Multi-Client Study

Summary

Research Report

〔**2020 version of Toner Market Forecast**〕

"Toner Business Outlook: Toner as the Heart of the Office Equipment"

= *Aiming for recovery from the COVID-19 crisis* =

Fuji Xerox to part with the "Xerox" brand in late March 2021 (above is Toyama Center, a toner plant)

Production volume of Ricoh and other major makers is estimated to be decreasing significantly in 2020 due to COVID-19 (above is Ricoh's Numazu Plant)

Handan Hanguang OA Toner's production volume has reached the mark of 20,000 tons a year.

Data Supply Inc.
October 2020

<Overview>

I. Theme

＊2020 version [Toner Market Forecast]＊
"Toner Business Outlook: Toner as the Heart of the Office Equipment"
= *Aiming for recovery from the COVID-19 crisis* =

II. Abstract

The global COVID-19 pandemic has not only sharply reduced the shipment volume of hardware machines and deserted offices, it has also decreased paper-based output of copiers and printers significantly.

In the past, the office equipment industry ensured business continuity so long as already installed machines were kept in operation, no matter how sluggish hardware shipments became. However, the pandemic kept employees away from their office in major countries of large demand due to lockdown measures.

Temporarily halted production and difficulties in obtaining parts derailed product shipment and the need to review the supply chain concentrated in China also emerged as a major problem.

Needless to say, there was a temporary increase in consumable supplies among makers, products, and regions, but shipment volume of hardware machines and consumables such as toner is predicted to be sharply downward in 2020 due to negative factors growing since May.

If employees continue to be asked to refrain from going out to work, it's questionable that things will go back to normal completely in office settings, and there's even a possibility that remote workstyles can create new business practices as to paper output, its method, acceptable output range, and security.

Data Supply Inc. has published reports on the "toner business" for 35 years, and will be analyzing this unique aspect, while studying the prospect of the toner business (material, environment, development, production, cost, partnership, etc.), resin business, carrier business, magnetic oxide business, CCA business, colorant business, external additives business, and all other related business.

Reflecting the severe economic circumstances, this year's report provides renewed and detailed study and analysis of the toner and related industry's trends, from development to production, and supply relationships. We hope that our report will help all readers concerned to revamp their business again.

III. Items and Makers

1. Target Items
   1) Toner: (1) Pulverized toner (color and monochrome) (2) Chemically prepared toner (color and monochrome)
   2) Resin for toner: (1) Polyester-based resin (2) Styrene-acrylic-based resin (3) Others 3) Carriers 4) Magnetic oxide 5) Charge control agents (CCA) 6) Colorants for color toner 7) External additives 8) Carbon black 9) Toner wax 10) Other related items
2. Target makers
   1) Major makers and dealers: Toner makers (71 at home and abroad) / Toner resin makers (19) / Carrier makers (4) / Magnetic oxide makers (4) / CCA makers (7) / Colorant makers (9) / External additive makers (14) / Carbon black makers (3) / Wax makers (8) 2) Other related makers

IV. Research Period and Methodology

1. Research Period: From 2018 to 2024
2. Methodology
   1) On-site and in-person interviews with target 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. Research Form: This is a multi-client study.
2. Research Period: From June to mid-July, 2020
3. **Publication Date** (PDF format): **October 23, 2020 (English version)**
4. **How to Apply:** Please apply via email. Please indicate your company name, department, office phone number, and your name in your email and send it at infods@datasupply.jp
5. **Price:** $6,000- (English version)
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Excerpt from "Comprehensive Analysis"

(Actual figures and comments are shown in the full version.)

(2) Definition of "Category 2" Regulation

The possible impact for the office equipment industry is the fact that many makers use titanium dioxide to adjust charging in color toner.

After October 2021, any toner containing 1.0 percent or more of titanium dioxide will be regarded as a carcinogen and is required to be labeled as such with the GHS labelling (described below) as defined by the UN. Even if the ratio is less than one percent, the product still has to be documented as such in the Safety Data Sheet or SDS.

