

Why does candy floss go hard?

From the sweeties.net wiki

Candy floss is made by melting sugar and spinning it through tiny holes, so that it sets in the air as fine threads. The sugar cools so fast that it never forms crystals: it sets as an amorphous, glassy solid. That glassy sugar is the reason candy floss is so light, and also the reason it does not last: see [how is candy floss made?](#)

Glassy sugar pulls in water

Glassy sugar is hygroscopic: it takes up water from the air around it. Food scientists Theodore and Peter Labuza, in a 2004 study published in the Journal of Food Processing and Preservation, found that as the humidity rises, candy floss absorbs water and turns rubbery.

Once that happens, two things follow. The fine threads lose their stiffness and collapse, so the cloud shrinks and goes sticky. Then the sugar crystallises, and the collapsed floss sets into hard, crunchy lumps.

How fast it happens

The Labuzas stored candy floss at 25°C in air of different humidities and watched what happened:

- **0 to 11% humidity**, very dry air: it stayed stable for more than 12 months.
- **33% humidity**: it collapsed and crystallised within 3 days.
- **45%, 54% and 75% humidity**: it collapsed and crystallised in less than a day.

In other words, candy floss only keeps its shape in very dry air. Leave it open on a damp day and it will not last long.

Keeping it fluffy

The answer is to keep air, and the water in it, away from the floss. Candy floss is sometimes sold ready packed in a plastic bag, which keeps the air out until you open it. Keep it sealed until you are ready to eat it, and eat it soon after opening. Low moisture sweets in general last best in dry, covered storage: see [how long do sweets last?](#)

Related science

The same glassy threads that go hard in damp air dissolve almost instantly in water: see [why does candy floss dissolve in water?](#)

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