

ZINC PHOSPHORUS DOPANT ZPDC2-2000

Description

ZPDC2-2000 is designed for zinc doping of III-V semiconductors. Application of ZPDC2-2000 enhances productivity of zinc doping through process simplification.

Properties

◆ Solids content (%)	14-16
◆ Principal solvent	n-butanol
◆ Appearance	clear liquid
◆ Coating characteristic	very uniform,
striation free	
◆ Film thickness after 100°C oven bake for 5 minutes.	
Coating spin speed, 40 s spin (rpm):	(nm)
800	3800-4200
3000	1900-2100
◆ Guaranteed shelf life at 25°C storage (years)	6 months

Process Application:

1. Application of ZPDC2-2000 on top of silicon nitride layer with open diffusion windows by spin coating of a substrate at a selected spin speed for 40 s.
2. Hotplate bake at 200°C for 180 s.
3. Oxygen plasma treatment of ZPDC2-2000 film for a duration of time sufficient to remove 4 μm thick layer of photoresist.
4. Deposition of 100 nm thick capping layer of silicon nitride.
5. Drive-in process with application of Rapid Thermal Annealing or furnace heating.
6. Removal of ZPDC2-2000 and silicon nitride films in HF/water 1:1.
7. Deposition of silicon nitride, followed by lithography and etching steps.