Corrosion Resistance of Solar-Powered Containers Compared to Solar Energy

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Which Alloy owes the best corrosion resistance in solar salt?
Dorcheh et al. studied the corrosion behavior of ferritic steel,austenitic steel and Inconel625 alloyin solar salt at 600 °C,drawing a conclusion that Inconel625 alloy owed the best corrosion resistance.
What is the corrosion rate of solar salt at 600 °C?
The corrosion rates in Solar Salt at 600 °C are practically the same as those of AISI 316, 321 and 347 tested at the same conditions and showing analogous increase of corrosion rate at 680 °C, associated with build-up of additional corrosion products at the higher temperature.
Does Mo improve corrosion resistance in solar salt?
Considering the effect of Mo,which is known to improve resistance to localized corrosion in aqueous media,its benefit on corrosion rate in Solar Salt could not be established,considering that corrosion resistance of AISI 316/316L,317L and OC-4 does not differ significantly from that of Mo-free alloys.
Which alloy has the best corrosion resistance?
Analysis of different corrosion resistance of alloys The investigation indicates that Haynes230 alloyexhibited the best corrosion resistance,followed by TP347H alloy,whereas Inconel625 alloy showed the weakest resistance. The corrosion of alloy samples in molten chloride salts was primarily caused by the selective dissolution of Cr and Fe .

A higher TES/HTF operating temperature leads to higher efficiency of thermal to electrical energy conversion of the power block in CSP, however causes additional challenges, particularly ...

A corrosion test under dynamic conditions on common container materials used in TES systems for CSP Plants, CSA516 and SS347, was successfully performed with molten ...

In this context a summary of materials and components is presented, followed by description of the involved corrosion mechanisms and techniques of their study.

This study aims to evaluate the corrosion of several different alloys in chloride salts, clarify the corrosion mechanism and influencing factors, and gain a comprehensive ...

This paper outlines the superior salt corrosion behavior of a novel low-cost, Al2O3-forming, ferritic, Laves phase-strengthened (i.e., structural) steel in NaNO3/KNO3 solar salt at ...

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Abstract Thermal energy storage (TES) systems based on molten salt are widely used in concentrating solar power (CSP) plants. The investigation of the corrosion behavior of alloy ...

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