Desert Silicon
LIQUID SOURCE SOLUTIONS

Spin-on Glass Zn-640

Elements of Interest	Key Element atoms/cm^3	Key Element % in Film
Si, Zn, O, Cl	Zn, 4 x 10^{21}	Zn
Viscosity	**Thickness**	**Shelf Life**
0.90 +/- 0.15 cps	Coats 1800 Å (180 nm) at 4000 rpm	20°C 3 months 4°C 9 months

Benefits

- Diffusion barrier to avoid out gassing of doping material from substrate
- For final target concentration ranges from 5 x 10^{17} to 5 x 10^{19} of Zinc
- Uniform Coatings
- High Purity materials
- Available with impurity specification of less than 1 ppm or less than 50 ppb
- Lower melting point than silica alone

Typical Application

The concentration of the source for driving-in is typically high; in the range of 4x10^{21} this leaves a high concentration of dopant right at the surface. During drive in the dopant diffuses into the substrate. It is also at risk to diffuse out of the substrate since it is so near the surface. Keeping a capping layer with dopant can prohibit the loss of the doping species. The basic capping layer can be a silicate layer such as NDG-2000. Zn-640 adds a level of dopant consistent with the final desired concentration. Zn-640 has a film concentration of 4x10^{21} Zinc atoms per cubic centimeter. This addition of Zinc eliminates any concentration gradient that may exist and prohibits the loss of zinc through the surface layer.

Packaging

- 240ml
- 500ml
- 1 l
- 2.5 l
- 4 l

Alternative Products

NDG-2000
Other target concentration levels available

Alternate Elements

- As
- Sb
- Bi
- Other elements available for compound semiconductor use

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