



長興材料

# ETERNAL MATERIALS

Elements of Infinite Possibilities



# 2022 Q2 Operating Result & Global PCB Market Trend

Presenter : Director, H.T. Shen (Photoresist Materials Division)

B.C.Liu (spokesperson)

Date : 2022/08/11



## Agenda

1. Profile & 2022 Q2 Operating Result
2. Introduction of the Photoresist Materials Division & Global PCB Market Trend



# Profile

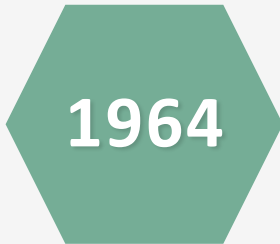




**Chairman — Allen K. L. Kao**

**Core Business Manufacturing, processing and sales**

**Founding**



**Employees**

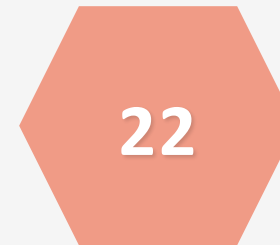


**Overall Sales**

**Revenue**



**Production Sites**



Taiwan **4**

China **12**

USA **1**

Thailand **1**

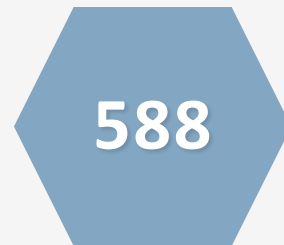
Japan **2**

Malaysia **1**

Italy **1**

**Headcounts of**

**Researcher**



**R&D**

**expenditures**



Notes 1 :