【EU

Acute toxici
(Category 1-

<Cut-off/concer

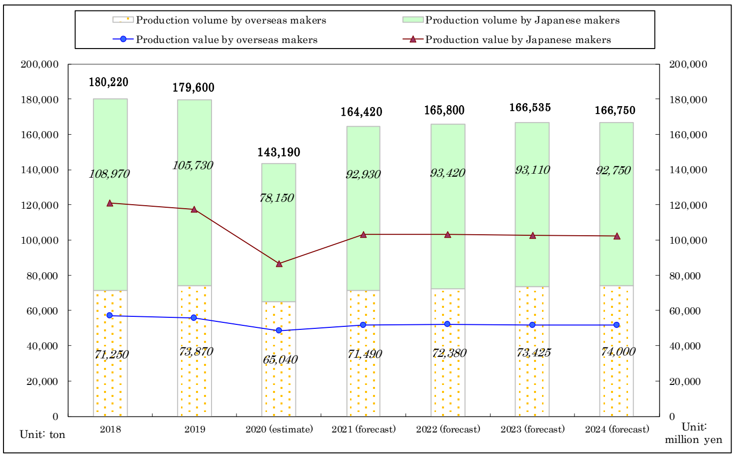
Ingredient classified as:	Cut-of Cat
Category 1A mutagen	≥
Category 1B mutagen	
Category 2 mutagen	

When titanium dioxide is sub
certification will also be affected
certificate to be granted, and thu
It is also said that the BAM st
effective on October 1, 2021, or t
if the ratio of titanium dioxide is
unique ideas of BAM, such the
September meeting. BAM's origi
certification version is revised.

A. Comprehensive Analysis

1. Worldwide trend of toner production

1) Changes in overall production volume by Japanese and overseas makers (2018-2024)



Unit: ton

		2018		2019		2020 (estimate)		2021 (forecast)		2022 (forecast)		2023 (forecast)		2024 (forecast)	
			%		%		%		%		%		%		%
Production volume by overseas makers															
	%														
Production volume by Japanese makers															
	%														
Total															
	%														

Unit: million yen

		2018		2019		2020 (estimate)		2021 (forecast)		2022 (forecast)		2023 (forecast)		2024 (forecast)	
			%		%		%		%		%		%		%
Production value by overseas makers															
	%														
Production value by Japanese makers															
	%														
Total															
	%														

The worldwide production volume of toner of 2019 decreased 99.7 percent to 179,600 tons year on year and the production value was down 97.2 percent to 173.31 billion yen compared to the previous year. While the production volume by overseas makers such as China is on the rise, the production volume by Japanese makers has been decreasing year by year. The share of Japanese makers decreased to 58.9 percent of the total.

The entire toner market will be largely affected by the spread of COVID-19 in 2020. Subsequent lockdowns in major cities of the world will make offices empty and lead to a significant decrease in total demand especially of PPC/MFP. In addition, many Japanese hardware makers have allowed their employees to work from home as the pandemic is likely to linger around. Amid this, some makers are putting off engine and toner development. The global trend shows the practice of working from home will stay to some extent in the world even after the virus has subsided, suggesting office printing demand is not likely to recover to the pre-corona levels after 2021. Going forward, companies will try to maintain toner demand by finding it among professional and home users, but competition will become even more intense in a market that is becoming smaller, in which case will accelerate the trend of industry restructuring, including business withdrawal and plant consolidation.

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Excerpt from "Comprehensive Analysis"

5) Application and production volume of value-added toner

Toner type	Maker	Production volume	Application
Clear	Fuji Xerox, Ricoh, OKI Data, Xeikon, Kodak, Canon (equipment no longer available)	High production volume like white toner. 2-3 tons a year in case of Fuji Xerox.	Used for security, value-added printing (business cards, packages, etc.) and undercoat of rough paper.
White	Ricoh, Kao, Xerox, Xeikon, Kodak, Mikasa Sangyo, Fuji Xerox, Konica Minolta (available in FY2020)	Highest volume among value-added toners. Ricoh produces 5-6 tons a year combined with clear toner.	Used for background printing of transparent film, or undercoat of text printing.
Fluorescent (UV)	Mikasa Sangyo, Kodak, Kao, Ricoh, Fuji Xerox (pink)	Volume by each maker is low at less than 1 ton a year.	Used for textiles and teaching materials at schools for the blind, certificates, ID documents, tickets, etc.
Gold and silver	Fuji Xerox, Kodak, Xeikon, Ricoh (available in late 2020)	Volume by each maker is low. Production volume is around 1-2 tons a year by Fuji Xerox.	Certificates, greeting cards, photos, and value-added prints.
Green, blue, orange, red, extra magenta, etc.	Xeikon, Xerox, Kodak, Fuji Xerox	Volume by each maker is low.	For commercial printing, labels and packaging printing. Red is for red stamps used for certificates.
High chroma	Konica Minolta	Volume is low.	For commercial printing. Demand is high among specific
MICR toner	Troy		
Biomass toner	Sharp, Ricoh		
Invisible toner	Toshiba TEC		

