Claims

1. A method for preparing a high-compactness bonded rare earth permanent magnet, wherein,

   raw materials of the high-compactness bonded rare earth permanent magnet calculated by a mass percentage comprise: thermosetting resin 0.1~1.6 wt%, a lubricant 0.05~0.8 wt%, a coupling agent 0~1.0 wt%, and the balance being rare earth permanent magnetic powder; and

   the method comprises:

   mixing the rare earth permanent magnetic powder after crystallization treatment with a solution in which the thermosetting resin and the coupling agent are dissolved to obtain a mixture, drying the mixture after sealing and stirring, and obtaining a magnetic powder complex after crushing to 80~120 mesh by a wheel mixer and sieving;

   mixing the magnetic powder complex with the lubricant to obtain clinker; and

   filling the clinker into a mold at a temperature of 40~120 °C for preheating, compressing and molding, demolding to obtain a green body, wherein the green body has a density of 6.2~7.1 g/cm^3, heating the green body till an epoxy softening point thereof is reached, vacuumizing till a pressure of environment is less than 0.2 atmosphere, and keeping temperature of environment at 120~200 °C for 2~3 h to obtain a rough blank, and conducting precision machining on the rough blank.

2. The method for preparing the high-compactness bonded rare earth permanent magnet according to claim 1, wherein, the rare earth permanent magnetic powder comprises at least one of rapidly quenched praseodymium and/or neodymium iron boron magnetic powder and modified powder thereof containing dysprosium/terbium/cobalt/aluminum, rapidly quenched lanthanum iron boron powder, rapidly quenched cerium iron boron powder, HDDR permanent magnetic powder, samarium cobalt permanent magnetic powder, permanent magnet ferrite powder, samarium iron nitrogen permanent magnetic powder and neodymium-containing Fe_3B-based permanent magnet alloy powder.

3. The method for preparing the high-compactness bonded rare earth permanent magnet according to claim 1, wherein, the lubricant comprises graphite and/or stearic acid and stearate; and the stearate comprises zinc stearate and/or calcium stearate.

4. The method for preparing the high-compactness bonded rare earth permanent

magnet according to claim 1, wherein, the crystallization treatment takes place at 670~730 °C for 10~20 min in an argon atmosphere.

5. The method for preparing the high-compactness bonded rare earth permanent magnet according to claim 1, characterized in that, sealing and stirring takes 40~60 min while preparing the magnetic powder complex.

6. The method for preparing the high-compactness bonded rare earth permanent magnet according to claim 1, characterized in that, compressing and molding takes place at an unit compressing force of 12-50 T/cm^2 for 0.3~10 s.

7. The method for preparing the high-compactness bonded rare earth permanent magnet according to claim 1, characterized in that, the method further comprises a step of painting a protective coating on the rough blank after machining; and the protective coating is prepared in at least one of following manners: applying antirust oil, electrophoresing, spraying epoxy, plating zinc, plating nickel, plating chrome, spraying plastics and coating parylene.