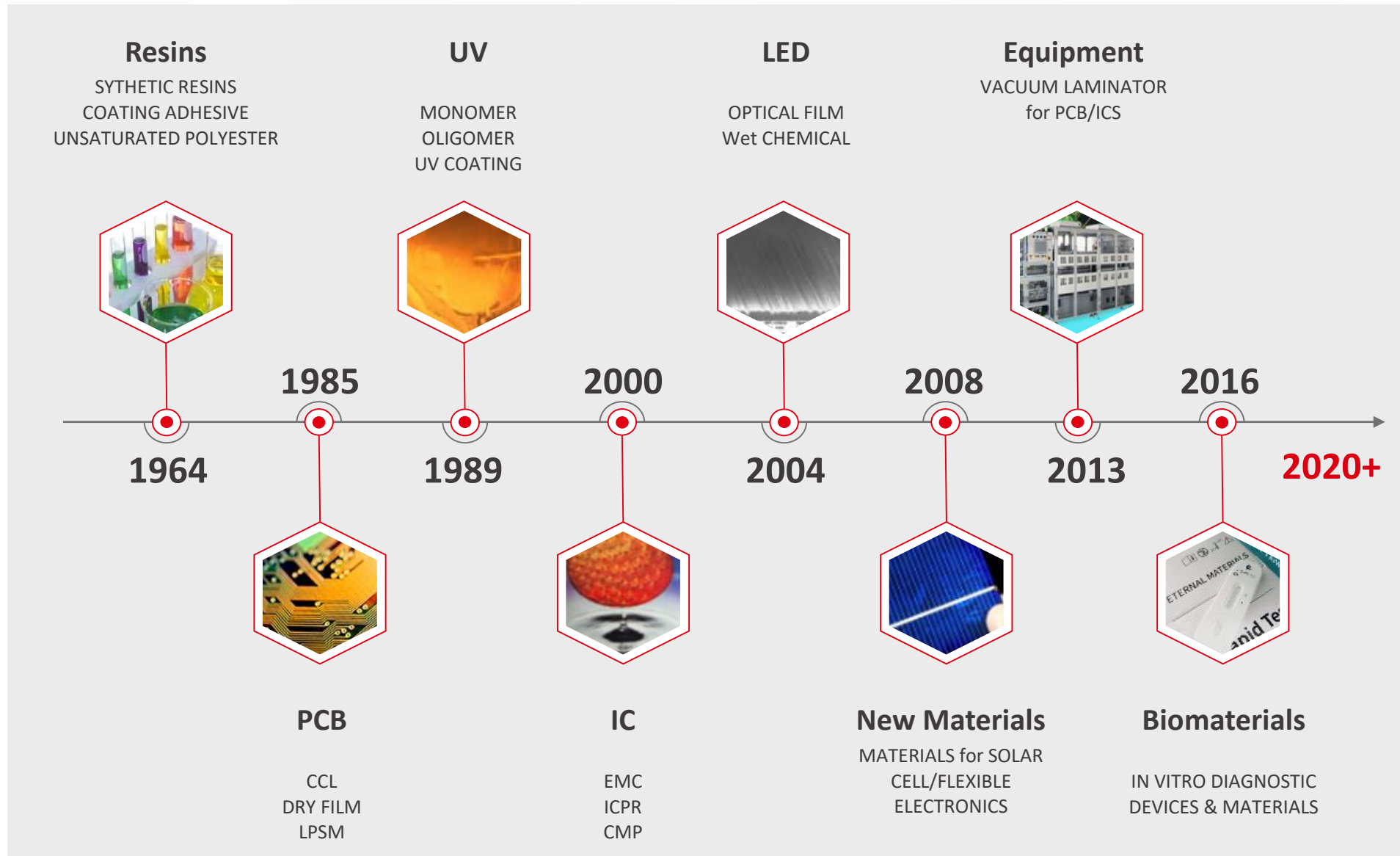
Number of Employees on June 30, 2022

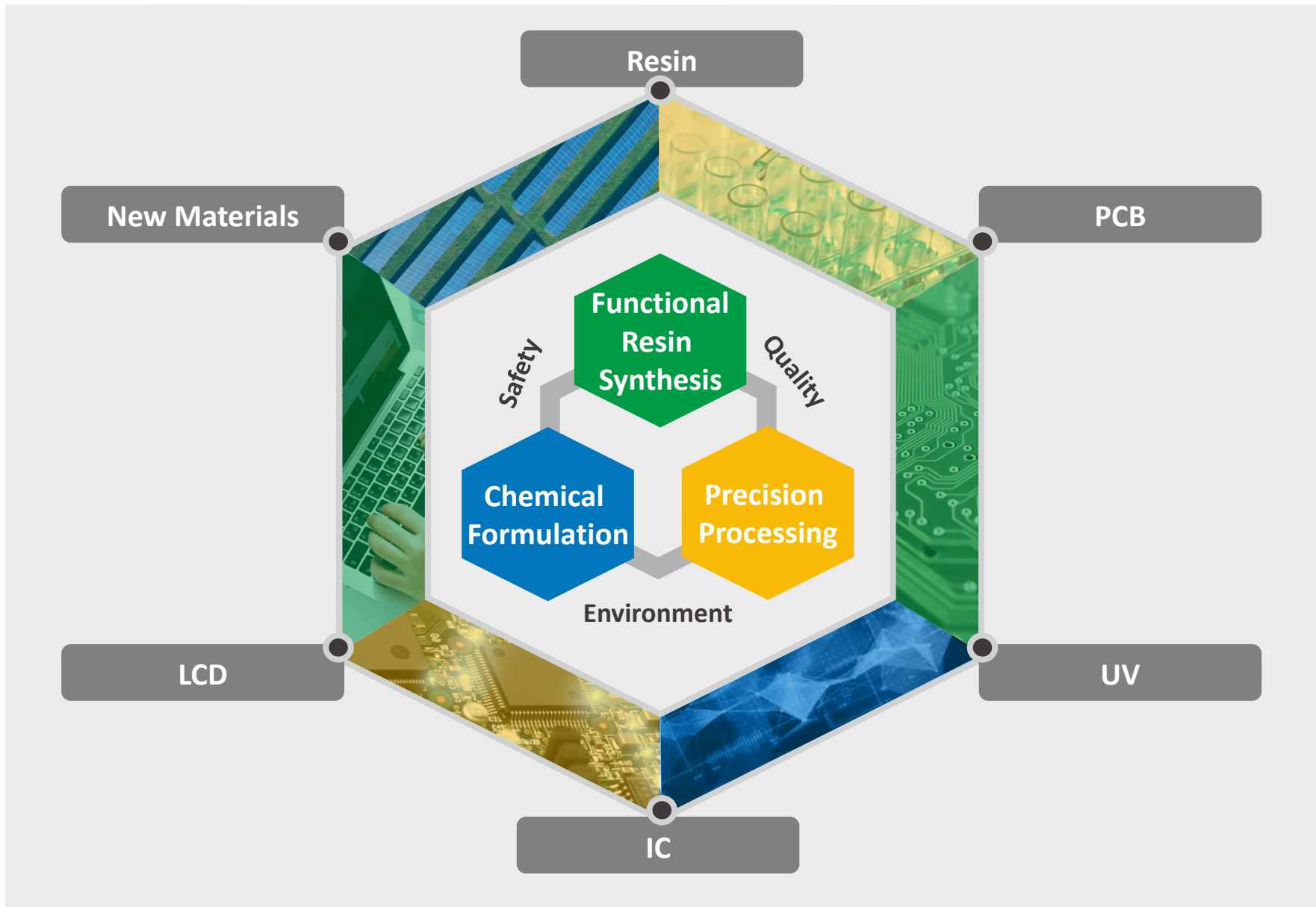
Notes 2:

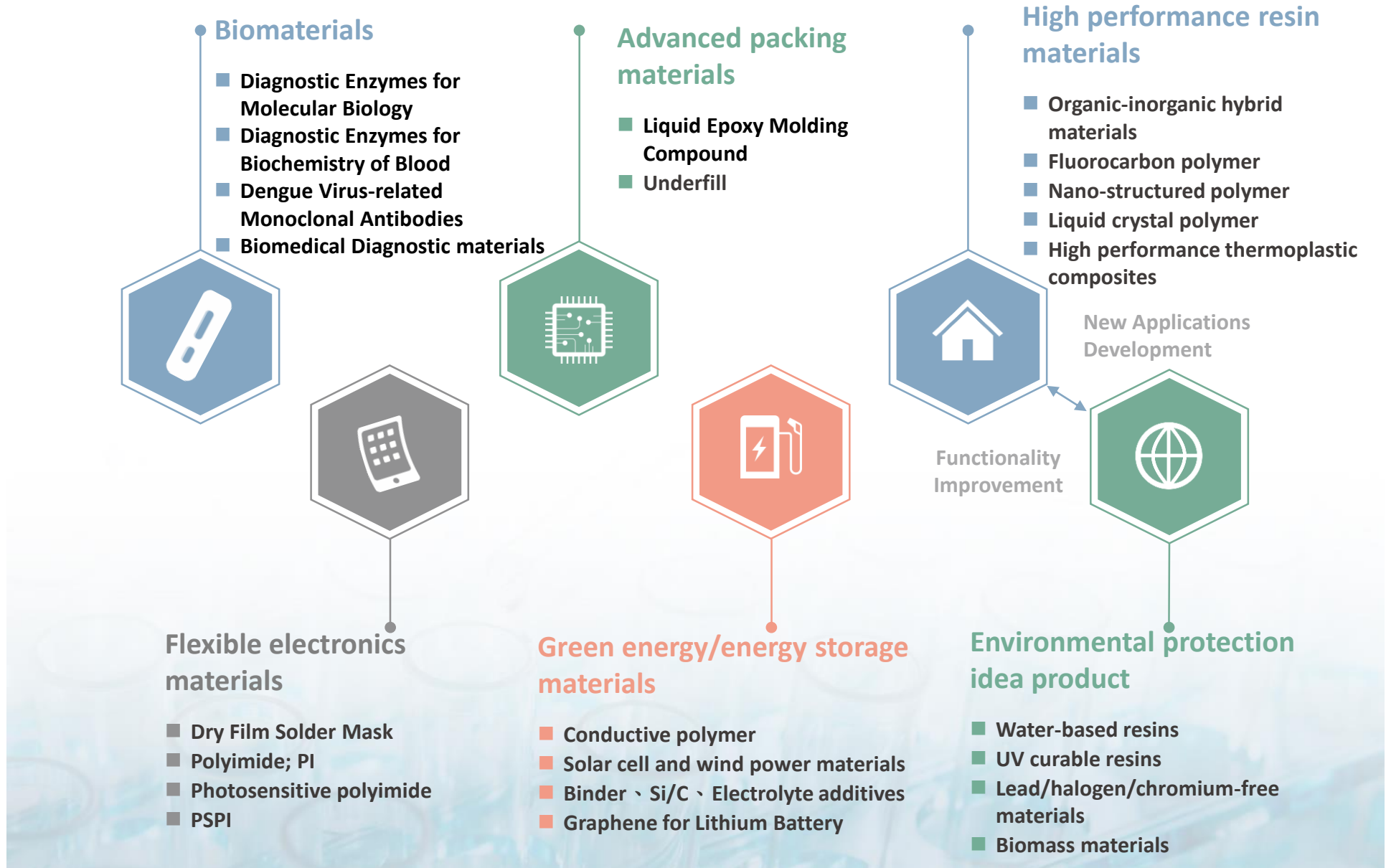
refer to year 2021 Consolidated statement

One of the leading suppliers of Dry film photoresist in the world.  
 One of three largest UV curable Monomers & Oligomers material suppliers.  
 One of the leading suppliers of synthetic resin in Asian.

