



# 2022 OLED Emitting Material Report



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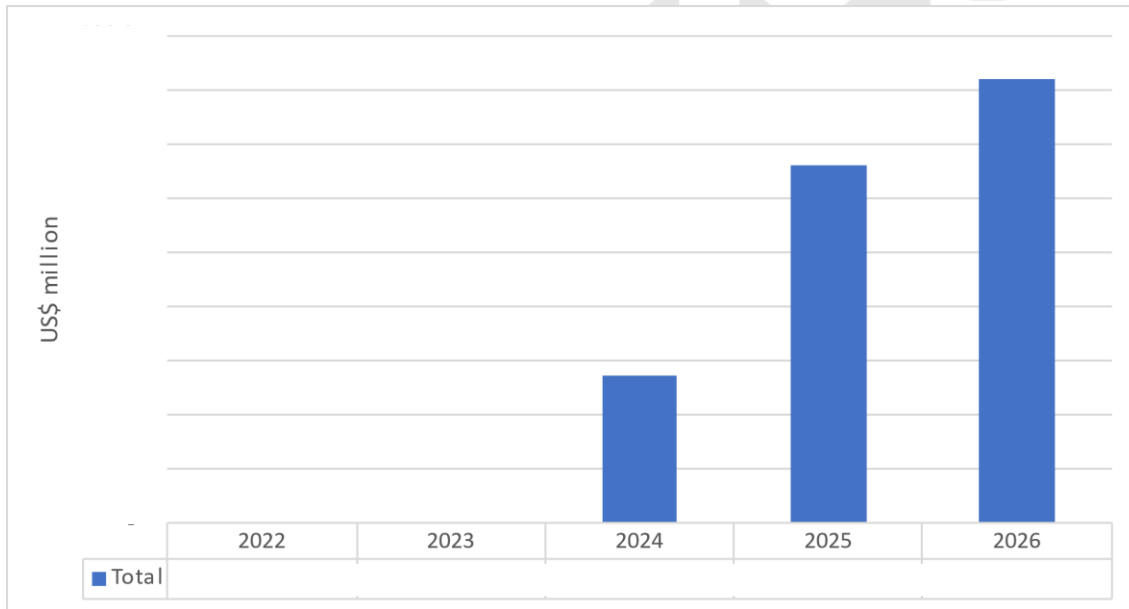
# 4. OLED Industry Issue Analysis

## 4.1 Line Investment Status and Forecast for IT

### OLED Emitting Materials Market Forecast for Apple iPad

- Samsung Display and LG Display's RGB 2stack tandem OLED will be applied to the iPad series in 2024.
- Samsung Display is developing 11-inch panels, LG Display is developing 11-inch and 12.9-inch panels, and BOE aims to supply panels for iPad series in 2025.
- The OLED emitting material market for Apple iPad was calculated as an RGB 2stack tandem OLED structure and forecasted based on the expected shipments of Samsung Display and LG Display.

Light Emitting Material Market Forecast for RGB 2stack Tandem OLED



Source: UBI Research DB

Thickness by Material of RGB 2stack Tandem OLED Used for Market Forecast\*

Materials	Thickness [Å]	Materials	Thickness [Å]
CPL		FBH	
EIL		FBD	
ETL		n-CGL	
aETL		P+	
PRH		HTL	
PRD		R'	
PGH		G'	
PGD		B'	

\* Total thickness per layer of RGB 2stack tandem structure.  
 \* The thickness of each layer is composed of surveyed content and guessed content.  
 \* There may be a difference in thickness from the actual mass-produced product.

