

ABSTRACT

PHOSPHORUS-CONTAINING SILAZANE COMPOSITION,
 PHOSPHORUS-CONTAINING SILICEOUS FILM,
 PHOSPHORUS-CONTAINING SILICEOUS FILLER, METHOD FOR
 PRODUCING PHOSPHORUS-CONTAINING SILICEOUS FILM, AND
 5 SEMICONDUCTOR DEVICE

An objective of the present invention is to provide a
 phosphorous-containing siliceous material having a specific
 10 permittivity of not more than 3.5. The phosphorus-containing
 silazane composition according to the present invention is
 characterized by comprising a polyalkylsilazane and at least one
 phosphorus compound in an organic solvent. A
 phosphorus-containing siliceous film may be formed by coating
 15 the composition onto a substrate to form a film which is then
 prebaked at a temperature of 50 to 300°C and is then baked in
 an inert atmosphere at a temperature of 300 to 700°C. The
 phosphorus compound according to the present invention is
 preferably a pentavalent phosphoric ester or phosphazene
 20 compound.



FIG. 3