

# Corrosion-resistant Moroni photovoltaic energy storage containers for environmental protection projects





## Overview

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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 corrosion products are formed in solar salt?

Adapted from Ref. The principal corrosion products formed in Solar Salt are  $\text{FeCrO}_4$ ,  $\text{Fe}_2\text{O}_3$ , and  $\text{MgFe}_2\text{O}_4$ , indicating the importance of Mg impurity in the electrolyte for the formation of oxide layer, and also a less dense and less protective outer layer of  $\text{NaFeO}_2$  was identified , , .

What are the different types of corrosion in TES tanks?

Corrosion understood as thermodynamically driven degradation of materials may appear in various forms. The forms most relevant to TES tanks used in CSP are high temperature corrosion, localized corrosion and/or mechanically assisted corrosion, which are summarized in Fig. 6 and further described.

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.



## Corrosion-resistant Moroni photovoltaic energy storage containers



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