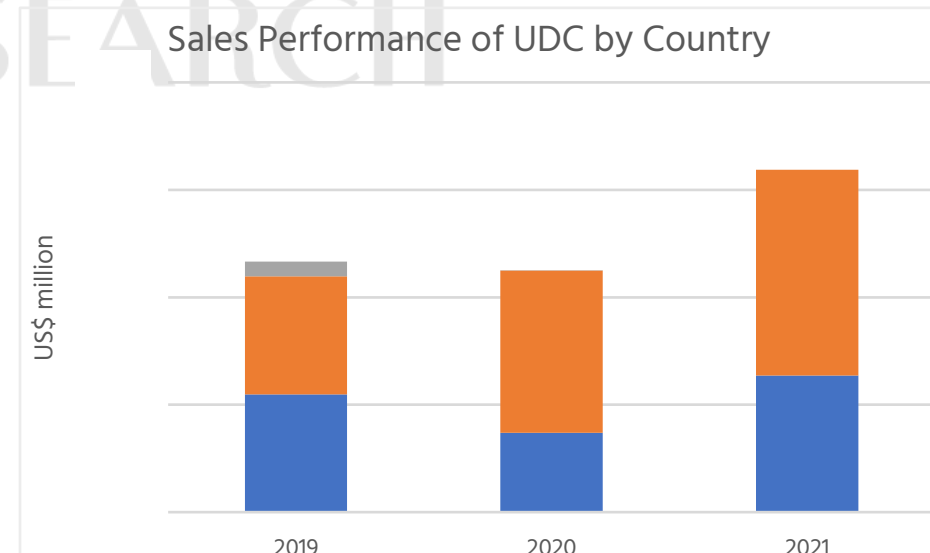
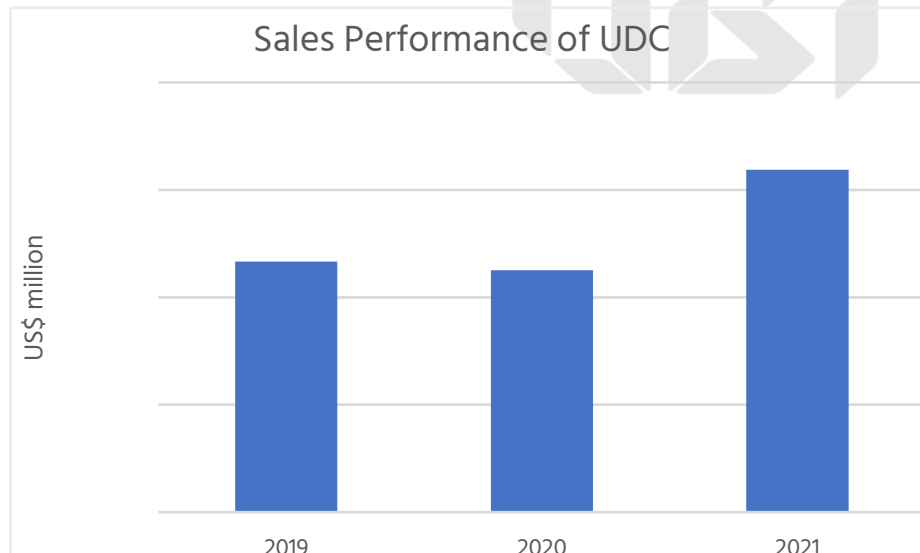
Source: UBI Research DB

# 6. Business Trends by Emitting Material Companies

## 6.1 Performance Analysis by Material Company

### ■ UDC

- In 2021, UDC's light emitting material sales were estimated to be \*\*\*million and it recorded an average annual growth rate of \*\*\* over the past three years.
- UDC mainly supplied PRD and PGD for flexible OLED and PRD, PGD, and PYGD for WRGB OLED.
- It is analyzed that the increase in UDC's sales is due to flexible OLEDs from Samsung Display, LG Display, and BOE and LG Display's increase in shipments.
- In terms of sales by country, Korea accounted for \*\*\* and China accounted for \*\*\*. By company, Samsung Display accounts for more than \*\*\* of sales.