# Development Milestones

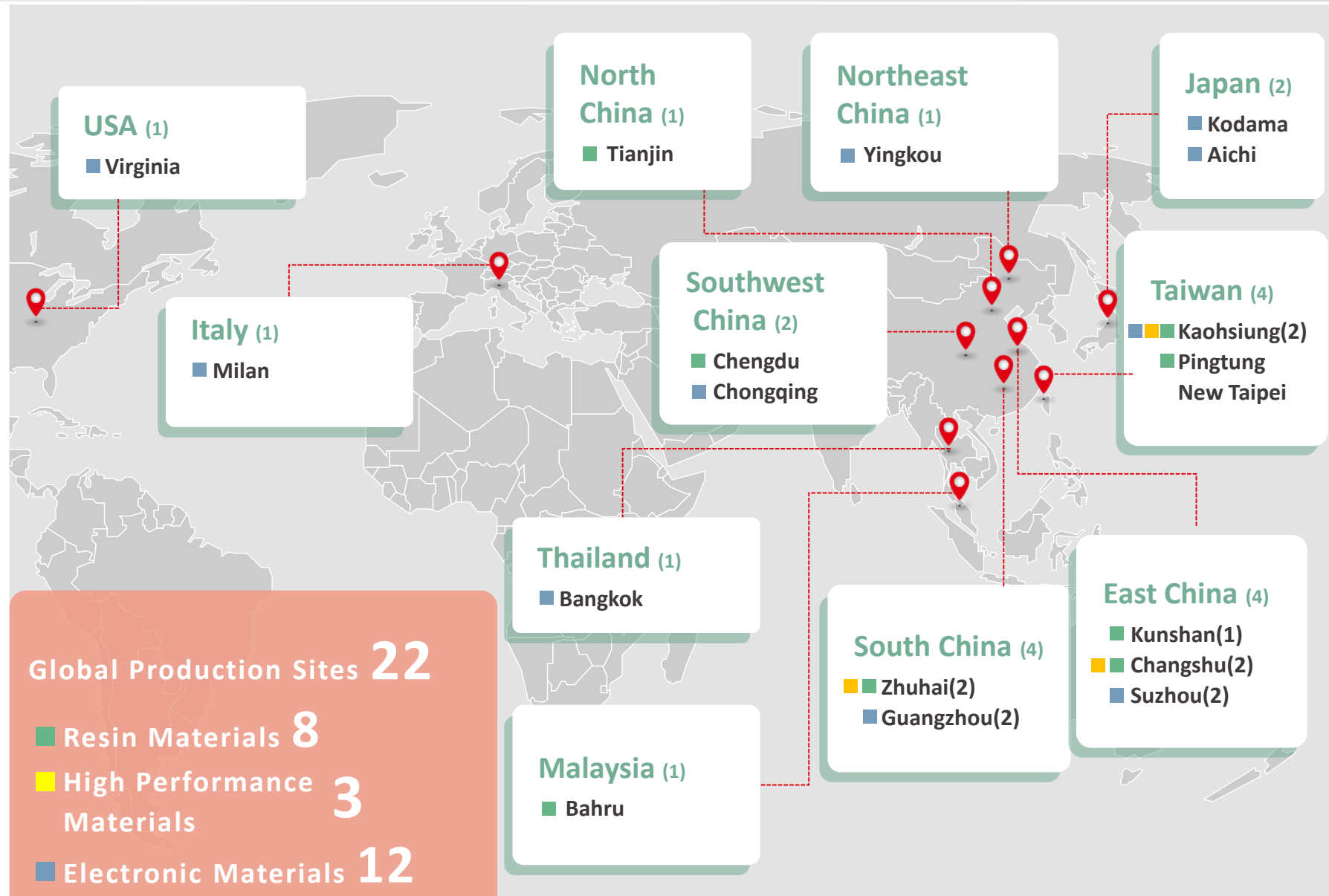




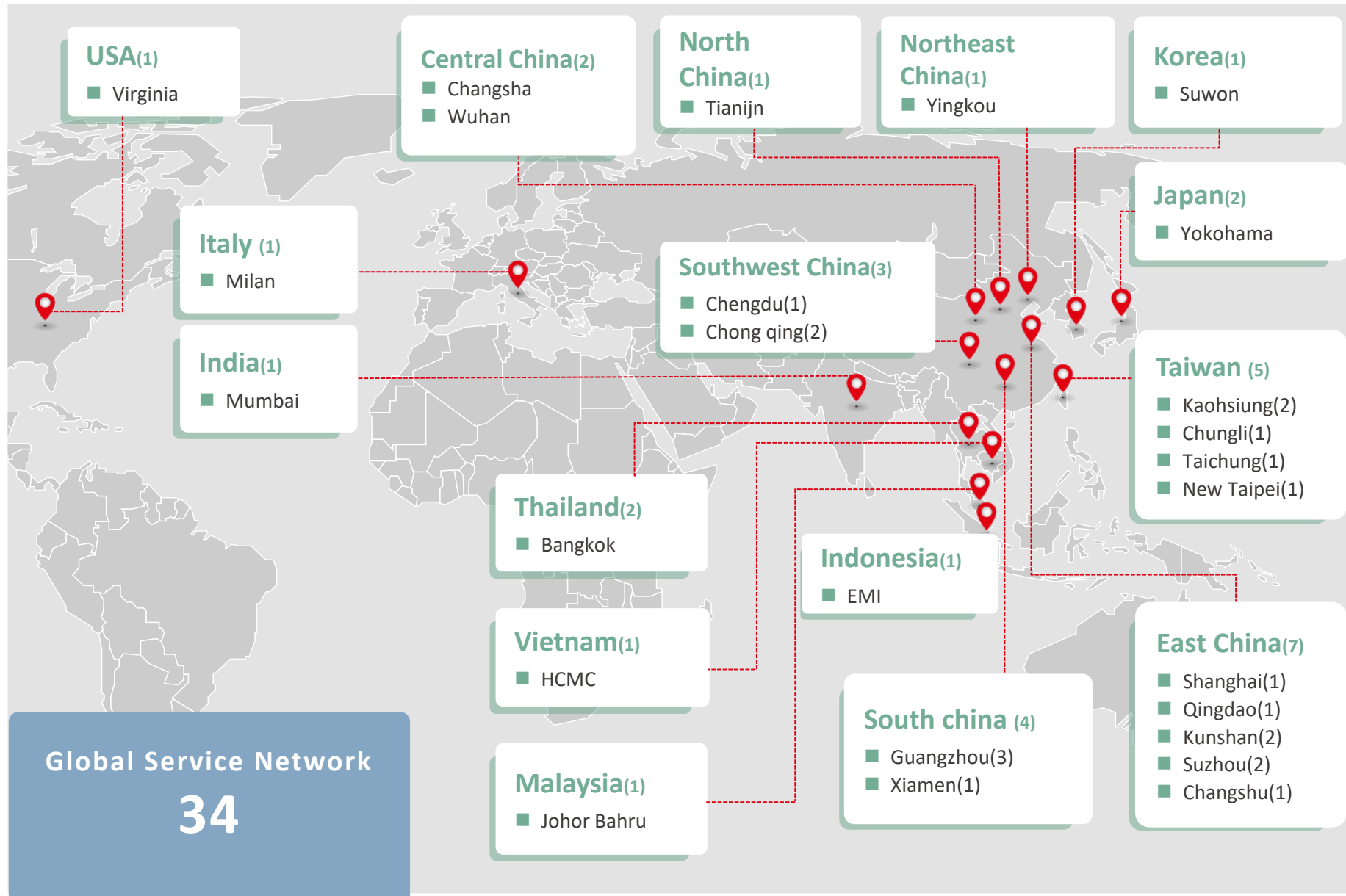




# Global Production Sites



# Global Service Network



Global Service Network

34

# 2021 Product Lines Sales Ratio



## Resins Materials 49%

- Alkyd Resin 、Solvent-Based Acrylic Coating Resin
- Water-Based Acrylic Coating Resin
- Acrylic Resin For Adhesives and Overprinting
- Polyester Polyol Resin 、Fluorocarbon Resin
- Polyurethane Resin 、Saturated Polyester Resin
- Amino Resin 、Optoelectronic Materials
- Other Coatings Resin
- Unsaturated Polyester Resin
- Vinyl Ester Resin 、Fire Retardant Resin
- Epoxy System 、Structural Adhesive
- Polyester for Polyurethane Foam

