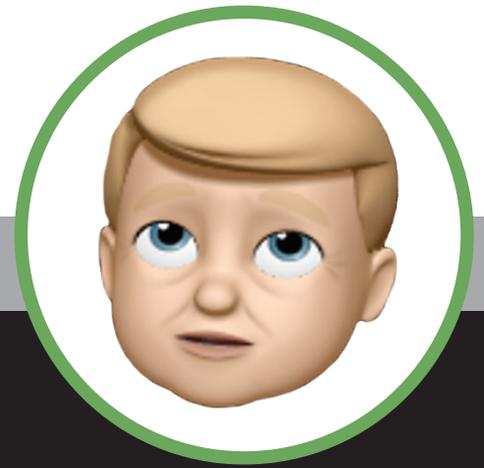




PORT PLASTICS

Semiconductor



SEMICONDUCTOR PLASTICS A LOOK INTO 2023

Plastic materials sold into the Semiconductor industry largely depend on highly specialized capital equipment, commonly referred to as process tools used to manufacture an IC chip on a wafer. The sales volume of process tools and the consumable parts associated with these process tools are dependent on several factors not limited to:

- IC chip volume
- Technology driven to meet constant miniaturization of the chip node size
- New IC fab construction requiring new equipment
- Legislation such as the Biden administrations restriction of advanced node processing equipment to China

2023 seems to be a mixed bag of signals, thus rendering it challenging to forecast; however, the overall prognosis is that any slowdown off of the record high of 2022 will be short-lived, driven by a rebound in IC chip volume and new fab construction.

IC CHIP VOLUME – In 2022, IC chip revenues grew 4.4% to a record high of \$580 billion, while 2023 forecasts a decline of 4.1%, bringing us back to 2021 levels of \$556 billion. *These are still in the historic territory, given the industry is over \$100 billion higher than in 2016!*

NEW FAB CONSTRUCTION – Despite the current economic headwinds, the global industry is spending a record \$500 billion in 84 new fabs through 2024! This investment in the future will help overcome the economic downturn in the processing equipment market as over \$160 billion in new equipment is forecasted to be needed to fill the current fabs under construction.

WAFER PROCESSING EQUIPMENT – The equipment industry revenues for 2023 were at a record high of \$108 billion, a nearly 6% increase over 2021. According to SEMI, the equipment market is forecasted to contract by 16.8% in 2023 before rebounding with a 17.4% growth in 2024. The impact of the China restrictions and economic headwinds are being offset by record new fab construction and emerging new applications for chips.

AS FOR PLASTICS – Over the last two decades, there have been troughs in the semiconductor industry sales that have impacted the plastics industry for years. The difference this year is the continued high trajectory in growth for the demand for chips prompting the expansion of capacity. Plastic materials are an early part of the supply chain to make a process tool. Thus, the prognosis is an increase in order rate – to 2022 levels – will be realized as early as the 4th quarter of 2023. Compounding the issue in plastics has been the impacted supply lines that led to the high inventories being held to support the Semicon industry. Despite slowing order rates, many critical resins still have long lead times, thus the need to carefully manage 2023's plastic supply chains.



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