

The role of antimony oxide in solar glass





Overview

Does solar glass contain antimony?

However, the composition of solar glass varies, especially concerning antimony (Sb) content, depending on the production method. Antimony is used to enhance the performance of patterned solar glass but introduces environmental and health concerns, complicating recycling efforts.

What is antimony oxide?

Antimony oxide is a conditional glass former and simple binary $\text{SiO}_2\text{-Sb}_2\text{O}_3$ [22, 23], $\text{B}_2\text{O}_3\text{-Sb}_2\text{O}_3$ [24, 25] and $\text{P}_2\text{O}_5\text{-Sb}_2\text{O}_3$ glasses, and more complex glasses [11, 13, , , ,], have all been studied to gain new and fundamental composition-structure-property understanding.

Can antimony be incorporated in oxide glasses?

Antimony has been incorporated in oxide glasses and some antimony phosphate glasses have been reported , , , .

How does antimony decolourise glass?

Antimony decolourises such glasses by oxidising Fe^{2+} to Fe^{3+} through mutual redox interactions during glass melting and cooling [5, , , , 15, 20, 21], whereby: $(3)\text{Sb}^{5+} + 2\text{Fe}^{2+} \rightarrow \text{Sb}^{3+} + 2\text{Fe}^{3+}$ In addition to the study of antimony as a refining and decolourising agent, other effects of antimony in oxide glass have also received attention.



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