SILICON WAFERS

SUPPLY-CHAIN & MARKET ANALYSIS
A 2022 CRITICAL MATERIALS REPORT™

PREPARED BY:
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RESEARCH METHODOLOGY

TECHCET employs subject matter experts having first-hand experience within the industries which they analyze. Most of TECHCET's analysts have over 25 years of direct and relevant experience in their field. Our analysts survey the commercial and technical staff of IC manufacturers and their suppliers, and conduct extensive research of literature and commerce statistics to ascertain the current and future market environment and global supply risks. Combining this data with TECHCET's proprietary, quantitative wafer forecast results in a viable long-term market forecast for a variety of process materials.

READER'S NOTE

This report represents the interpretation and analysis of information generally available to the public or released by responsible agencies or individuals. Data was obtained from sources considered reliable. However, accuracy or completeness is not guaranteed.

TECHCET
Electronics Materials Information

Analyst Biography

Dan Tracy, PhD- Sr. Director of Market Research, TECHCET

Covers silicon wafers, packaging materials, sputtering targets and deposition materials,

Has over 20 years of experience in the electronics industry covering supply-chain topics related to semiconductor packaging, thin films, semiconductor process equipment, and semiconductor materials.

Previously was the senior director of the Industry Research & Statistics group at SEMI.

Worked for Rose Associates covering electronic materials, and for National Semiconductor as a Packaging Engineer.

Holds a Ph.D. in Materials Engineering from Rensselaer Polytechnic Institute.

Dan Tracy, PhD
Sr. Director of Market Research, TECHCET

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Scope, Purpose and Methodology

2.1 Scope

- This report covers the silicon wafer market and supply-chain for those wafers used in semiconductor device fabrication. The report contains data and analysis from TECHCET's data base and Sr. Analyst experience, as well as that developed from primary and secondary market research. For more information on TECHCET Critical materials Reports™ please go to https://TECHCET.com
- Silicon wafers are a critical in semiconductor manufacturing as most semiconductor devices are fabricated on silicon, thus silicon wafers are also the largest material spend of the semiconductor manufacturers.
- One of the challenges that the silicon wafer manufacturers encounter is profitability due to the timing of investments and industry downturns. Wafer pricing declined sharply from 2007 through 2016. The resulting rise and fall of profitability has led to a considerable consolidation in the market over the years, such that five manufacturers account for most of the wafer revenue and shipments. Despite this trend, new suppliers have emerged in the China market to support the "Made in China" program backed by the government. When these suppliers gain in capability and capacity, their influence could dramatically impact the silicon supply chain in the coming years.

2.2 PURPOSE

This Critical Materials Report™ (CMR) provides focused information for supply-chain managers, process integration and R&D directors, as well as business development managers, and financial analysts. The report covers information about key suppliers, issues/trends in the material supply chain, estimates on supplier market share, and forecast for the material segments.

2.3 METHODOLOGY

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2.4 Overview of Other TECHCET CMR™ Reports

TECHCET produces electronic material supply chain reports each year as one of its functions for the Critical Materials Council. Reports to be published in 2022 can be found at www.techcet.com and are listed in the table below:

	Critical Materials Reports™
1	**CMP Pads and Slurry**
2	**Electronic Gases**
3	**Photoresist**
4	**Precursors - Dielectric Precursors**
5	**Precursors - Hi K / ALD CVD Metal Precursors**
6	**Silicon Wafers**
7	**Specialty Cleaning Chems / Wet Chems**
8	**Metal Chemicals**
9	**Targets**
10	**Equipment Components – Quartz**
11	**Equipment Components – Ceramics/SiC**
12	**Equipment Components- Si parts**
Special Reports	
13	**Impact of US Chip Expansions**
14	**Impact of European Chip Expansions**