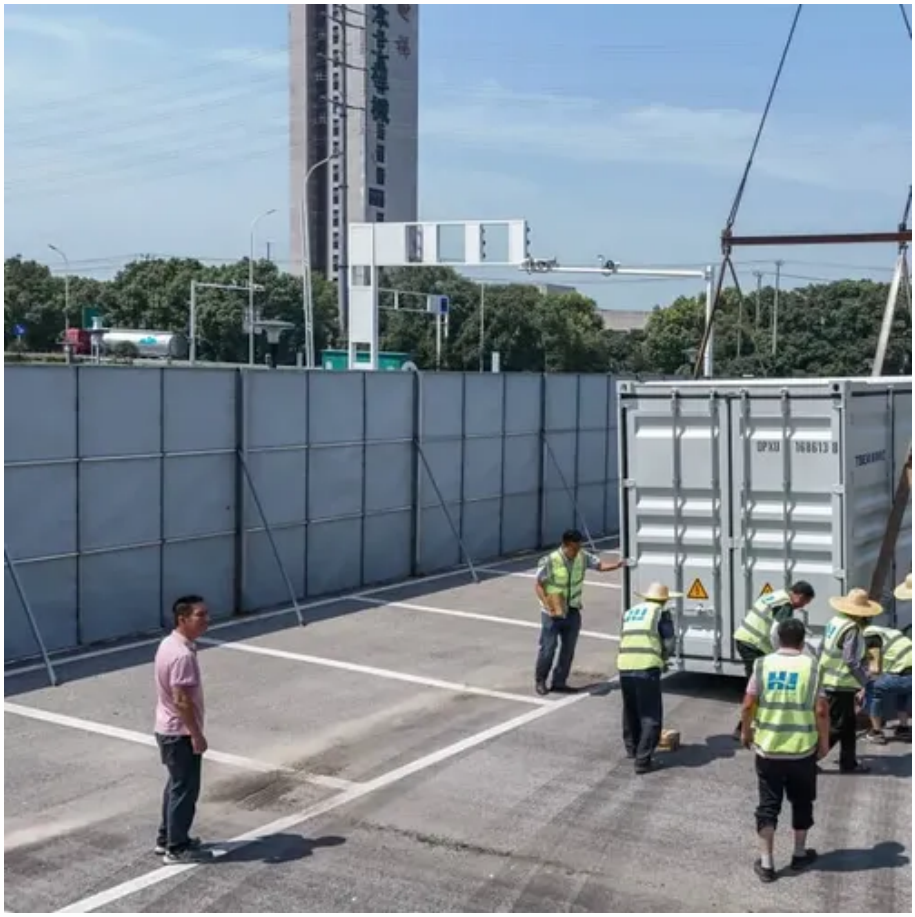
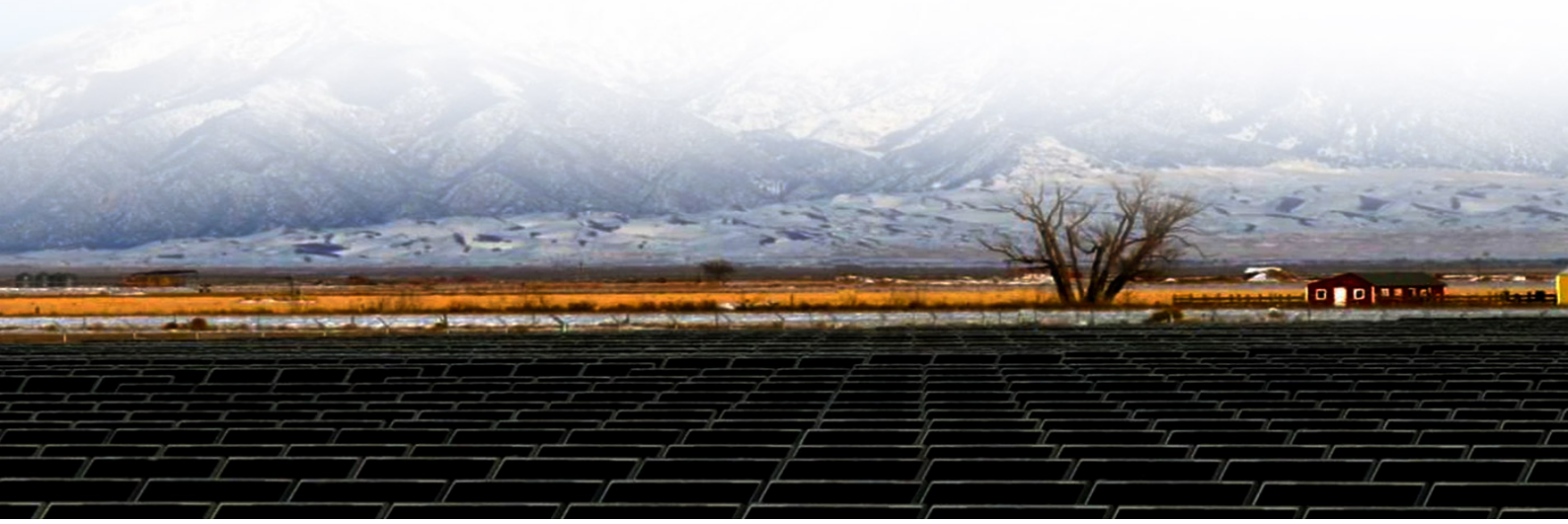
# The relationship between solar glass and antimony





## Overview

In solar glass specifically, small amounts of antimony oxide help stabilize optical properties under years of UV exposure, reducing “solarization” (the tendency of glass to brown or lose transmission over time).