## Electronic Materials 28.8%

- Dry Film Photoresist
- Dry Film Solder Mask
- UV INK
- Dry Film Photosensitive Polyimide
- Liquid Polyimide Material
- Vacuum Laminator
- Toll Coating Service
- Paper Phenolic Copper Clad Laminate
- Composite Epoxy Copper Clad Laminate

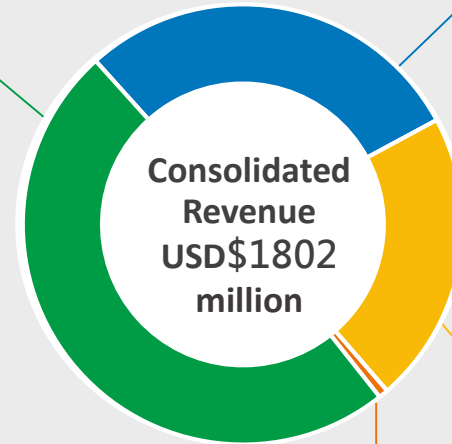
## High Performance Materials

21.5%

- UV Monomers
- UV Oligomers
- Special Coatings
- silicone powder 、Additives
- 3D UV printing Material 、EMC
- Optical Silicone & Epoxy material - for LED Packaging

## Others 0.7%

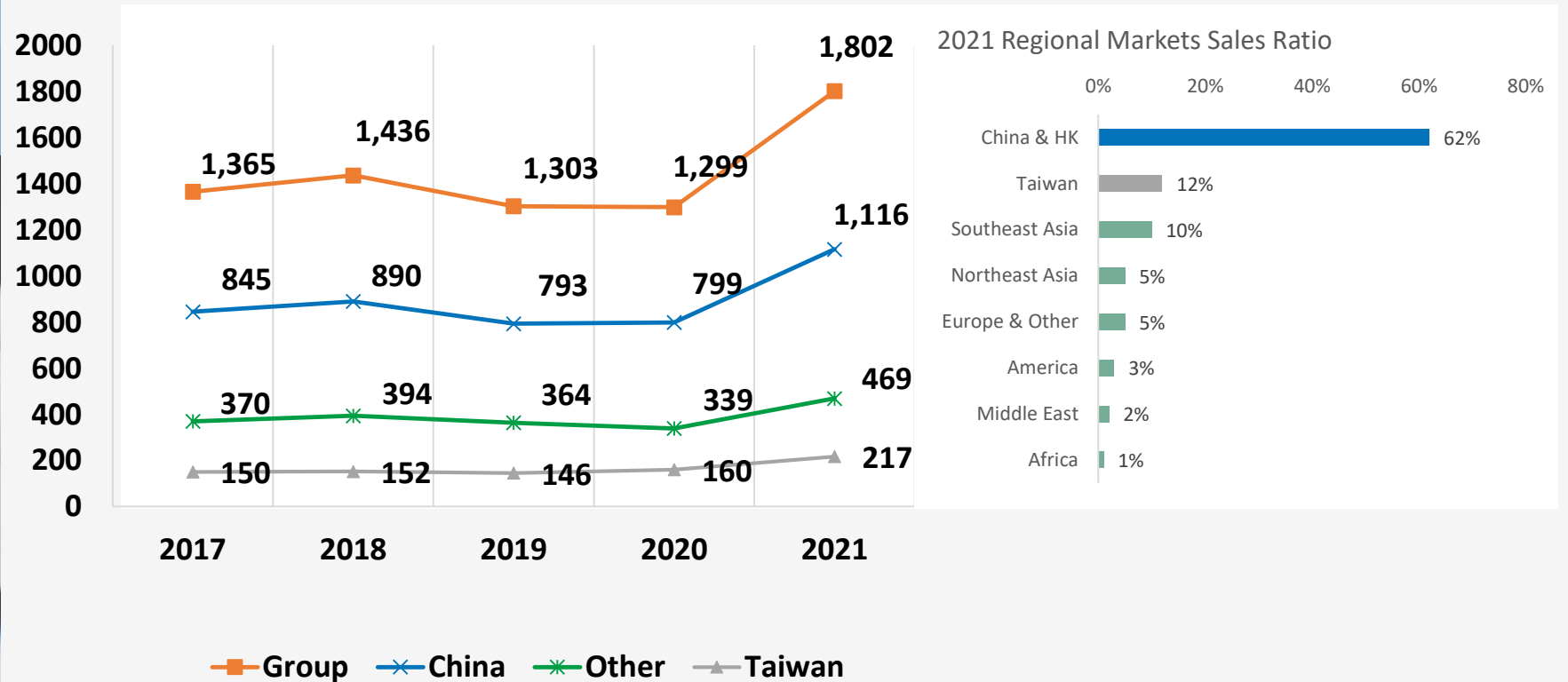
- Enzyme
- antibody for IVD
- conductive polymer
- Liquid molding compound
- Hydrophilic film for strip
- Electrolyte
- Si/C for LIB materials
- Binder



# Annual Sales Distribution, 2021 Regional Markets Sales Ratio



■ Unit : USD million



# 2022 Q2 Operating Result



# Financial Information-Balance Sheets & Key Indices



	2022Q2		2021		2020		Unit : TWD Millions
	Amount	%	Amount	%	Amount	%	
Cash and cash equivalents and current financial assets	6,221	<u>10</u>	4,444	<u>7</u>	6,170	<u>11</u>	
Accounts receivable	19,151	<u>30</u>	20,071	<u>33</u>	17,523	<u>31</u>	
Inventories	12,053	<u>19</u>	10,678	<u>18</u>	7,493	<u>13</u>	
Financial assets	3,476	<u>6</u>	3,506	<u>6</u>	3,344	<u>6</u>	
Property, plant and equipment	16,770	<u>27</u>	16,369	<u>27</u>	16,623	<u>30</u>	
<b>Total Assets</b>	<b>63,022</b>	<b><u>100</u></b>	<b>60,536</b>	<b><u>100</u></b>	<b>56,189</b>	<b><u>100</u></b>	
Short-term borrowings	6,494	<u>10</u>	4,588	<u>8</u>	4,404	<u>8</u>	
Current portion of long-term borrowings	4,315	<u>7</u>	4,326	<u>7</u>	2,211	<u>4</u>	
Long-term borrowings	11,717	<u>19</u>	12,506	<u>21</u>	13,185	<u>23</u>	
<b>Total Liabilities</b>	<b>38,184</b>	<b><u>61</u></b>	<b>35,869</b>	<b><u>59</u></b>	<b>32,950</b>	<b><u>59</u></b>	
<b>Total Equity</b>	<b>24,839</b>	<b><u>39</u></b>	<b>24,667</b>	<b><u>41</u></b>	<b>23,238</b>	<b><u>41</u></b>	
<b>Key Financial Ratios</b>							
Average cash collection days	142		138		159		
Average days required for sale	106		85		93		
Current ratio (%)	171		190		210		