Source: UBI Research DB

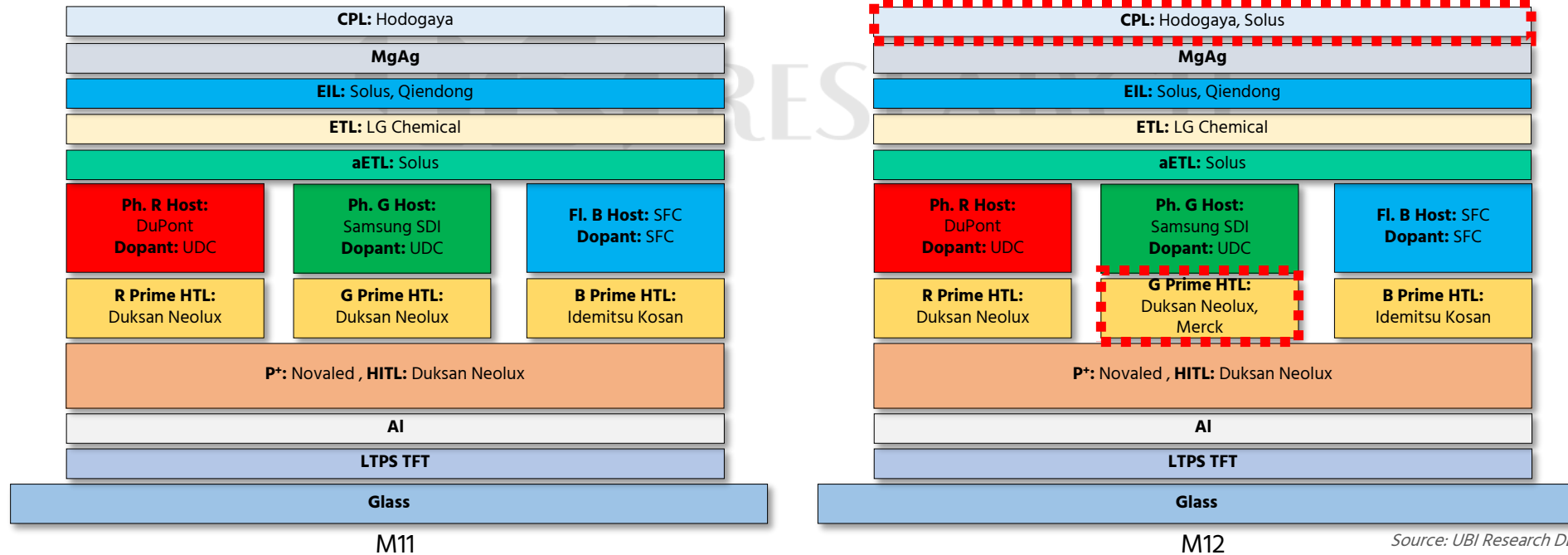
# 7. Supply Chain and Panel Structure Analysis by Panel Maker

## 7.1 Samsung Display

### ■ Samsung Display's Small and Medium-Sized OLED Light Emitting Structure and Supply Chain

- In M12, it is expected that CPL's supplier will be Hodogaya and Solus. G's supplier will be dualized with Duksan Neolux and Merck.
- Materials for Hodogaya and Deoksan Neolux are expected to be supplied to Apple, while materials for Solus and Merck are expected to be supplied to Samsung Electronics.
- The M12 is expected to be applied to Samsung Electronics' foldable devices and Apple's iPhone 14 series in 2022.

