

Silicon carbide is the new material for the mechanical seals following up the above mentioned ceramic. It has light gravity, higher strength, Lower coefficient of friction, anti-radialization, self-lubricate, easy to be matched with other materials, stable chemical Characteristics, heat resistance and good heat spread etc. Silicon carbide is a kind of brittleness material, weak in anti-mechanical strike.

There are 4 types of silicon carbide widely used in mechanical seals, according to the different production procedures, and all of them have different performances.

1)Reaction bond SiC: It is a impermeable sintered material and made up of SiC and Si, there are 10-20% dissociative Si in reaction bond SiC, dissociative Si is the useless matter in reaction bond SiC, it is weak of anti strong alkalescence and oxidation media.The advantage of reaction bond is that the final finished products has the lower contractility, reaction bond SiC good on anti-heat strike, so it can be used to large scaled production and make the costs decreased.

2)Sintered SiC: It is made by pressed the mixed super fine SiC powder and proper dosage additive and bond., then Sintered them at with the high temperature from 2000 to 2200 degree centigrade. It can be applied to the mechanical Seal production which requires small quantities and various specificationshot pressed SiC It is made by add proper additive into SiC powder (which granularity less than 1 μ m, then remove them in to the carbon mold and heated at the hot pressed oven under the temperature 2000 to 2100 degree centigrade while plus 30-50Mpa pressure, hot pressed SiC has the best chemical stability among all the SiC materials. It should be used in the anti corrosive friction pairs.

3) Gas-Permeation SiC: It has the advantages both of carbon and SiC, so it is a quite prospect material carbon-based Composite material.