

TITLE OF INVENTION: COMPOSITE MODIFIED PILLARED MATERIAL AND PREPARATION METHOD THEREOF, FLUORINE-FREE AND ALKALI-FREE ACCELERATOR BASED THEREON AND PREPARATION METHOD THEREOF

ABSTRACT

The present disclosure discloses a composite modified pillared material modified with a hyperbranched quaternary ammonium salt and a preparation method thereof. The composite modified pillared material uses a hyperbranched quaternary ammonium salt having a specific structure, such as the hyperbranched polyamine-based quaternary ammonium salt represented by Formula I or the hyperbranched quaternary ammonium salt represented by Formula II, as the modifying material. Since the modifying material itself contains a branched structure, the modifying material differs from conventional modifying materials having a long-chain structure. This difference ensures a larger interlayer spacing and a higher Cation Exchange Capacity (CEC) after the pillared material is intercalated. The present disclosure also discloses a fluorine-free and alkali-free accelerator using the aforementioned composite modified pillared material as a stabilizer and a preparation method thereof. Compared to traditional alkali-free accelerators, the fluorine-free and alkali-free accelerator increases the amount of aluminum sulfate therein by more than 10%.