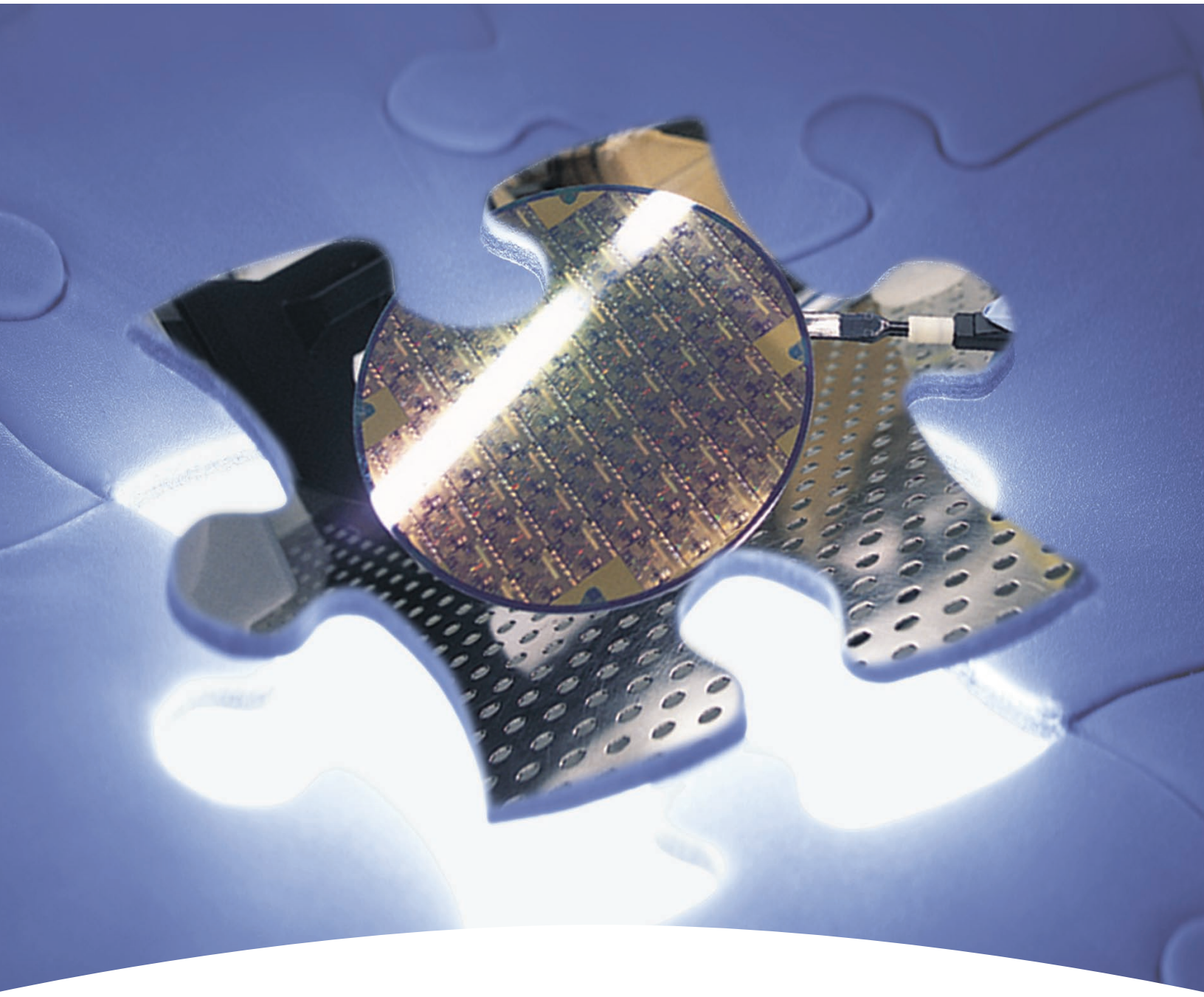
Electronic Polymers

Honeywell



Honeywell ACCUGLASS® P-TTY Spin-on Glass

Honeywell ACCUGLASS® P-TTY Spin-on Glass

PMD-BPSG PLANARIZATION

BENEFITS

- Industry proven performance and broad acceptance in subtractive aluminum processing
- Phosphorus stability up to 900˚C
- Thickness variation within a wafer of less than 2%
- P-112Ls has similar etch properties as BPSG

OVERVIEW

The ACCUGLASS P-TTY Spin-on Glass (SOG) Series (κ = 4.1-4.3) is a family of phosphosilicate polymers used for metal and poly planarization, overcoat passivation and non-etchback interlayer dielectric in the manufacture of integrated circuits. The ACCUGLASS P-TTY series also provides Na+ gettering ability similar to P-doped CVD oxides.

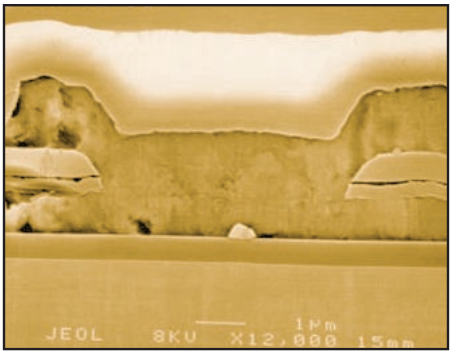
The ACCUGLASS P-TTY series contains 2wt% (P-112A), 2.7wt% (P-112LS) and 4wt% (P-114A) phosphorous bonded to O atoms in the Si-O backbone. The specific formulation results in a stable dielectric constant, <2% within wafer uniformity and can be densified at temperatures up to 700-900°C with no significant loss of phosphorous.

Thin films of ACCUGLASS P-TTY are applied using a commercial coater and cured in a vertical or horizontal furnace to thicknesses up to 1000Å (single coat) and 2000Å (double coat). Typically, two coats at ~1,000Å each are applied with hot plate bakes in between coats to achieve optimum planarization.

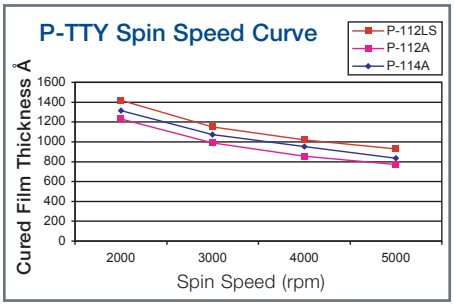
APPLICATIONS

- PMD-BPSG Planarization
- Overcoat Passivation
- ILD Planarization
- Available in both Etchback and Non-Etchback

Accuglass P-TTY is suitable for metal and poly planarization, partial and non-etchback applications in a CVD/SOG/CVD sandwich structure. ACCUGLASS P-TTY can also be used for overcoat passivation.



CVD/P-11 2LS/CVD sandwich structure. (SEM courtesy of ASMC)



FEATURES

Thickness

Product	Thickness Range
P-112A	700Å – 1,230Å
P-112LS	930Å – 1,420Å
P-114A	835Å – 1,315Å

Film Properties Post Cure

P-112LS Dielectric Constant @ 1 MHz: 4.2
P-112A Dielectric Constant @ 1 MHz: 4.1
P-114A Dielectric Constant @ 1 MHz: 4.3
Tensile Stress: 100 MPa
Refractive Index @ 633 nm: 1.44
Coeff. of Thermal Expansion: $1X10^{-6}K^{-1}$

Material Properties

P-112A Shelf Life @ 4˚C: 6 months
P-112LS Shelf Life @ 4˚C: 6 months
P-114A Shelf Life @ 4˚C: 6 months

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

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