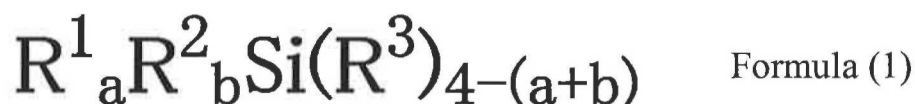


## ABSTRACT

SILICON-CONTAINING RESIST UNDERLAYER FILM-FORMING COMPOSITION  
HAVING HALOGENATED SULFONYLALKYL GROUP

There are provided a resist underlayer film that allows an excellent resist pattern  
 5 shape to be formed when an upper resist layer is exposed to light and developed using an  
 alkaline developing solution or an organic solvent; and a composition for forming the  
 resist underlayer film. A resist underlayer film-forming composition for lithography, the  
 composition comprising, as a silane, a hydrolyzable silane, a hydrolysis product thereof, a  
 hydrolysis-condensation product thereof, or a combination of these, in which the  
 10 hydrolyzable silane comprises a hydrolyzable silane of Formula (1):



[where  $R^1$  is an organic group of Formula (2):



(where  $R^4$  is an optionally substituted  $C_{1-10}$  alkylene group;  $R^5$  is a sulfonyl group or a  
 15 sulfonamide group; and  $R^6$  is a halogen-containing organic group)]. In Formula (2),  $R^6$   
 may be a fluorine-containing organic group such as a trifluoromethyl group. A resist  
 underlayer film obtained by applying the resist underlayer film-forming composition onto  
 a semiconductor substrate, followed by baking. The underlayer film-forming  
 composition may further comprise an acid as a hydrolysis catalyst, or water.