

Negative Resist NR71-1500P

Description

- Negative Resist NR71-1500P 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.
- These are the advantages of NR71-1500P over other resists:
 - superior resolution capability
 - fast photospeed
 - fast develop time
 - superior temperature resistance of up to 180°C
 - superior selectivity in RIE process
 - elimination of a need for application of adhesion promoters such as HMDS
 - shelf life exceeding 3 years at room temperature storage.
- The formulation and processing of NR71-1500P were designed with regard to occupational and environmental safety. The principal solvent in NR71-1500P is gamma butyrolactone and development of NR71-1500P is accomplished in a basic water solution.

Properties

◆ Solids content (%)	24-28
◆ Principal solvent	gamma butyrolactone
◆ Appearance	light yellow liquid
◆ Coating characteristic	very uniform, striation free
◆ Film thickness after 150°C hotplate bake for 60 s. (nm)	
<u>Coating spin speed, 40 s spin (rpm):</u>	
800	2850-3150
1000	2565-2835
2000	1805-1995
3000	1425-1575
4000	1235-1365
5000	1140-1260
◆ 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. 150°C hotplate bake for 60 s*; 165°C hotplate bake for 240 s** (softbake)
3. Resist exposure in a tool emitting 365 nm wavelength.
4. 100°C hotplate bake for 60 s*; 110°C hotplate bake for 240 s** (post-exposure bake)
5. Resist development in Resist Developer RD6 by spray or immersion.
Development time for 1.5 μm thick film, for example, is 12 s.
To increase development time to 60 s combine RD6/water 3:1.
6. Resist rinse in deionized water until water resistivity reaches prescribed limit.
7. Drying of resist.
8. Removal of resist in Resist Remover RR41.

*For good conductors of heat such as Si, GaAs, InP, etc.

**For 1 mm thick glass substrate.

Handling Precautions

Negative Resist NR71-1500P is a combustible 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.