Sodium nitrate requirements for solar panels

Is solar salt a pure molten nitrate?

In this section we will review the thermophysical and thermochemical properties of these mixtures and of the pure molten nitrates in order to compare it. The Solar Salt is a mixture of NaNO3 /KNO 3 containing 60% by weight of sodium nitrate.

What nitrate is used in a solar power tower?

Reference: A.V. Zavoico,SAND2001-2100 Solar Power Tower Design Basis Document - Courtesy of Sandia National Laboratories Albuquerque,New Mexico 87185 and Livermore,California 94550 - July 2001. For this specific application,Sodium Nitrateand Potassium Nitrate are mixed in 60%/40% by weight ratio.

Does solar salt stabilize nitrite?

Table 1. Thermophysical properties of considered molten salt as HTF and/or TES in CSP. NA,not available. Bonk et al. ,recently,revealed that Solar Salt has stabilized nitrite content of 5 mol%during the described time at 560 °C under open atmosphere.

What is Hitec solar nitrate salt?

Coastal Chemical Hitec solar nitrate salt is composed of high purity Sodium nitrate and Potassium nitrate salts. This composition provides thermal performance identical to the eutectic mixture,but at a lower cost.

How much nitrate does a CSP plant use?

This even larger thermal stability range fits the requirements of Concentrated Solar Power (CSP) plants which,as a consequence,use nitrate molten mixtures as a heat storage medium. By 2030,it is estimated a usage of ?1.8 × 10 9 tonsof nitrate mixtures in CSP plants 1.

What are the properties of sodium nitrate and potassium nitrate?

For this specific application,Sodium Nitrate and Potassium Nitrate are mixed in 60%/40% by weight ratio. The mixture is stable in air and has a low vapour pressure. Thermal and fluid properties of molten thermo-solar salts mixture (60% NaNO 3 +40% KNO 3 as a function of temperature.

The potential of using pure sodium nitrate or potassium nitrate is considered because the cold tank temperature for the sCO2 power cycle is estimated at 420°C, which would allow use of a ...

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