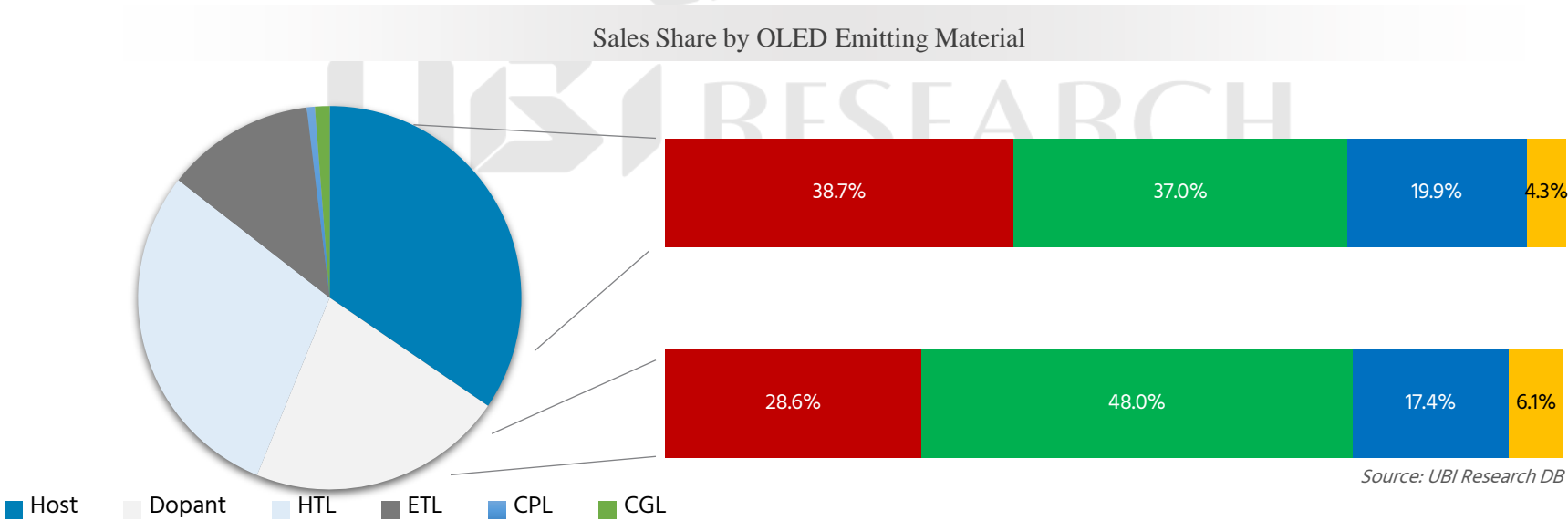
Supply Chains for Each Material Used in the M11 (left) and M12 (right) Structures



# 9. Analysis of OLED Emitting Materials Market Share in 2021

## 9.1 Total

- The OLED emitting Material Sales Share in 2021 was analyzed by dividing it into host, dopant, HTL, ETL, and others.
- HTL includes HIL, HTL, HITL, HTL prime (red, green, blue), p+ dopant. ETL includes EIL, ETL, aETL (advanced ETL) and other materials include CGL and CPL.
- Host Material Sales Share the highest at \*\*\* of total sales, followed by HTL with \*\*\*
- Host materials showed the highest share of sales in the order of red, green, blue, and yellow-green, and dopant materials in the order of green, red, blue, and yellow-green.



