

June 18, 2020

KANEKA CORPORATION

Kaneka releases the sheet-shaped phase change material PATTHERMO™ Sheet

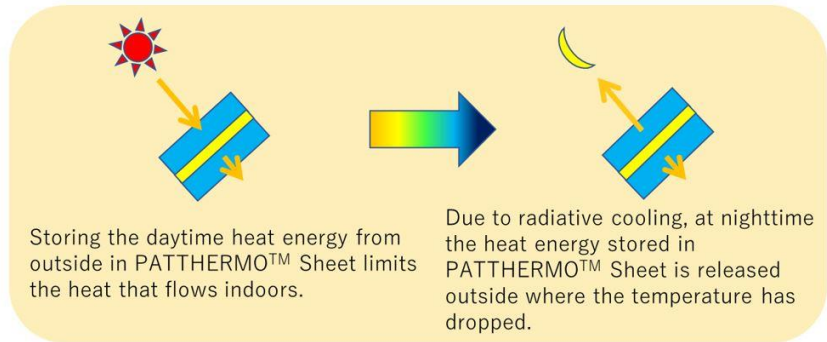
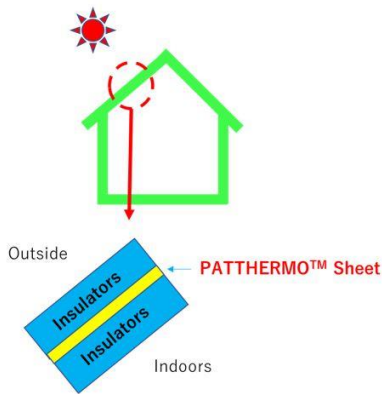
- Helps save energy during summer days when used with insulators –

Kaneka Corporation (Headquarters: Minato-ku, Tokyo; President: Minoru Tanaka) has developed the sheet-shaped phase change material PATTHERMO™ Sheet, made from a specialized plastic phase change material*, and has begun selling it from June. The demand for greater energy saving and comfort in homes is rising, and phase change materials are increasingly gaining attention. Kaneka continues to improve the quality of our extruded polystyrene foam insulation material (product name: Kanelite Foam™) and propose ways of using it, however now the adding of the sheet-shaped phase change material PATTHERMO™ Sheet to our lineup will reinforce our solutions for realizing more energy-saving and comfortable living.

During summer, the temperature of roof surfaces during the day rises extremely high in comparison to the outside air temperature, leading to the predicaments of higher indoor temperatures and heat being unable to escape outside, even during the night. To help solve these issues, Kaneka cooperated with universities and regional engineering firms across a span of 3 years to observe peak shaving during the daytime in summer and verify how to effectively use phase change material.

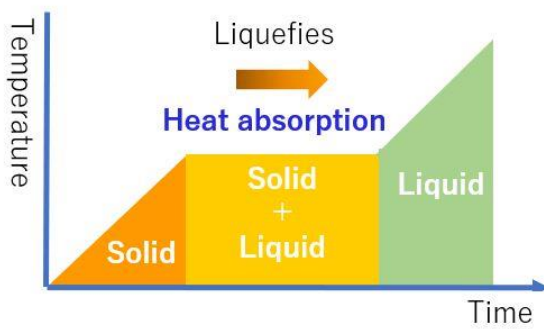
PATTHERMO™ Sheet is a sheet-shaped phase change material that has been extruded into an approximately 1mm thick sheet using a specialized plastic phase change material. By together using PATTHERMO™ Sheet with an extruded polystyrene foam insulation material (product name: Kanelite Foam™) on roofs, the heat from outside is stored by PATTHERMO™ Sheet to limit the inflow of heat, reducing the heat that finds its way indoors during the peak sun hours of summer. In addition, by releasing the stored heat back outside during the night, the day-long strain on air-conditioners is reduced, helping to save energy.

* The extruded sheets have been designed to store and emit heat at specific temperature levels within the range of 20°C to 50°C, taking advantage of the phase changes of energy storing materials. Unlike conventional materials, these sheets maintain a solid form while at the temperature level for heat storage. Conventional energy storage materials liquify when they store heat, requiring them to be used while enclosed in a container or capsule to prevent leakage of the heat storage components.

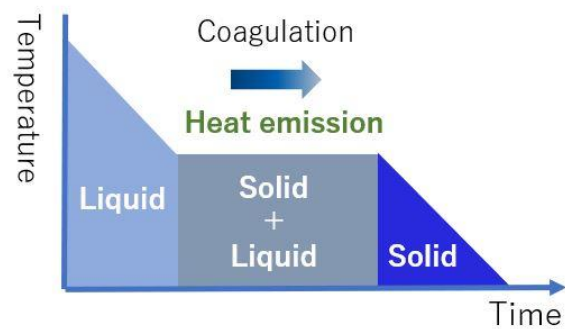


How heat from outside is kept out by PATTHERMO™ Sheet

Daytime



Nighttime



Phase change materials absorb and emit heat during phase changes, such as when turning from liquid into solid form and vice versa.