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Process Outline NDG-500; NDG-800; NDG-1000; NDG-2000; NDG-3000 NDG-5000 Spin-On Glass series

Spin-on glass (SOG) is sensitive to ambient humidity.

The following recommendations are suggested for many typical applications.

1. Read Material Safety Data Sheet before using spin-on glass.
2. Use SOG as soon as possible.
3. Keep SOG bottle tightly capped when not in use.
4. Store SOG in appropriate chemical refrigerator when not in use.
5. For best coating consistency, let SOG warm to room temperature before using.
6. Use freshly cleaned wafers i.e., Piranha, DI water rinse followed by dilute HF or use RCA clean.
7. In highly humid conditions and for certain applications, dehydration prebake immediately before spinning (140 C, 60 Minutes Convection Oven).
8. Use clean dry dropper to dispense SOG. Small, disposable, polyethylene pipettes (Part number DS452002) work well for many R & D applications.
9. Allow liquid to cover 80 % or more of the wafer before spinning.
10. Spinning at 3000 RPM for 10-15 seconds is sufficient for uniform film coverage.
11. Immediately after spinning, bake wafers at 150-200 C for 60 minutes (convection oven) or 10 minutes on hot plate or track bake (preferred). For convection oven, coat no more than five wafers before placing in oven. SOG is very moisture sensitive and the film will cloud in a short time if high humidity conditions if not immediately baked. In a very well controlled low humidity environment (less than 30 %), this hazing is not a problem. For tube furnace temperature treatments, load wafers onto quartz boat.
12. For most applications Nitrogen or clean dry air ambient works very well.
13. For processes at 1000 C a slow push/pull (1.5"/min.) or temperature ramping is recommended to minimize Substrate damage.
14. Typical anneal time for many Si applications is 60-90 minutes.