

AGC Unveils Innovative Glass Substrates for Semiconductor Packaging

Glass Lineup's Characteristics, Sizes and Thicknesses Meet a Broad Range of Needs

Tokyo, January 17, 2017 - AGC Asahi Glass (AGC), a world-leading manufacturer of glass, chemicals and high-tech materials, today announced it has developed a diverse line of glass substrates specifically designed for semiconductor packaging applications and semiconductor manufacturing process support. The company is demonstrating the new substrates at [NEPCON JAPAN 2017](#), opening today at Tokyo Big Sight and running through Friday, January 20. AGC's exhibit can be found at booth W3-6 in the West Hall (1F).

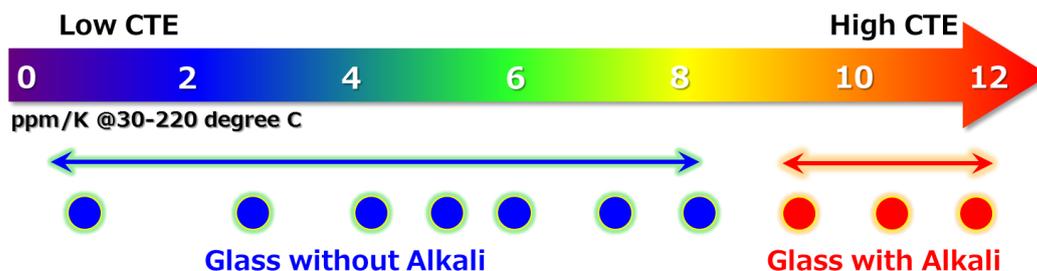
Key advanced packaging technologies are poised to benefit from the AGC products. Wafer-level packaging (WLP) technology – in which the IC is packaged while still part of the wafer – has made remarkable progress with next-generation semiconductor and MEMS devices. This has resulted in a growing need for glass wafers – in particular, those that can match silicon's coefficient of thermal expansion (CTE), thus eliminating the warping that occurs when attempting to directly laminate silicon and glass wafers whose CTE values differ.

Another target technology for the new substrates is fan-out wafer-level packaging (FOWLP), which enhances standard WLP technology to provide a smaller package footprint with improved thermal and electrical performance. It involves joining materials with different CTEs, including silicon wafers, rewiring layers and resin. As combinations and patterns vary from device to device, glass substrates that can provide the optimal CTE for each element are needed. Also, since the alkaline component of ordinary glass can cause contamination in production processes and devices, alkali-free glass is desirable in certain applications.

Designed to satisfy a wide range of customer needs, the new AGC glass substrates can be provided in rectangular and square shapes, as well as traditional round wafers, with thicknesses ranging from 0.2 mm to 2 mm. The lineup includes:

- Glass without alkali
 - ◆ Glass products that maintain the exact same CTE as silicon through temperatures ranging from ambient air temperature to roughly 250°C
 - ◆ Glass products covering a wide range of CTE values from 3 ppm/°C to 8 ppm/°C
- Glass with alkali
 - ◆ Glass products covering higher ranges of up to CTE 12 ppm/°C

Glass Lineup: Wide Range of CTE



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News Release

Under its management policy, **AGC plus**, the AGC Group manufactures products that provide “new value and functions” for its customers. As a pioneer of display materials, including glass substrates and cover glass, the Group will promote technological innovations to offer new added-value products that satisfy its customers.

About the AGC Group

AGC Asahi Glass (also called AGC, Registered Company name: Asahi Glass Co., Ltd., Headquarters: Tokyo, President & CEO: Takuya Shimamura) is the parent company of the AGC Group, a world-leading glass solution provider and supplier of flat, automotive and display glass, chemicals, ceramics and other high-tech materials and components. Based on more than a century of technical innovation, the AGC Group has developed a wide range of cutting-edge products. The AGC Group employs some 50,000 people worldwide and generates annual sales of approximately 1.3 trillion Japanese yen through business in about 30 countries. For more information, please visit www.agc-group.com.

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