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Antimony, symbol Sb (from the Latin stibium), is a silvery metalloid most people never think about until it starts showing up in export-control headlines. Yet it sits on every major critical mineral list —from the European Union to the United States, Japan, and Australia—to yes, the CMI. because it.

However, the composi�on of solar glass varies, par�cularly in terms of an�mony content, depending on the produc�on method. An�mony is used to enhance the performance of paterned solar glass but poses environmental and health risks, complica�ng recycling efforts. While float glass, commonly used in.

The proposed PhD thesis is part of the ANR GRISBI project (2026–2030), which aims to optimize the recycling of glass from photovoltaic (PV) panels. These glasses, predominantly manufactured in China, are doped with antimony oxide ($Sb_2O_3$) to ensure high transparency while keeping production costs.

The rapid increase in end-of-life waste from photovoltaic (PV) modules in Europe is a significant challenge. Current estimates indicate an annual generation of over 200,000 tons of discarded PV panels, with projections suggesting a potential increase to over 400,000 tons by 2030. Among this waste.

Antimony is a highly toxic element, present at remote locations in our planet, and is used in some glasses to enhance its optical performances. Antimony is not present in common glasses, such as: Normal window glass; glass bottles; drinking glasses; or glass lamps etc. Antimony in glass was.

The Ministry of Commerce and the General Administration of Customs of China jointly issued a notice to implement export controls on antimony and antimony related products from September 15, 2024. The relevant departments stated that

this move aims to further safeguard China's national security and.

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## The Dark Side of Solar Glass: Antimony, Geopolitics and the ...

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## Physicochemical Properties of Antimony-containing Photovoltaic (PV) Glass

To make the recycling of PV glass into flat glass production feasible, it is therefore essential to gain a deeper understanding of the physicochemical behavior of antimony in glass, and more ...


## Release: ESIA Recommendation Paper Addressing uncertain antimony

Given that glass constitutes a substantial portion of PV module weight, recycling glass proves environmentally beneficial by reducing CO 2 emissions and conserving energy. ...

## Necessity for recycling photovoltaic glass: Managing resource

The production of this significant amount of (77.1-178 Mt) glass annually will place considerable pressure on raw materials, such as

antimony (Sb), which is essential for PV glass manufacturing.


## Antimony-Free Solar Glass , British Glass

However, glass manufacturers have been hard at work since then trying to eliminate antimony from solar glasses where it is considered necessary to use it. This article examines the ...

## The Main Application Of Antimony

Solar glass typically contains 0.25% antimony, and the front glass of each solar photovoltaic module weighs about 16 kilograms, so each module contains approximately 40 ...

## Physicochemical Properties of Antimony-containing Photovoltaic ...

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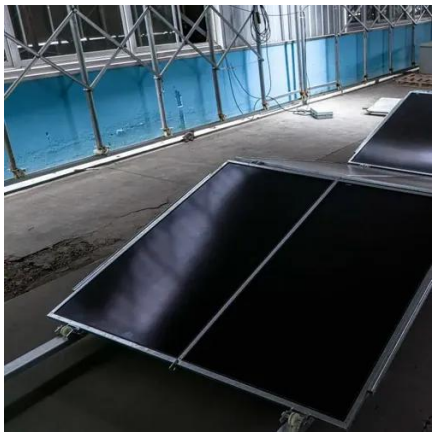
## Addressing uncertain antimony content in solar glass for ...

Solar glass can be either low-iron paterned glass or low-iron float glass. Both can be recycled if the quality is acceptable, but this depends on the glass composi on and the end product to be ...



## Concept Note/ Blue Print on Management of Antimony ...

Results indicates that samples of waste solar panel glass containing Antimony does not fall in the category of hazardous waste as per the concentration limits stipulated for ...

## Solar cell using low iron high transmission glass with antimony ...

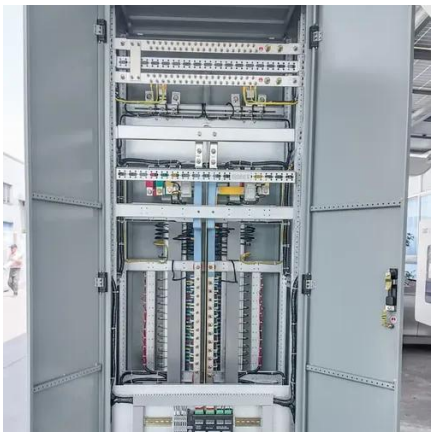
Antimony (Sb) is used in the glass to improve stability of the solar performance of the glass upon exposure to ultraviolet (UV) radiation and/or sunlight. The combination of low iron

## Release: ESIA Recommendation Paper ...

Given that glass constitutes a substantial portion of PV module weight, recycling glass proves environmentally beneficial by reducing CO ...

## NoSbEra Antimony Free Solar Glass

Test results published by SPF establish that Antimony free glass by Borosil has nil photo-degradation and the highest efficiency amongst the solar glasses.



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