# Financial Information-Statements of Comprehensive Income



	2022Q2		2021		2020		Unit : TWD Millions
	Amount	%	Amount	%	Amount	%	
Operating Revenue	25,549	100	50,471	100	38,370	100	
Gross profit	5,644	22	10,694	21	8,886	23	
Operating expenses	(3,466)	(14)	(6,599)	(13)	(5,747)	(15)	
Operating Income	2,178	9	4,095	8	3,139	8	
Non-operating income and expenses	115	0	337	1	6	0	
Net profit attributable to owners of the company	1780		3,549		2,543		
<b>Key Financial Ratios</b>							
Net profit margin (%)	7		7		6		
EPS	1.43		2.86		2.05		
ROE (%)	14		14		11		

# Financial Information-Cash Flow Statements



	2022Q2	2021	2020	Unit : TWD Millions
	Amount	Amount	Amount	
Cash and cash equivalents at the beginning of the year	4,289	6,108	6,010	
Cash flows from operating activities	1,896	750	4,148	
Acquisition of property, plant and equipment	(1,314)	(2,049)	(1,458)	
Increase (decrease) in borrowings	986	1,743	(997)	
Dividends paid	0	(1,860)	(1,736)	
Other items	14	(216)	134	
Effects of exchange rate changes on cash and cash equivalents	68	(187)	7	
Cash and cash equivalents at the end of the period	5,939	4,289	6,108	
Free cash flow	582	(1,299)	2,690	

*Note:* Free cash flow=

Cash flows from operating activities - Acquisition of property, plant and equipment





# Introduction of the Photoresist Materials Division



# Photoresist Materials Division-Product Category



感光型覆蓋膜

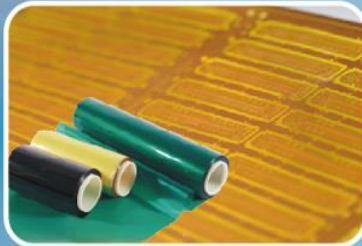


Photo-Imageable Coverlay

薄膜感光型聚醯亞胺



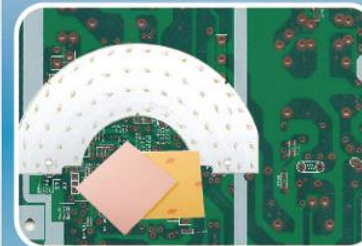
Dry Film Photosensitive Polyimide

液態文字油墨



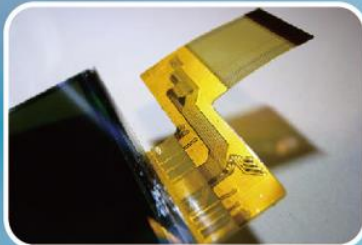
Liquid UV Curable Marking Ink

銅箔基板



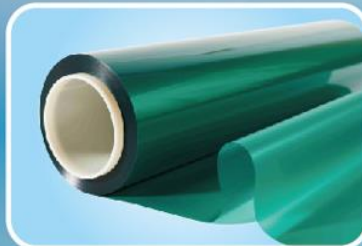
Copper Clad Laminate

液態非感光型聚醯亞胺



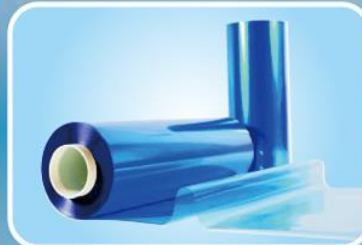
Liquid Non-Photo Polyimide

乾膜防焊光阻



Dry Film Photoimageable Solder Mask

負型水溶性乾膜光阻



Dry Film Photoresist

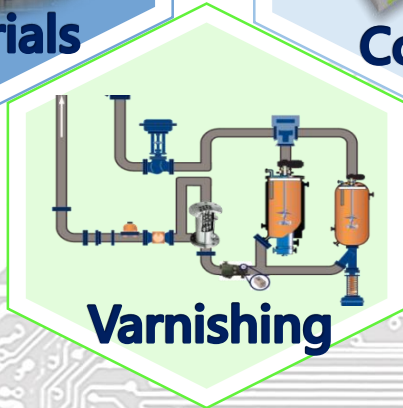
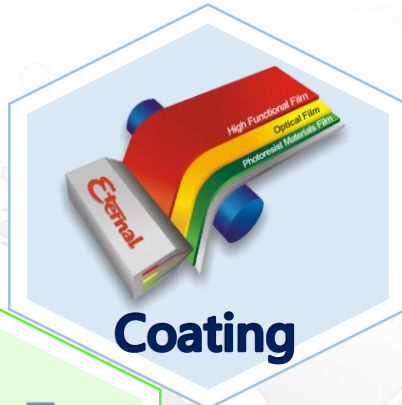