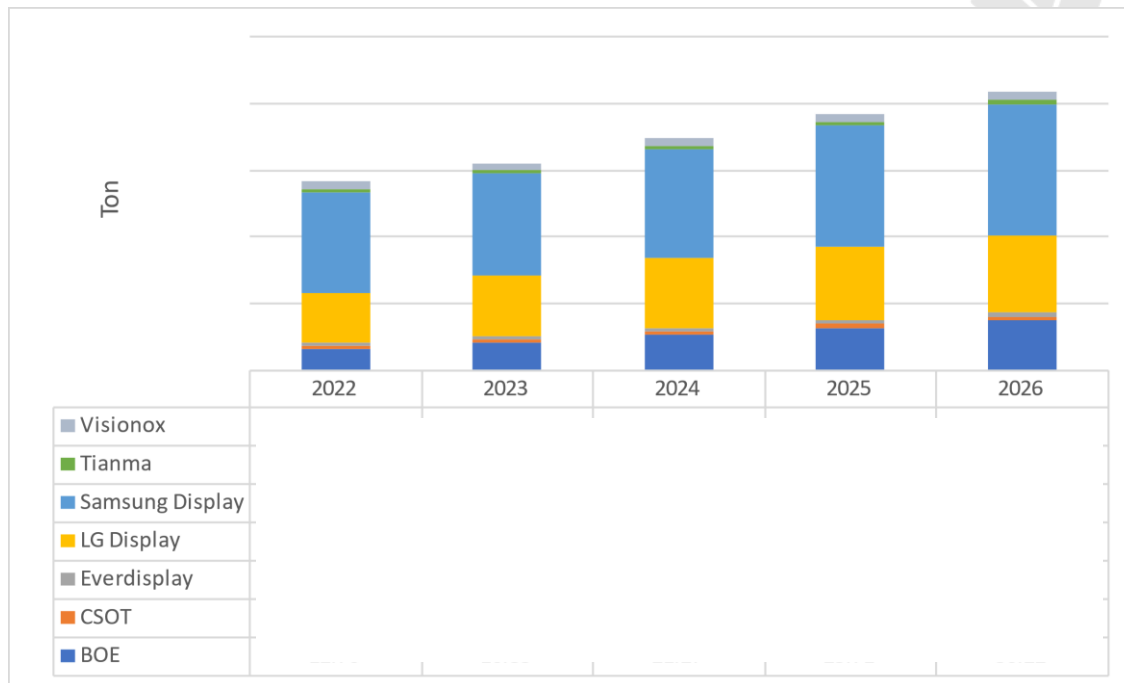
# 10. OLED Emitting Material Demand Forecast

## 10.4 By Panel Maker

### Total

- Samsung Display, LG Display, and BOE are expected to lead the emitting material market in the future. Samsung Display's Light Emitting Material Demand is expected to reach \*\*\* tons in 2022 and \*\*\* tons in 2026, with an average annual growth rate of \*\*\*.
- Material demand for LG Display and BOE is expected to grow at an average annual rate of \*\*\* and \*\*\* and are expected to reach \*\*\* tons and \*\*\* tons in 2026, respectively.

Total Demand Forecast by Company



Source: UBI Research DB

Total Demand Share by Company



Source: UBI Research DB



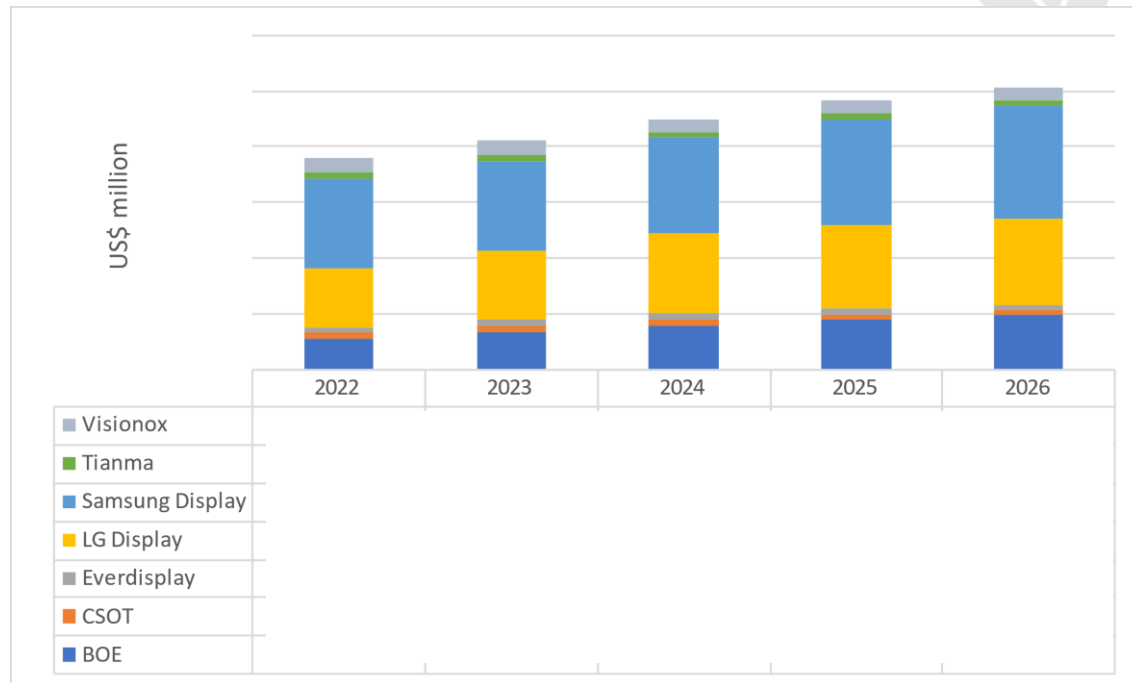
# 11. OLED Emitting Materials Market Forecast

