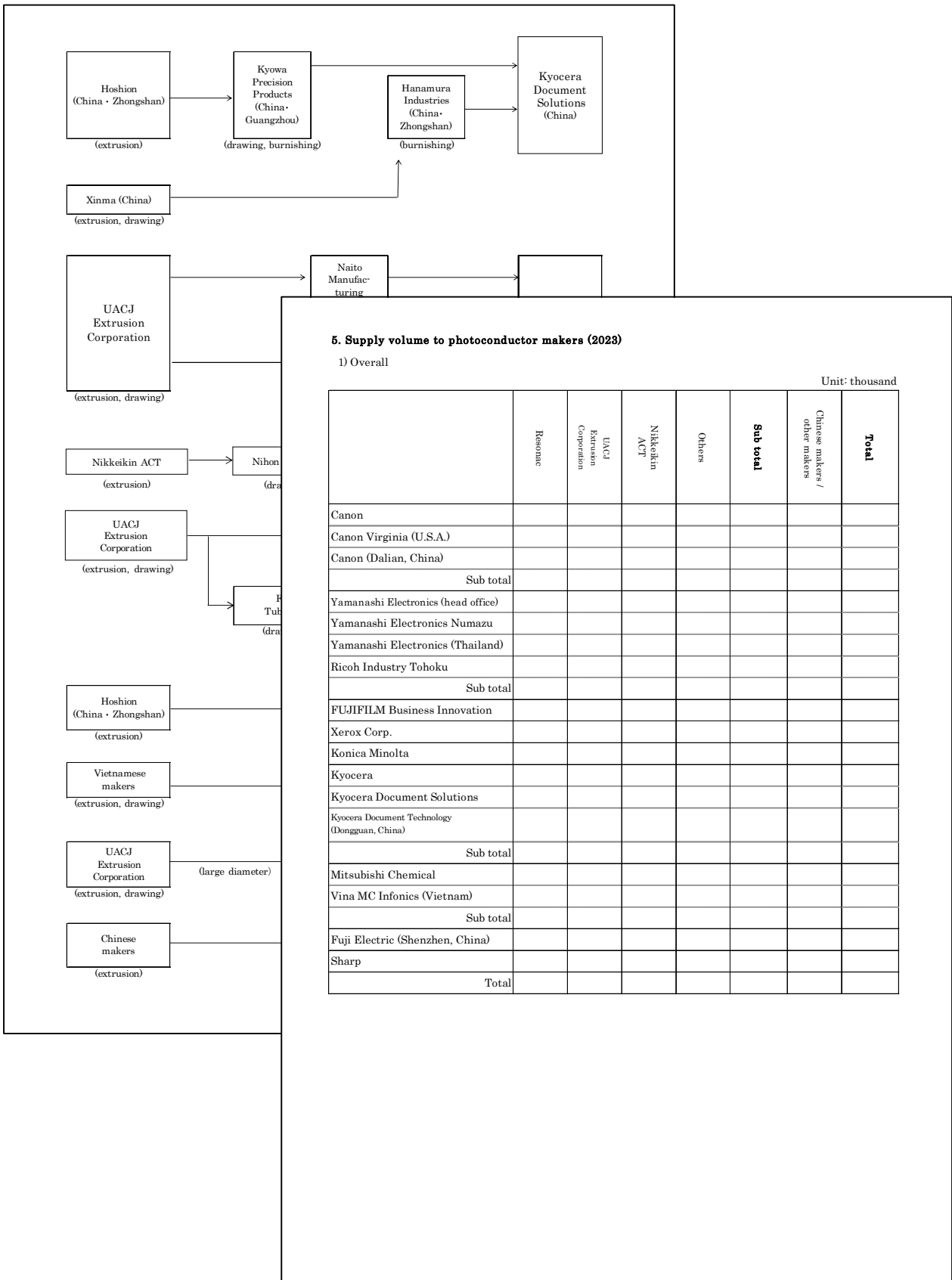


Note) Yamanashi Electronics has been included in Ricoh since 2007.  
Production of photoconductors by Japanese manufacturers peaked in 2010 at approximately 225 million units, and demand has since declined sharply in the decade to less than 150 million units now. The reasons for the sharp decline include a significant drop in demand for photoconductors for office printers in developed countries as printing has been consolidated into MFPs, and the loss of demand in emerging markets to ultra-low-priced products from third-party manufacturers, mainly from China.

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Excerpts from < Drum Substrate Market >

\*Charts are filled in the actual version.





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Excerpts from < Coating Material Market >

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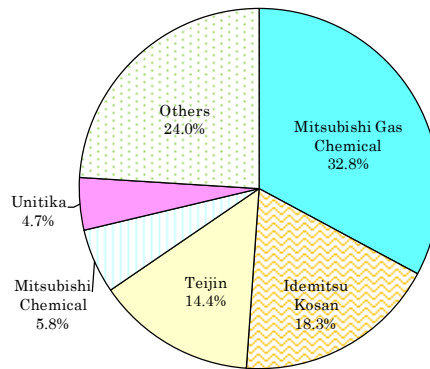
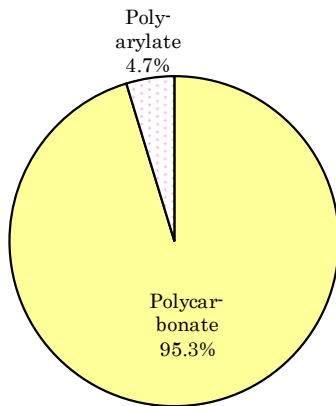
## 2. CTL (Charge Transport Layer)

### 2-1. Binder resin

#### 1) Worldwide market (2021-2025)

Unit: kg

	2021		2022		2023		2024 (estimate)		2025 (Forecast)	
		%		%		%		%		%
Mitsubishi Gas Chemical										
ratio (%)										
Teijin										
ratio (%)										
Idemitsu Kosan										
ratio (%)										
Mitsubishi Chemical										
ratio (%)										
Others										
ratio (%)										
Polycarbonate Total										
ratio(%)										
Unitika										
ratio (%)										
Polyarylate Total										
ratio (%)										
Total										
ratio (%)										



#### (1) Overall summary

Two types: polycarbonate (PC) and polyarylate (PAR) are used for CTL binder resin. Shipment volume for 2023 was 106.6 tons, or 94.2% from the year earlier. They are

.....  
 .....  
 .....  
 .....