Toll Coating Service  
精密塗佈代工



真空壓膜機  
Vacuum Laminator

# Photoresist Materials Division-One-Stop Service



**Product Storage & Logistics**

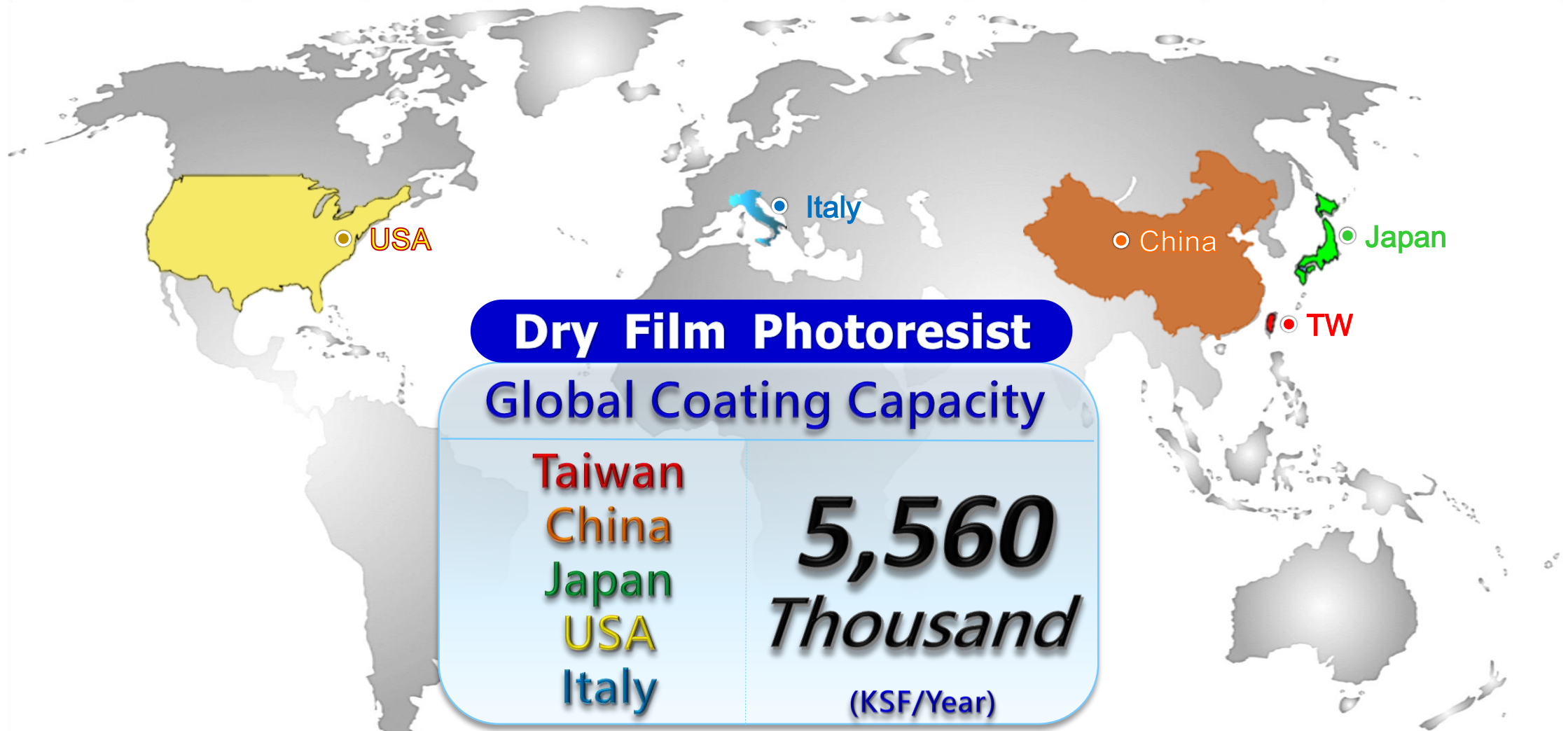
- ①  $22\pm 2^{\circ}\text{C}$ ,  $<60\%RH$
- ②  $5\pm 3^{\circ}\text{C}$
- ③  $-20\pm 2^{\circ}\text{C}$

