

Baking soda and baking powder

[Business](#), [Industries](#)



Baking Soda

Baking Soda, also known as sodium bicarbonate or sodium hydrogen bicarbonate is an alkali which is a white crystalline however it often appears as a fine powder, its chemical name is NaHCO_3 . It is used to increase the volume of baked goods. It has a slightly salty, alkaline taste resembling that of washing soda (sodium carbonate). (1)

Baking Powder

Baking Powder is also a dry leavening agent which is a mixture of a weak alkali and a weak acid; it increases the volume and lightens the texture of baked goods. Baking powder works by releasing carbon dioxide (CO_2) gas into a batter or dough through an acid-base reaction, causing bubbles in the wet mixture to expand and therefore leavening the mixture.

Most commercially available baking powders are made up of an alkaline component (typically sodium bicarbonate also known as baking soda), one or more acid salts (such as cream of tartar), and an inert starch (cornstarch in most cases, though potato starch may also be used). Baking soda is the source of the carbon dioxide, and the acid-base reaction can be generically represented as: $\text{NaHCO}_3 + \text{H}^+ \rightarrow \text{Na}^+ + \text{CO}_2 + \text{H}_2\text{O}$

(2)

The Difference between Baking Soda and Baking Powder

Both baking soda and baking powder are leavening agents, which means they are added to baked goods before cooking to produce carbon dioxide and cause them to 'rise'. Baking powder contains baking soda, but the two

substances are used under different conditions. Baking soda is pure sodium bicarbonate. When baking soda is combined with moisture and an acidic ingredient (e. g., yogurt, chocolate, buttermilk, honey), the resulting chemical reaction produces bubbles of carbon dioxide that expand under oven temperatures, causing baked goods to rise. The reaction begins immediately upon mixing the ingredients, so you need to bake recipes which call for baking soda immediately, or else they will fall flat!

However Baking Powder contains sodium bicarbonate, but it includes the acidifying agent already (cream of tartar), and also a drying agent (usually starch). Baking powder is available as single-acting baking powder and as double-acting baking powder. Single-acting powders are activated by moisture, so you must bake recipes which include this product immediately after mixing. Double-acting powders react in two phases and can stand for a while before baking. With double-acting powder, some gas is released at room temperature when the powder is added to dough, but the majority of the gas is released after the temperature of the dough increases in the oven.