

# **Corrosion-resistant solar-powered containers for steel plants**





## Overview

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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 alloy in solar salt at 600 °C, drawing a conclusion that Inconel625 alloy owed the best corrosion resistance.

Why is molten salt protective film important for concentrating solar power plants?

Protective film formed by  $\text{CaCr}_2\text{O}_4$  deposition slows down the corrosion process. The molten salt thermal energy storage system is the most important composition of concentrating solar power plants, resulting in the corrosion behavior of alloys in molten salts is essential to be analyzed to ensure the long-term stability of the system.

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.

Can solar salt be used in CSP plants?

The last material evaluated for use in Solar Salt is the low-Cr grade, T22, tested for 2000 h at either 390 or 550 °C . The results at 390 °C show small amounts of corrosion products at the end of the test, which allows the use of this type of steel in CSP plants at this temperature.



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### High-Temperature Molten Salt Tanks and Pipes

3 days ago · High-Temperature Molten Salt Tanks and Pipes Overview Concentrated solar power (CSP) plants can become cheaper if they become more efficient, but this will require ...

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### Corrosion behavior of different alloys in novel chloride ...

Jul 1, 2025 · The superior corrosion resistance of Haynes230 can be attributed to its higher Ni and W content. These results are significant for optimizing the usage of novel molten salts and ...

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### A New Approach to Low-cost, Solar Salt ...

Dec 7, 2021 · This paper outlines the superior salt corrosion behavior of a novel low-cost, Al<sub>2</sub>O<sub>3</sub>-forming, ferritic, Laves phase-strengthened (i.e., ...

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### Corrosion Resistant Hot-DIP Galvanized Steel Solar Racking ...

Nov 15, 2025 · Excellent Corrosion and Salt Resistance: Withstands harsh outdoor environments, suitable for coastal and humid regions. High Pre-assembly Level: Delivered with maximum pre ...

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### Corrosion evaluation and resistance study of alloys in

Dec 2, 2023 · 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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### Thyssenkrupp: Corrosion protection for steel substructures of solar plants

Dec 6, 2023 · Thyssenkrupp Steel will be represented at Intersolar Europe for the first time this year (June 14-16, 2023). The company will present the corrosion protection solution ZM ...

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### A New Approach to Low-Cost, Solar Salt-Resistant Structural ...

Dec 6, 2021 · This in principle makes the steel conceivable for structural CSP power plant application, with long-term resistance to molten salt corrosion remaining a point of concern.

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### Compatibility of container materials for Concentrated Solar ...

Feb 1, 2020 · The corrosion performance of container materials is a key factor that has to be addressed in the construction of new CSP Plants with TES systems. Many factors affect ...

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### A New Approach to Low-Cost, Solar Salt ...

Dec 6, 2021 · This in principle makes the steel conceivable for structural CSP power plant application, with long-term resistance to molten salt corrosion ...

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### A New Approach to Low-cost, Solar Salt Resistant

Dec 7, 2021 · This paper outlines the superior salt corrosion behavior of a novel low-cost, Al<sub>2</sub>O<sub>3</sub>-forming, ferritic, Laves phase-strengthened (i.e., structural) steel in NaNO<sub>3</sub>/KNO<sub>3</sub> solar salt at



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Highest corrosion protection for the photovoltaic industry

The base material steel, provided with long-lasting corrosion protection, manages this "balancing act of requirements" effortlessly. Wuppermann offers high-quality and resistant products for ...

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Materials corrosion for thermal energy storage systems in ...

Apr 1, 2018 · The current commercial deployment of concentrating solar power (CSP) relies on a system of thermal energy storage (TES) for round the clock generation of electricity. The heat ...

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