Value-added toner is designed
when promoted to customers.
Value-added toner is especiall
sell a hardware machine (hand
market is as large as several h
to several tons a year, which is

6) Development trend of liquid

Maker (including those already withdrawn)	
HP	At prese “HP Indi and flexi complete toner is p
Miyakoshi	Miyako and the printing feature a with a pa
PFU	As with IGAS 20 on silicon
Toshiba	At JGA later disc
Xeikon	Xeikon Trillium there's n October
Océ	Like Xe there' no just befo
Others	Among had been

(2) Production volume by application and by OEM/third party (2018-2020)

Unit: ton

		2018	2019	2020 (estimate)
Monochrome PPC toner (incl. PP use)	OEM			
	Third party			
	Total			
	Third party ratio			
Monochrome printer toner (incl. FAX use)	OEM			
	Third party			
	Total			
	Third party ratio			
Total of toner for monochrome use	OEM			
	Third party			
	Total			
	Third party ratio			
Color PPC toner (incl. PP use)	OEM			
	Third party			
	Total			
	Third party ratio			
Toner for color printers	OEM			
	Third party			
	Total			
	Third party ratio			
Total of toner for color use	OEM			
	Third party			
	Total			
	Third party ratio			
Total	OEM			
	Third party			
	Total			
	Third party ratio			

*Color toner in the chart includes black toner for color machines, in addition to Y/M/C toners. The definition of the color toner on page two and others are Y/M/C toners only.

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Demand of toner for monochrome machines is mainly created in China, Southeast Asia, Eastern Europe, Russia, the Middle East, Africa, and South America, where the third-party ratio is extremely high. On the other hand, toner for color machines is dominant in Japan, North America, and Western Europe, keeping the third-party ratio low.

Demand of color toner for color equipment, such as color PPC is expected to decline significantly in 2020 due to the COVID-19 pandemic across the globe, particularly in North America and Europe, where major cities implemented long-term lockdown measures. Toner for monochrome machines, which is mainly demanded in emerging markets, is dropping sharply in terms of OEM production like the toner for color machines, but third-party toner has been recovering rapidly since March in China and elsewhere, and will less likely be impacted than OEM.

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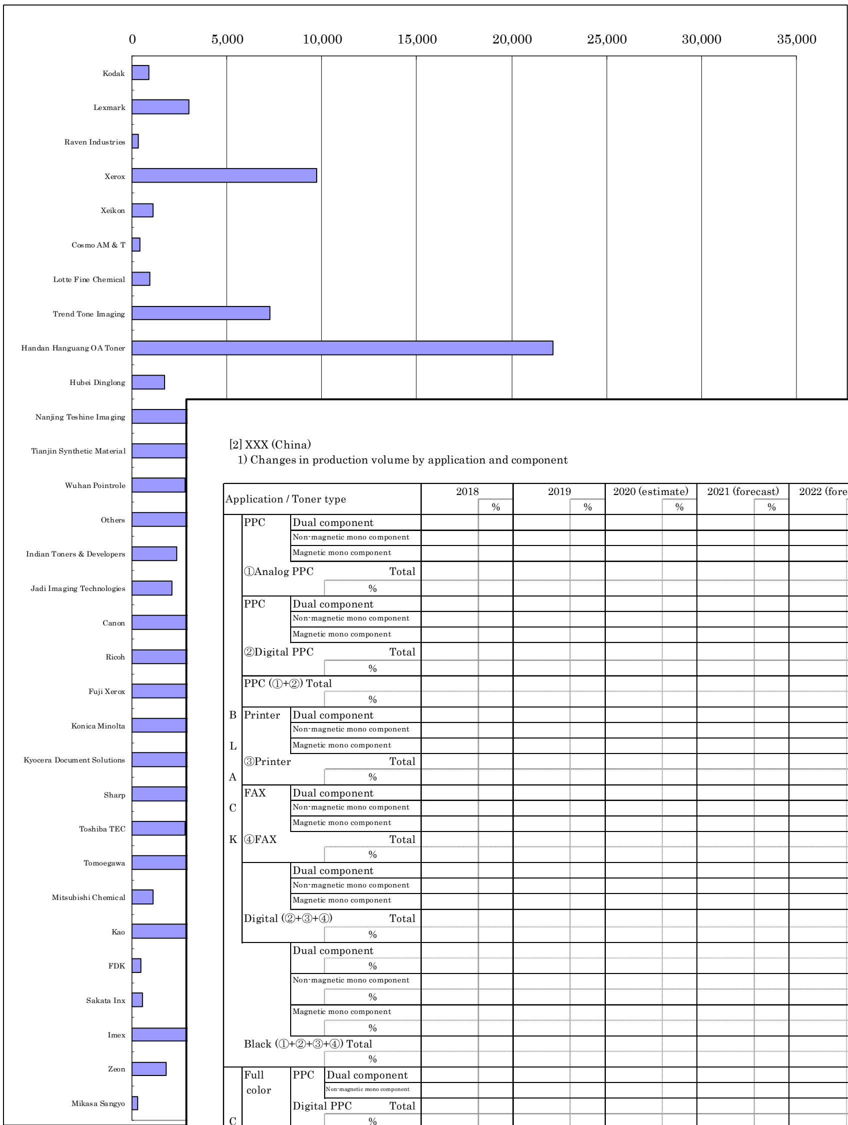
Excerpt from and "Toner Market"

