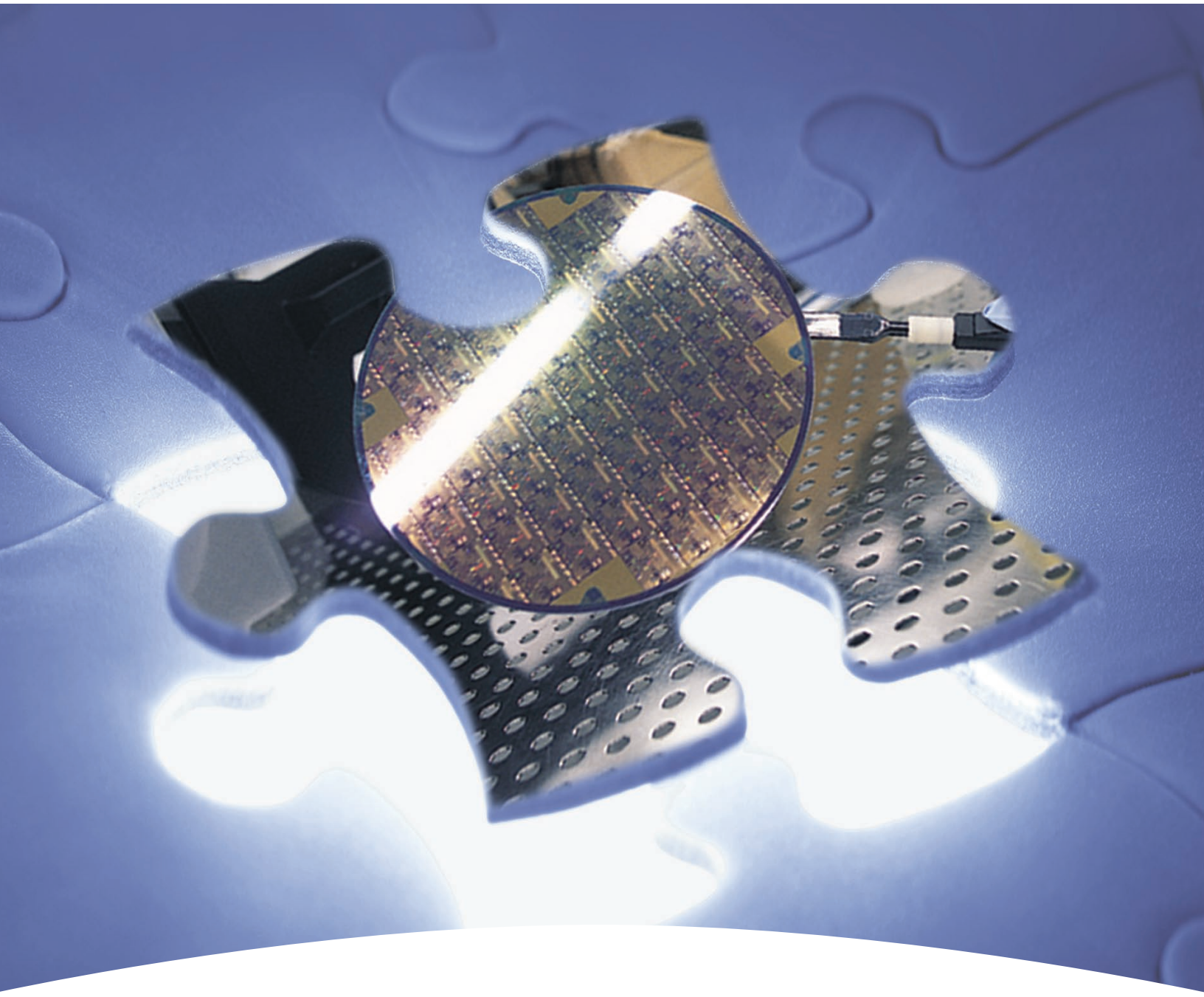
Electronic Polymers

Honeywell



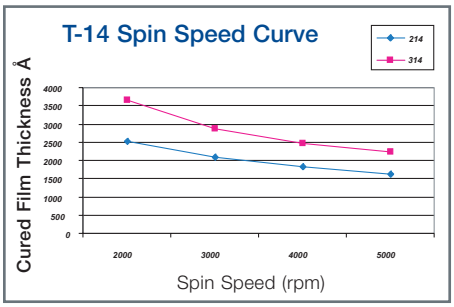
Honeywell ACCUGLASS® T-14 Spin-on Glass

Honeywell ACCUGLASS® T-14 Spin-on Glass

ILD AND IMD PLANARIZATION AND GAP FILL

BENEFITS

- Industry proven performance and broad acceptance
- T-14 fills gaps as small as 0.1µm
- High thermal stability. Compatible with hot aluminum and tungsten plug processing. Permeability allows for hydrogen annealing of gate oxides
- Thickness variation within a wafer of less than 1%. Wafer to wafer variation of less than 2%
- Lower dielectric constant compared to silicates and phosphorus silicates
- Crack resistance up to 6000Å
- Good adhesion to top and bottom dielectric layers



OVERVIEW

The ACCUGLASS T-14 (κ = 3.8) Spin-on Glass (SOG) Series is a family of methyl-siloxane polymers used for interlevel and overcoat passivation in the manufacture of integrated circuits.

The ACCUGLASS T-14 series is specially formulated to fill narrow (down to 0.1µm) gaps without voids while planarizing multi-level metal devices.

ACCUGLASS T-14 contains 10wt% CH_3 (methyl) groups bonded to Si atoms in the Si-O backbone. The specific formulation results in a stable dielectric constant, high crack resistance, excellent gap fill and planarization properties of the cured film.

Thin films of ACCUGLASS T-14 are applied using a commercial coater and cured in a vertical or horizontal furnace to thicknesses up to 3600Å (single coat) and 6000Å (double coat).

FEATURES

Thickness

Product	Thickness Range
214	1,600Å – 2,500Å
314	2,200Å – 3,600Å

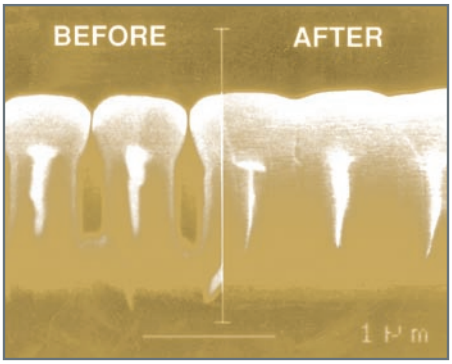
Film Properties Post Cure

Dielectric Constant @ 1 MHz: 3.8
Tensile Stress: 120 MPa
Refractive Index @ 633 nm: 1.38
Coeff. of Thermal Expansion: $5X10^{-6}K^{-1}$

APPLICATIONS

- ILD and PMD Planarization
- Overcoat Passivation
- Gapfill

ACCUGLASS T-14 is suitable for gap fill and planarization of ILD and PMD structures used in multilevel metal IC devices. Typically, partial etchback (PEB) is used for ILD and total etchback (TEB) is used for PMD.



T-14 fills reentrant gaps as small as 0.1µm created by non-conformal CVD SiO_2 deposition.

Material Properties

214 Shelf Life @ 4˚C: 6 months
314 Shelf Life @ 4˚C: 6 months

Shelf Life Equivalencies @ Room Temperature: 20˚C
214– 1 Day at RT = 5 days in 4˚C Storage
314– 1 Day at RT = 5 days in 4˚C Storage

Bottle sizes available:
125ml, 250ml, 500ml, 1L, 2L, 4L

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