vibrates relative to the disc at high frequencies and, because of the pressure applied by the piston, causes a "squeal". This results from the stress of steel-on-steel contact between the metal backplate and the piston This noise is quite objectionable

Also during long braking application and under high braking pressures, the friction material can reach temperatures from 600 degree to 800 degree C. The metal backplate conducts heat well and transmits this temperature to the metal caliper piston which causes the brake fluid to boil and turn to vapor This phenomenon is very serious, because braking pressure declines dramatically

Automobile disc brakes are quite exposed and are frequently wetted during rainy weather and when traversing puddles of water The metal backplates, although they are usually protected with different coatings, often become oxidized or corroded This oxidation often occurs between the friction material and the backplate and can, in some cases, cause separation or delamination of the lining

Automotive friction materials are usually composed of a high percentage (20-60%) of asbestos, which has good heat resistance and also good mechanical strength. However, environmentalists and others are requiring a reduction or elimination in the use of asbestos in wear parts such as friction material There has been a great effort to develop friction materials using substitutes for asbestos Some substitutes used are metallic fibers, carbon fibers, iron powder, cast iron powder But these products are very heat conductive and do not have the insulating ability of asbestos; this accentuates the phenomenon of oil boiling in the brake cylinder

In order to eliminate the disadvantage of metallic backplates, organic backplates have been developed which comprise layers of cloth bonded by a resin, as shown in French Pat No. 1,347,812 These laminated backplates are then bonded to the friction material and have the advantage of decreasing the weight of the pads since the specific gravity of the organic material forming the backplate is only 2 These brake pads are somewhat difficult and expensive to manufacture, since the backplate must first be completely formed and then be trimmed to size before bonding to the friction material

According to the invention, a pulverulent organic mix is compacted to create a green backplate preform, while a pulverulent organic mix is compacted to create a green friction material preform These mixes may be identical The organic material backplate preform and the friction material preform are arranged in a mold and are simultaneously hot pressed at temperatures and pressures suitable to flow the mixes into the mold and to bond the backplate to the friction material

The pad obtained from this process decreases the phenomenon of oil boiling in the brake system by replacing the heat-conductive metallic backplate with an organic heat-resistant backplate. These pads are also easier and cheaper to make than those using the laminated backplates

It is to be noted that the composition of the backplate is not necessarily identical with the composition of the friction material, although they use a common resin binder The simultaneous molding of the backplate and the friction material enables a complete binding between both materials, indeed, the shearing strength of a pad with organic material backplate according to the invention is identical, for the same type of pad, to that of one with metallic backplate

Other characteristics and advantages of the invention will be better understood by reading the following description of a preferred embodiment, with reference to the enclosed drawings in which

FIG 1 is a schematic sectional view of a device for compacting a backplate material sheet,

FIG 2 is a schematic sectional view of an alternate device for pressing a backing plate preform,