**Raw Materials Receiving Storage**

**Varnishing**

**Coating**

**Slitting & Packaging**

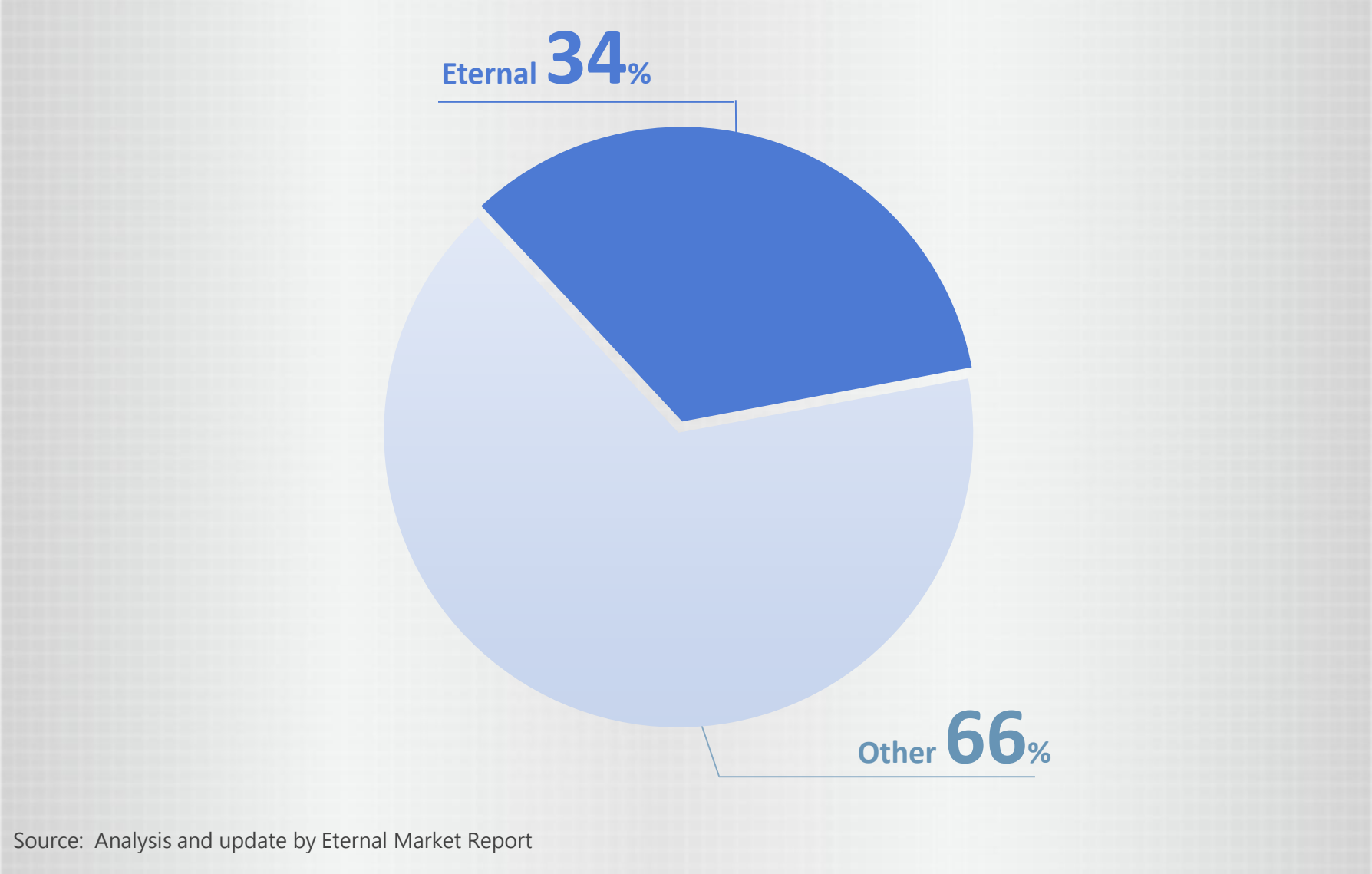


Coating Process Capability Thickness **50nm** ~ **300um**

# Photoresist Materials Division-Global Layout

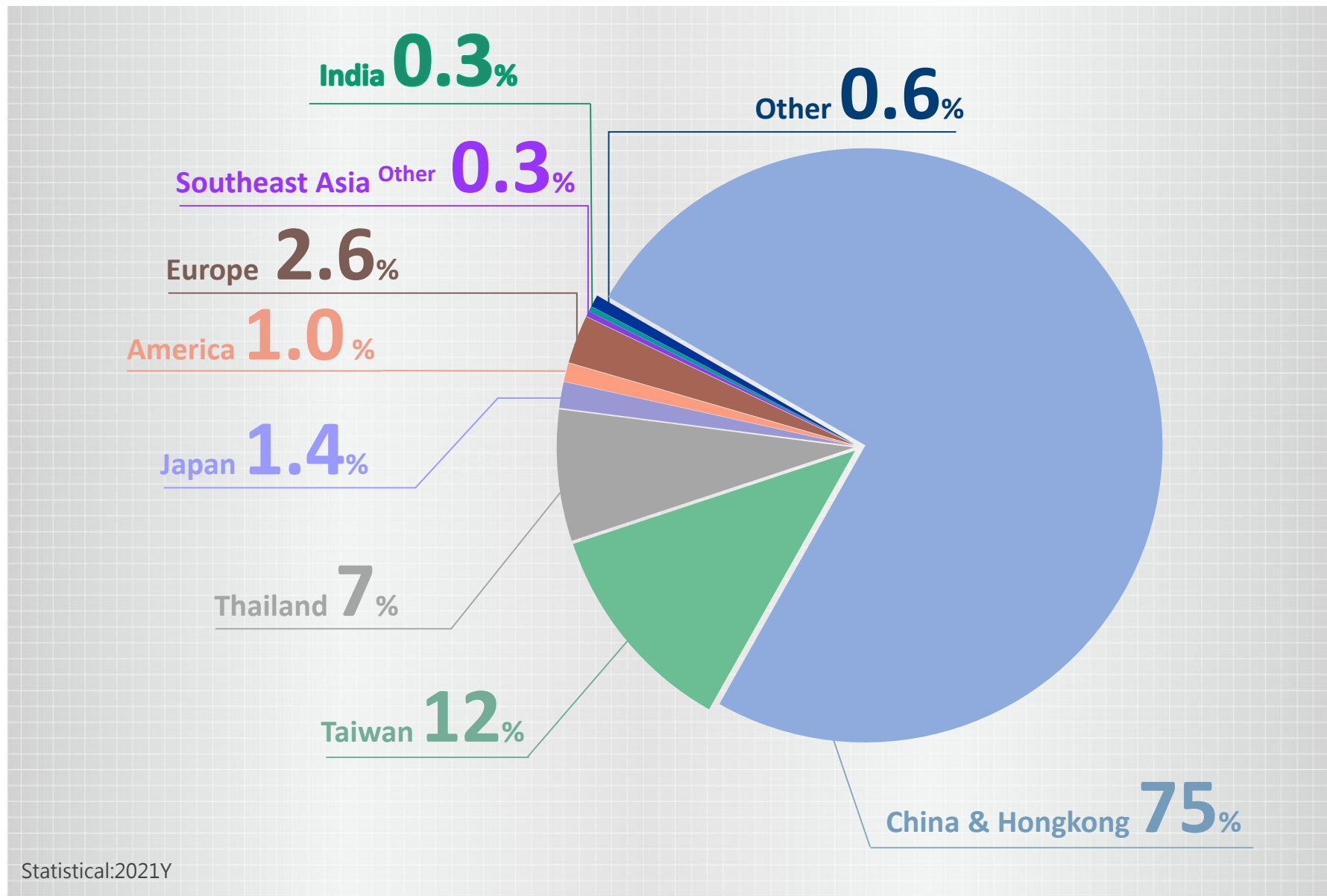


# Photoresist Materials Division-Dry Film Market Share



Source: Analysis and update by Eternal Market Report

# Photoresist Materials Division-Dry Film Regional Markets Sales Ratio



# Photoresist Materials Division-Related Certificates





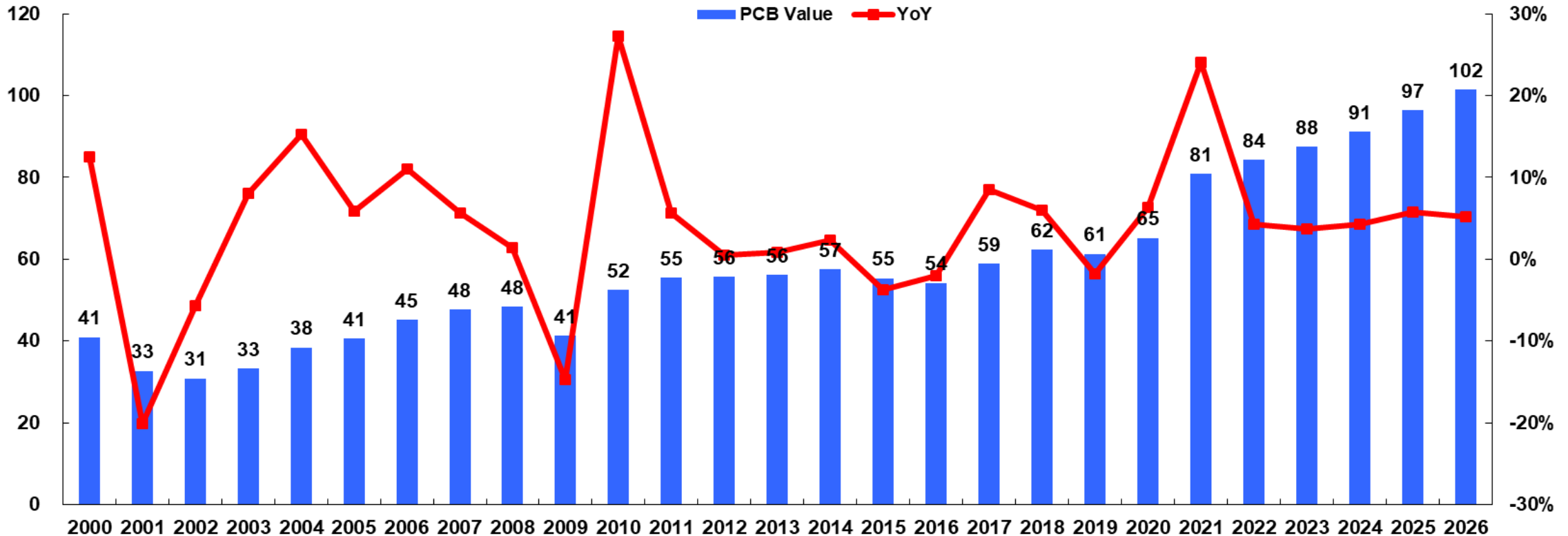
# Global PCB Market Trend



# Global PCB Market Forecast (2021~2026)



Unit : Billion Dollars

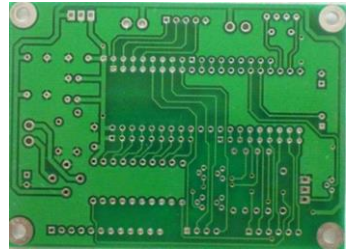
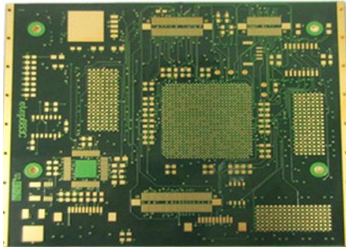

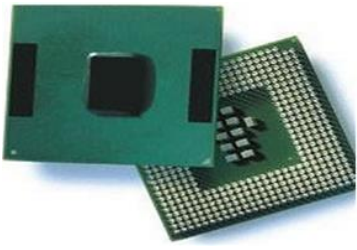
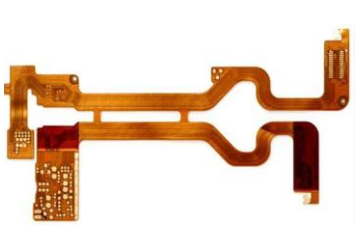
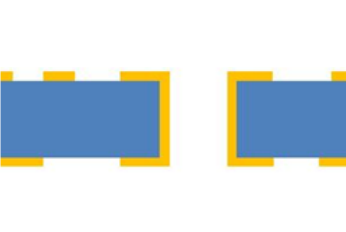

