# Sodium phase change energy storage materials

Is sodium sulfate decahydrate a phase change energy storage material?
In this paper,sodium sulfate decahydrate (SSD) with a phase transition temperature of 32 °C was selected as the phase change energy storage material. However,SSD has the problems of large degree of supercooling,obvious phase stratification,and low thermal conductivity.

Are phase change materials useful for thermal energy storage?
As evident from the literature, development of phase change materials is one of the most active research fields for thermal energy storage with higher efficiency. This review focuses on the application of various phase change materials based on their thermophysical properties.

How does phase separation affect the thermal stability of hydrated salt?
The thermal stability of a phase change material derived from sodium,specifically hydrated salt,is primarily influenced by the separation of water molecules,which is related to poor molecular bonding. During multiple cycles of melting and solidification,this phase separation phenomenonbecomes more noticeable and significantly affects the material's performance.

What causes phase separation in hydrated salt?
The phase separation of hydrated salt is one of the key issues that affect the cold energy storage and service life of phase change cold storage materials. The separation of water moleculesis the main factor that determines the thermal stability of the melt,which is related to poor molecular bonding.

Is a self-healing sodium acetate trihydrate phase change material gel suitable for PTM?
To address the aforementioned shortcomings of PCM applied in PTM,a self-healing sodium acetate trihydrate (SAT) phase change material gel (PCMG) demonstrating solar energy conversion and storage is proposed to realize the PTM under static and dynamic modes. SAT with a melting point of 55-60 °C is suitable for solar thermal utilization.

How are phase change cold storage materials prepared?
Four different phase change cold storage materials are prepared by adjusting the ratio of the additives to sodiumin the three additives. The best ratio of the additives to each other is determined,and then the phase change materials are prepared based on this.

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