

# White, Cloudy Glass

## 1. White, cloudy glass



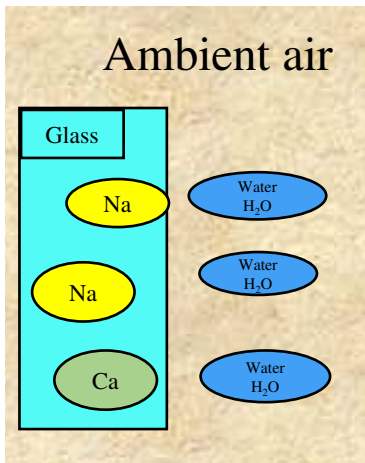
On the surface of the glass you can see the white clouds and spider's web.  
This is due to the fact that the "white crystals" of the carbonic acid compound formed by the chemical reaction called weathering were attached to the glass surface.

※The crystals of the carbonated compound on the glass surface are very small and do not affect the human body.

## 2. Weathering mechanism

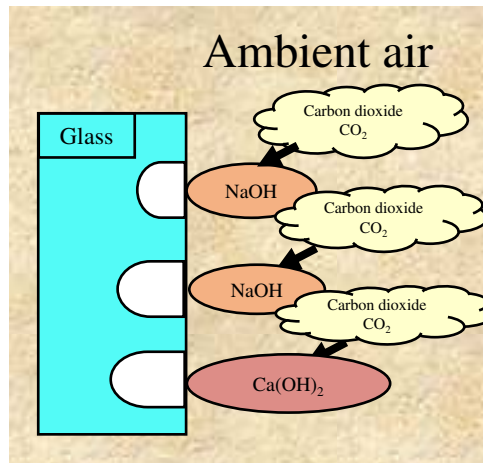
### 2-1.

Alkaline components (sodium and calcium) in glass react with atmospheric water ( $H_2O$ )



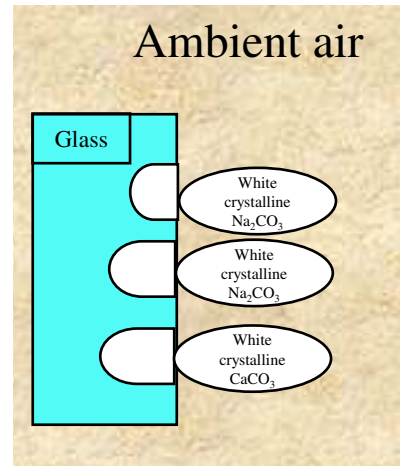
### 2-2.

Reaction with atmospheric  $CO_2$  after formation of alkali hydroxide ( $NaOH$ ,  $Ca(OH)_2$ )



### 2-3.

Formation of sodium carbonate ( $Na_2CO_3$ ) and calcium carbonate ( $CaCO_3$ ) (white crystals)



This white crystal appears as a white cloudy or spider nest on the glass surface.

## 3. Weathering Degree and Occurrence

The degree and appearance of weathering depends on the composition of the glass and the environmental conditions.

In fact, it is difficult to control weathering.

Refer to the separate documentation on how to remove weathering (cloud).

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