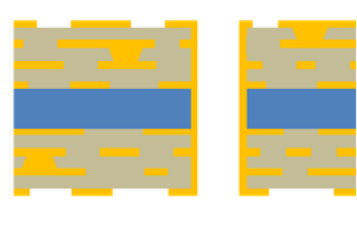
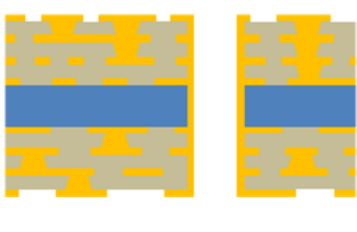



Source: Mar 2022 Prismark Report and Eternal Market Summary

COVID-19, Ukraine conflict, inflation impact of electronic industry of 2022, Prismark forecast the **PCB annual growth rate (CAGR 2021~2026) of 4.6%**, driving by 5G, AIoT and HPC, Smart Car related products in the next five years.

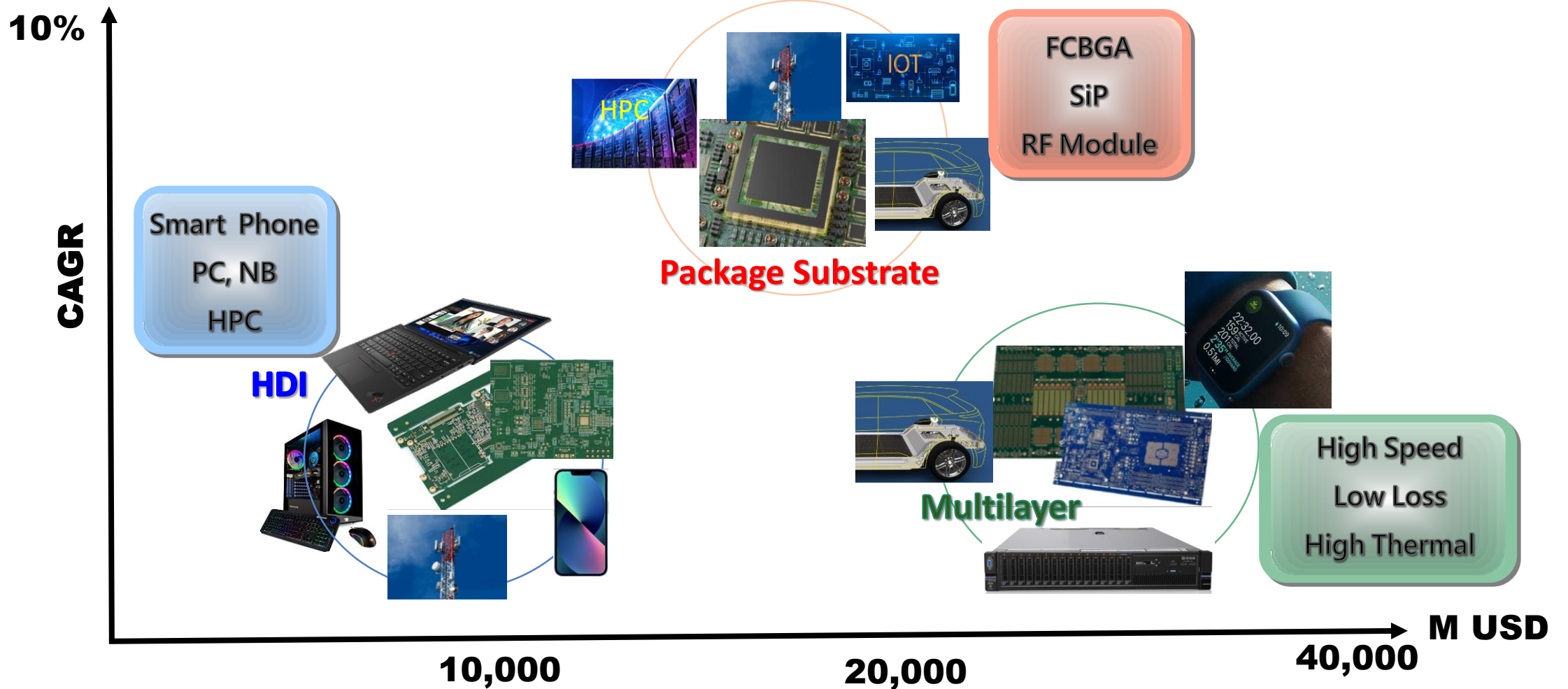
# PCB Product Market Trend (2021~2026)



ITEM	SS/DS	ML	HDI	IC Substrate	FPC
Product					
Structure					
Application	Consumer	PC, NB, Server, Work Station, Industry	Smart phone, PC, NB, HPC, Smart Car	Smart Phone, Module NB, CPU, GPU, Automotive, AI	Automotive, LED lamp Antenna, SIM Card
CAGR (2021~2026) <small>* prisma report May 2022</small>	2.4%	3.7%	4.9%	8.3%	4.1%

Key drive of PCB Product in the future : IC substrate (CAGR=8.3%), HDI and ML, FPC product

# PCB High-Growth Product & Application (2021~2026)

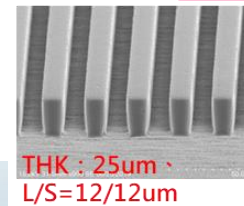


High growth products of PCB : IC substrate for FCBGA, SiP application, HDI for smart phone, HPC, NB, Automotive application and Multilayer PCB for high speed server application.

Application	Product	Base Material	L/S Requirement		
			2020	2021	2023~
Package & wafer Level	 FO WLP/PLP	RDL/ PI	~ 5/5um	~ 1/1um	
Organic substrate Level	 FCBGA	Build up/ ABF	~ 8/8um	~ 6/6um	
Board Level	 HDI / PCB	Laminate/ FR4	~ 25/25um	~ 15/15um	

## Challenge of next generation high resolution DRF :

- Resolution: FOPLP RDL L/S  $\leq 3/3$  um, MSAP L/S  $\leq 15/15$ um, SAP L/S  $\leq 5/5$  um
- Adhesion on build up material: RDL ( PI ), Low Ra ABF materials
- New process control: new develop, stripping etc., process and equipment



1

COVID-19, Ukraine conflict, inflation impact of electronic industry of 2022, Prismrk forecast the PCB annual growth rate (CAGR 2021~2026) of 4.6%, driving by 5G, AIoT and HPC, Smart Car related products in the future.

2

High growth products of PCB for next five years : IC Substrate for FCBGA, SiP application, HDI for Smart Phone, HPC, NB, Automotive application and Multilayer PCB for high speed server application.

3

Eternal high resolution DRF development for next generation PCB, will continue to provide the best service and solution for different kinds of etching and plating process for PCB and package substrate manufacturing.





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