

What is citric acid in sweets?

From the sweeties.net wiki

Citric acid is the acid that makes lemons and limes taste sour. In sweets it is used to add a sharp, fruity tang and to help preserve them. On an ingredients list it appears as citric acid or by its E number, E330.

From lemons to mould

Citric acid is found in many fruits and vegetables, most of all in citrus fruit. Lemons and limes are especially rich in it: it can make up as much as 8 per cent of the dry weight of the fruit. The chemist Carl Wilhelm Scheele first isolated it in 1784, crystallising it from lemon juice.

Making it on an industrial scale began in 1890, based on the Italian citrus fruit industry. The juice was treated with lime to form calcium citrate, which was then turned back into citric acid with sulphuric acid.

Then the First World War disrupted Italy's citrus exports, and a very different method took over. In 1917 an American food chemist, James Currie, discovered that certain strains of a mould, *Aspergillus niger*, were efficient at making citric acid, and two years later the pharmaceutical company Pfizer began producing it this way on an industrial scale. The mould is fed a cheap sugary liquid, such as molasses, corn steep liquor or starch broken down into sugar, and it turns the sugar into citric acid. Although citric acid could be extracted from fruit or made chemically, fermentation by moulds is now almost the only method used.

The scale is enormous. More than two million tons were made in 2018, more than half of it in China. More than half of all citric acid goes into drinks, and about a fifth into other foods.

What it does in sweets

Citric acid is one of the stronger edible acids, and its main use is as a flavouring and preservative in food and drink, especially soft drinks and sweets. It has several jobs.

- **Sourness.** It gives fruit sweets their sharp tang. Sour sweets such as lemon drops can be coated in sour sanding, a mixture of sugar with citric, tartaric and malic acids.
- **Fizz.** Sherbet is a mix of sugar and flavouring with an edible acid, which may be citric, tartaric or malic acid, and a base such as bicarbonate of soda. When it meets moisture, such as saliva, the acid and the base react and give off gas, which is the fizz you feel on your tongue: see [why do fizzy sweets fizz on your tongue?](#)
- **Smooth caramel.** Added to caramel, it helps stop the sugar crystallising.
- **Colour.** It can be used to balance the acidity of some food colours.

Citric or malic?

Citric acid is not the only acid in sweets. Malic acid, the acid of apples, is sourer, and it is sometimes used with or in place of citric acid in very sour sweets: see [what is malic acid in sweets?](#) and [why do sour sweets make your mouth pucker?](#)

Is it safe?

Citric acid is part of the chemistry of life. It is an intermediate in the citric acid cycle, part of the metabolism of all living things that use oxygen, including us. As a food additive it is approved across Europe as E330.

It is still an acid, though. Pure citric acid can irritate the throat, skin and eyes, and long term or repeated consumption may cause erosion of tooth enamel. For more on the numbers on sweet packets, see [what are E numbers in sweets?](#)

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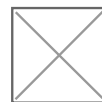
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