WET CHEMICALS AND SPECIALTY CLEANING CHEMISTRY 2022

For Semiconductor Device Process Applications

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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

Terry Francis

Director of Technology & Sr. Analyst of TECHCET— covers metal chemicals and specialty wet cleans. His work experience includes CTO, Sr. Director, Technical application expert, process manager and engineering management from companies such as Matheson, Air Products, Applied Materials, Burroughs, NCR, AMI, and National Semiconductor. He has over 40 years of experience in the semiconductor industry and has managed businesses from $2M to over $100M in revenues.

In addition, he is experienced in material, chemical, and electrical engineering as well as the R&D and development programs in the Chemical/OEM/IDM sectors in the microelectronic industry. He holds a M.B.A. from National University, and a B.S. in chemistry from Oregon State University.

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2 Scope, Purpose and Methodology

TECHCET
Electronics Materials Information

2.1 Scope

- This report covers the wet chemicals market and supply-chain issues for such 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 do https://TECHCET.com
- Purpose:
  - This Critical Materials Report (CMR™) provides focused information for supply-chain managers, process integration and R&D directors, as well as business 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
- 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

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.
- Providing current information and actionable content is the intent of the information contained within this report and the quarterly updates.
- As important as the supply side of the equations is the demand requirements of the market in terms of the economic variables, leading edge technology requirements and the wafer start forecast.

2.3 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.
- The Methodology this year to include the Process volumes used per technology node and device type. This will be evident in the variations in the graphs from previous reports.
- Based on the regional IDM expansions, problems and variations in device profiles. Separates reports covering the US Expansions and the European chemical requirements have been issued.
  - A detailed survey of the chemical suppliers and IDM per chemical segments were completed and included in the overall methodology.

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:

2022	CMR Report Schedule
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**
13	**Impact of Fab Expansion on EU Wet Chemicals**
14	**2021 Impact of Fab Expansion on US Wet Chemicals**