## 11.3 By Panel Maker

### Total

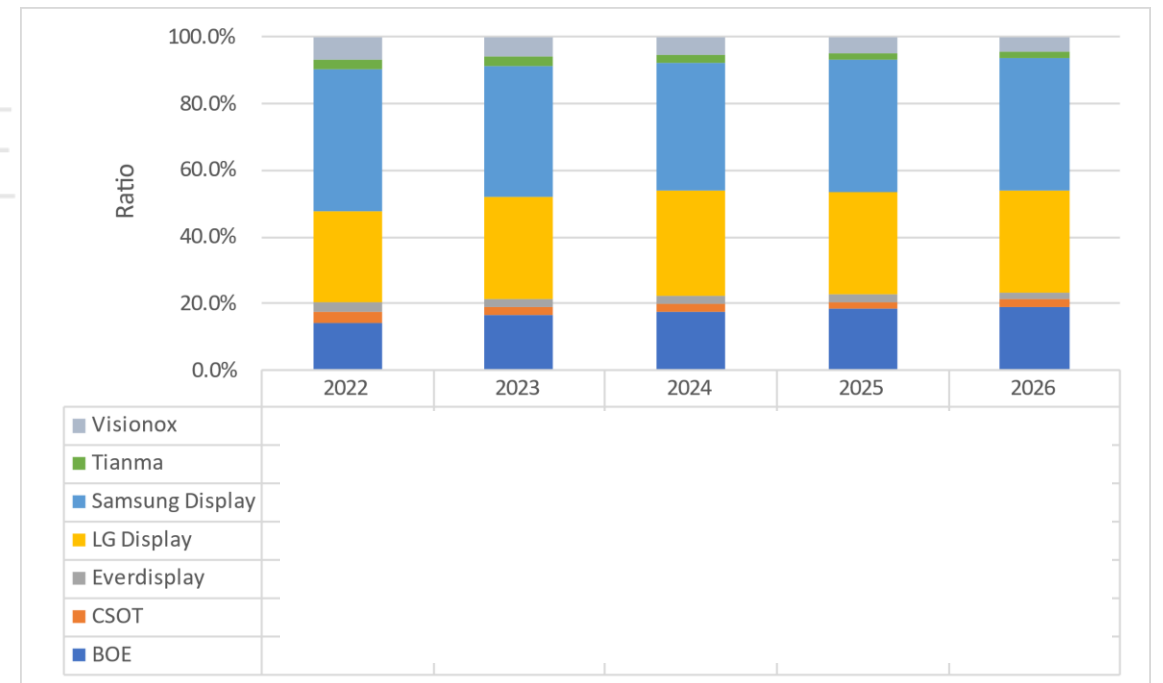
- The purchase amounts of emitting materials from Samsung Display is expected to reach \*\*\*million in 2022 and \*\*\*billion in 2026, with an average annual growth rate of \*\*\*.
- LG Display's material purchases are expected to reach \*\*\*million in 2026 at an average annual growth rate of \*\*\* due to increased use of materials for IT and TV.
- BOE's material purchases are projected to reach \*\*\*million in 2026 at a CAGR of \*\*\*.

Market Forecast by Company



Source: UBI Research DB

Market Share by Company



Source: UBI Research DB