

ABSTRACT

MATERIAL FOR FORMING RESIST PROTECTIVE FILM FOR USE IN LIQUID IMMERSION LITHOGRAPHY PROCESS AND METHOD FOR FORMING RESIST PATTERN USING THE PROTECTIVE FILM

The liquid immersion lithography process is configured so that the resist pattern resolution is improved by exposing a resist film to the lithographic exposure light under the conditions in which the predetermined thickness of the liquid for liquid immersion lithography, of which the refractive index is higher than that of air and smaller than that of the resist film is intervened at least on the resist film in a path of the lithography exposure light reaching the resist film, a protective film is formed on the surface of the resist film to be used. Therefore, when various immersion liquid, water being the representative example is used in the liquid immersion lithography process can be formed, the deterioration of the resist film and the immersion liquid to be used are simultaneously prevented, and the number of the process steps are not increased, and then the resist pattern having higher resolving ability.