[Overall production volume by maker (2019)]

Unit: ton



[2] XXX (China)

1) Changes in production volume by application and component

Unit: ton

Application / Toner type			2018	%	2019	%	2020 (estimate)	%	2021 (forecast)	%	2022 (forecast)	%	2023 (forecast)	%	2024 (forecast)	%
BLACK	PPC	Dual component														
		Non-magnetic mono component														
		Magnetic mono component														
	①Analog PPC	Total														
		%														
	PPC	Dual component														
		Non-magnetic mono component														
		Magnetic mono component														
	②Digital PPC	Total														
		%														
	PPC (①+②) Total															
		%														
	Printer	Dual component														
		Non-magnetic mono component														
		Magnetic mono component														
	③Printer	Total														
		%														
	FAX	Dual component														
		Non-magnetic mono component														
		Magnetic mono component														
	④FAX	Total														
		%														
		Dual component														
		Non-magnetic mono component														
		Magnetic mono component														
	Digital (②+③+④)	Total														
		%														
		Dual component														
		%														
		Non-magnetic mono component														
		%														
		Magnetic mono component														
		%														
	Black (①+②+③+④) Total															
		%														
COLOR	Full color	PPC Dual component														
		PPC Non-magnetic mono component														
		Digital PPC Total														
		%														
		Printer Dual component														
		Printer Non-magnetic mono component														
		Printer Total														
		%														
		Dual component														
		%														
		Non-magnetic mono component														
		%														
	Full color Total															
		%														
	Mono color															
		%														
	Color Total															
		%														
TOTAL		Dual component														
		%														
		Non-magnetic mono component														
		%														
		Magnetic mono component														
		%														
		Mono color														
		%														

