

NEGATIVE RESIST NR7-3000P

Description

- Negative Resist NR7-3000P is a negative tone photoresist designed for 365 nm wavelength exposure, using tools such as wafer steppers, scanning projection aligners, proximity printers and contact printers.
- After resist development NR7-3000P exhibits a straight resist sidewall profile.
- These are advantages of NR7-3000P over other resists:
 - superior resolution capability
 - fast develop time
 - superior photospeed
 - superior temperature resistance of up to 180°C
 - superior selectivity in RIE process
 - easy resist removal in Resist Remover RR4
 - shelf life exceeding 3 years at room temperature storage.
- The formulation and processing of NR7-3000P were designed with regard to occupational and environmental safety. The principal solvent in NR7-3000P is cyclohexanone and development of NR7-3000P is accomplished in a basic water solution.

Properties

◆ Solids content (%)	31-35
◆ Principal solvent	cyclohexanone
◆ Appearance	light yellow liquid
◆ Coating characteristic	very uniform, striation free
◆ Film thickness after 150°C hotplate bake for 60 s <u>Coating spin speed, 40 s spin (rpm):</u>	(nm)
800	5700-6300
3000	2850-3150
4000	2460-2720
5000	2140-2326
◆ Sensitivity at 365 nm exposure wavelength (mJ/cm ² for 1 μm thick film)	21
◆ Guaranteed shelf life at 25°C storage (years)	3

Processing

1. Application of resist by spin coating at selected spin speed for 40 s.
2. Application of Edge Bead Remover EBR2 to bottom and edge of the coated wafer for 10 s, until 5 s before completion of spin cycle.
3. 150°C hotplate bake for 60 s. (softbake)
4. Resist exposure with a tool emitting 365 nm wavelength.
5. 100°C hotplate bake for 60 s. (post-exposure bake)
6. Resist development in Resist Developer RD6 by spray or immersion. Development time for 3 µm thick film, for example, is 30 s.
7. Resist rinse in deionized water until water resistivity reaches prescribed limit.
8. Drying of resist.
9. Removal of resist in Resist Remover RR4 or in acetone.

The above procedure refers to substrates, which are good conductors of heat such as silicon, GaAs etc. Bake times need to be increased 3.5 times for substrates, which are poor conductors of heat such as glass.

Handling Precautions

Negative Resist NR7-3000P is a flammable liquid. Handle it with care. Keep it away from heat, sparks and flames. Use adequate ventilation. It may be harmful if swallowed or touched. Avoid contact with liquid, vapor or spray mist. Wear chemical goggles, rubber gloves and protective coating.