

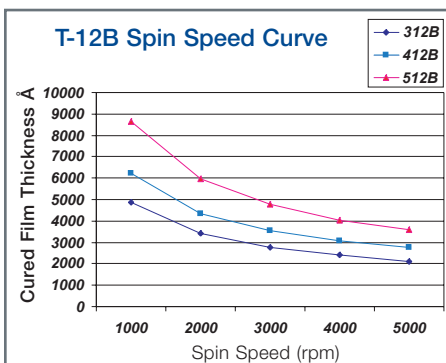
Honeywell
ACCUGLASS® T-12B
Spin-on Glass

Honeywell ACCUGLASS® T-12B Spin-on Glass

ILD AND IMD PLANARIZATION AND GAP FILL

BENEFITS

- Industry proven performance and broad acceptance
- T-12B 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% over 8-inch wafers
- Lower dielectric constant compared to silicates, phosphorus silicates and most siloxanes
- Crack resistance up to 2.0µm
- Silanol free films post-cure
- Good adhesion to top and bottom dielectric layers



OVERVIEW

The ACCUGLASS T-12B ($\kappa = 3.2$) Spin-on Glass (SOG) Series is a family of methyl-siloxane polymers used for interconnect and overcoat passivation in the manufacture of integrated circuits.

The ACCUGLASS T-12B series is specially formulated to fill narrow (down to 0.1µm), high aspect ratio (up to 10) gaps without voids while planarizing multi-level metal devices that require a lower κ than SiO_2 .

ACCUGLASS T-12B contains 15wt% 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. In addition, post-cure films exhibit low shrinkage and are silanol (SiOH) free.

Thin films of ACCUGLASS T-12B are applied using a commercial coater and cured in a vertical or horizontal furnace to thicknesses up to 9000Å (single coat) and 2.0µm (double coat).

FEATURES

Thickness

Product	Thickness Range
312B	2,100Å – 4,900Å
412B	2,800Å – 6,200Å
512B	3,600Å – 9,000Å

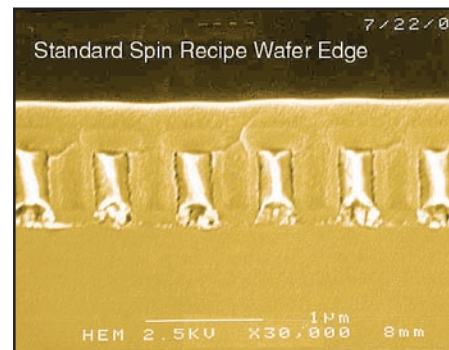
Film Properties Post Cure

Dielectric Constant @ 1 MHz: 3.2
Tensile Stress: 21 MPa
Refractive Index @ 633 nm: 1.39
Coeff. of Thermal Expansion: $5 \times 10^{-6} \text{K}^{-1}$

APPLICATIONS

- ILD and Planarization
- Overcoat Passivation
- Gapfill

ACCUGLASS T-12B is suitable for gap fill and planarization of ILD layers used in multilevel metal IC devices. Typically, partial etchback (PEB) is used for ILD processing. ACCUGLASS T-12B can also be used to improve planarization of the final passivation layer.



**0.35µm gaps filled using
ACCUGLASS 412B.**

Material Properties

312B Shelf Life @ 4°C: 6 months
412B Shelf Life @ 4°C: 6 months
512B Shelf Life @ 4°C: 6 months

Shelf Life Equivalencies @ Room Temperature: 20°C

312B– 1 Day at RT = 2 days in 4°C Storage
412B– 1 Day at RT = 5 days in 4°C Storage
512B– 1 Day at RT = 5 days in 4°C Storage

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



RESPONSIBLE CARE®
OUR COMMITMENT TO SUSTAINABILITY

Honeywell Electronic Materials

USA: 1-509-252-2102

China: 86-21-28942481

Germany: 49-5137-999-9199

Japan: 81-3-6730-7092

Korea: 82-2-3483-5076

Singapore: 65-6580-3593

Taiwan: 886-3-6580300 ext.312

www.honeywell.com/sm/em

Although all statements and information contained herein are believed to be accurate and reliable, they are presented without guarantee or warranty of any kind, express or implied. Information provided herein does not relieve the user from the responsibility of carrying out its own tests and experiments, and the user assumes all risks and liability for use of the information and results obtained. Statements or suggestions concerning the use of materials and processes are made without representation or warranty that any such use is free of patent infringement and are not recommendations to infringe any patent. The user should not assume that all toxicity data and safety measures are indicated herein or that other measures may not be required. PB0021011Rev14
©2011 Honeywell International Inc.

Honeywell