SAMPLE

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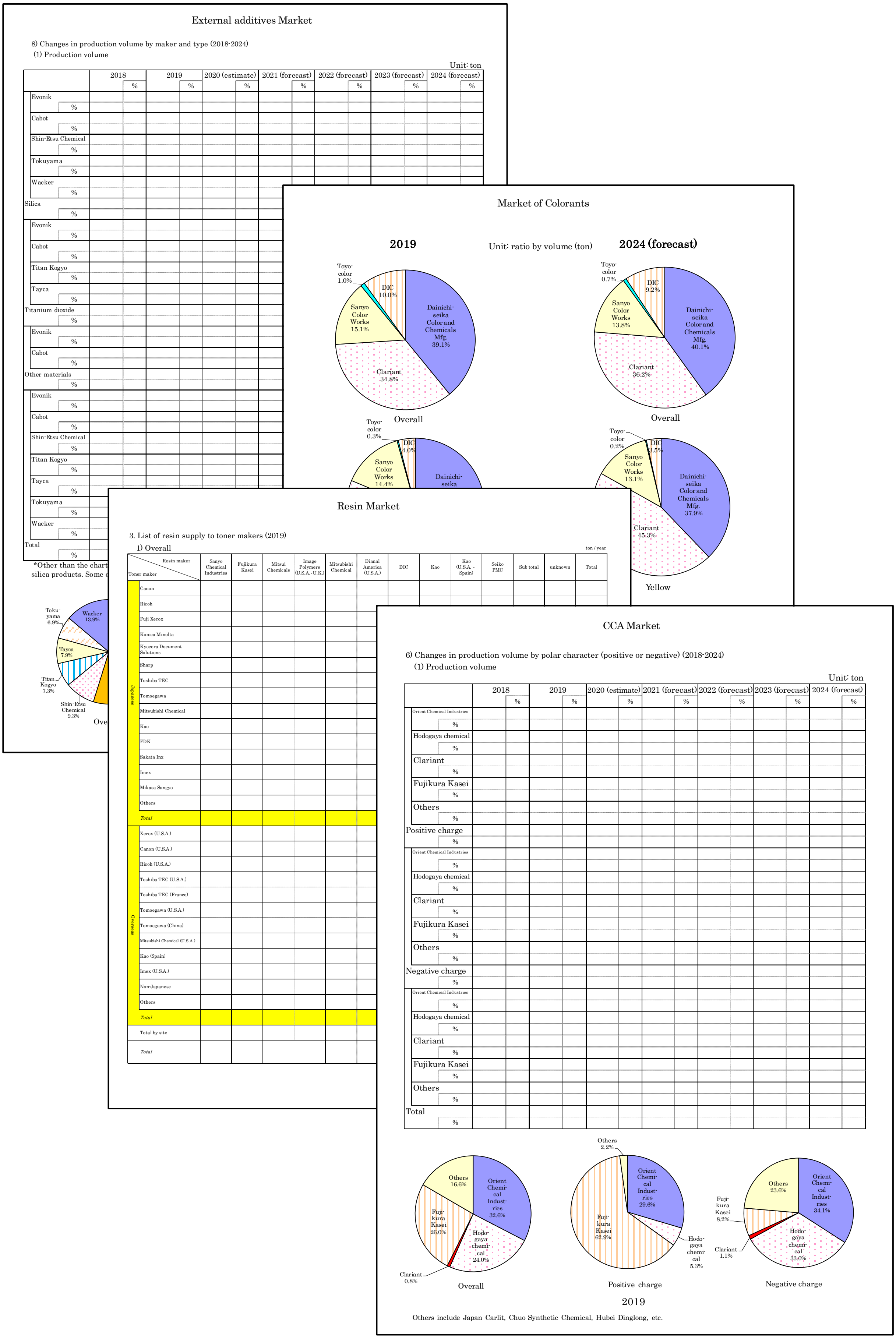
Excerpt from and "Resin Market," "CCA Market," "Market of Colorants," and " External additives Market"



<Table of Contents>

＊Back numbers of the Toner Market Forecast Report＊

*The toner report (English version) has been available since 1989.

1. September, 2007
"Future Aspects of Toner for High-speed Printers and POD, and Related Materials"

2. September, 2008
"Structure Analysis of Toner Market Transformed by Newly Introduced Chemically Prepared Toner"

3. September, 2009
"Structure Analysis of Toner And Related Market Facing an Emergence of Major CPT Manufacturers"

4. September, 2010
"Amid Dwindling Specialized Toner Manufacturers: Comprehensive Breakdown of Toner and Related Markets"

5. March, 2011
"Recovery from 3.11 on the Toner Industry Long Time Forecast for Toner and Related Market"

6. September, 2012
"Strategy of the Toner Industry in a Slow-growth Market"

7. September, 2013
"Forecast of the Toner Industry that Counts on Newly Emerging Countries"

8. September, 2014
"Forecast of the Toner Industry Lead by Ultrafine Particle Toner"

9. September, 2015
"Toner Industry Revitalizes the Market through the Provision of Value-added Toners"

10. October, 2016
"Outlook for the Toner Industry that Will Continue to Strive for Excellence in High-quality Toner Products"

11. October, 2017
"Future Prospects of the Toner Industry: A Call for Cost Competitiveness to Recreate the Market"

12. October, 2018
"The Future of the Toner Industry Challenged by Environmental Issues"

13. October, 2019
"The Future of the Toner Industry: The Safe and Sound Operation Required"