



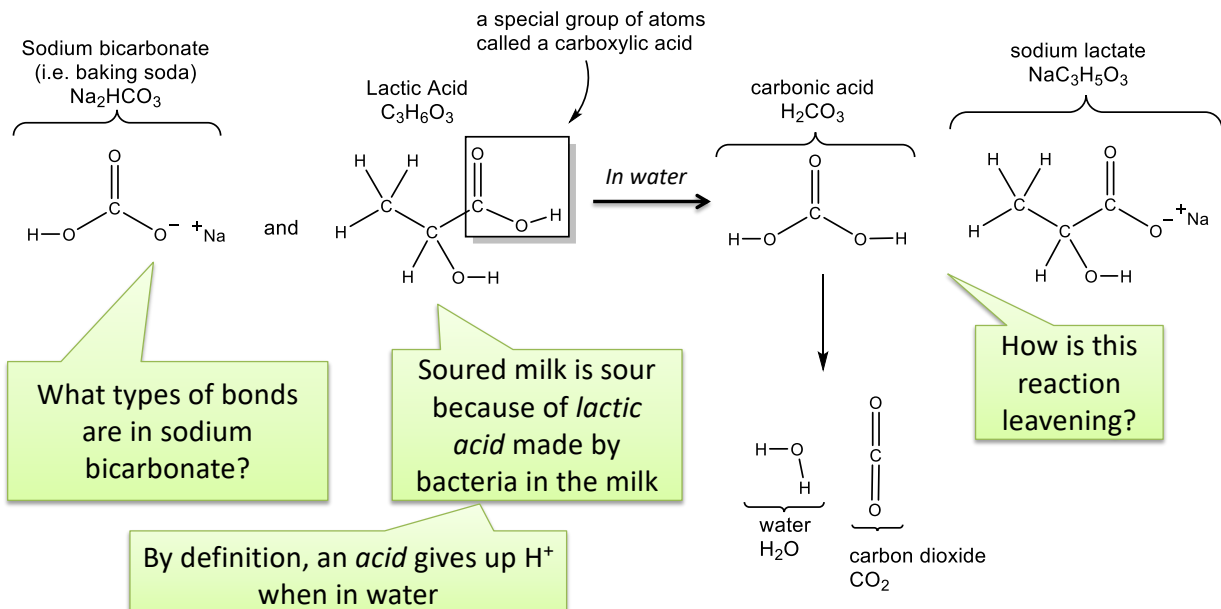
Unit 1

CHEMICAL LEAVENING



Leavening without yeast

For more than three millennia, the method of preparing bread by means of yeast fermentation did not change substantially; that is, until the 1830s when bakers began adding baking soda (sodium bicarbonate) and *sour milk* to their dough. The mixture allowed the dough to rise without the use of yeast!!

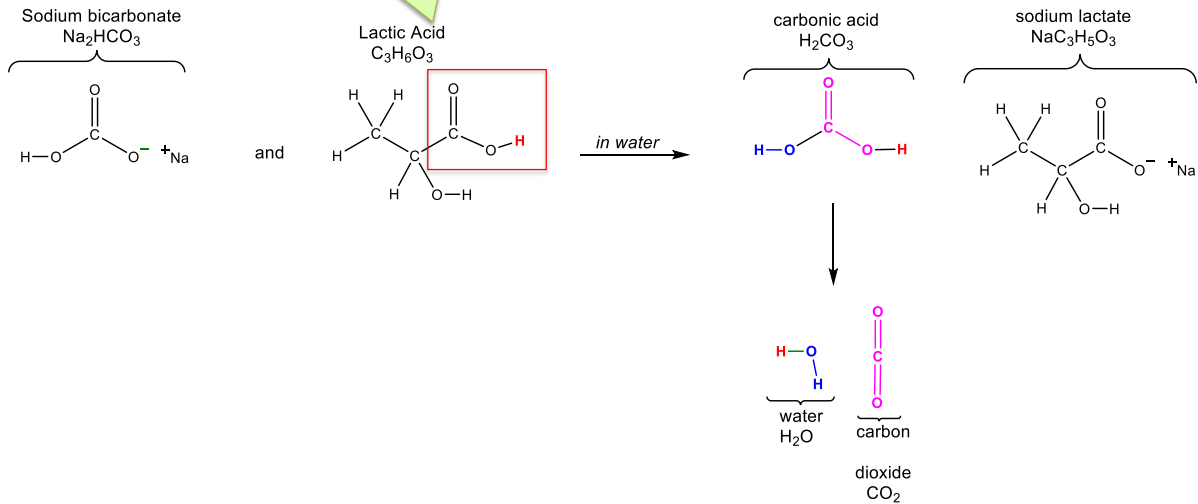




Baking soda plus an acid

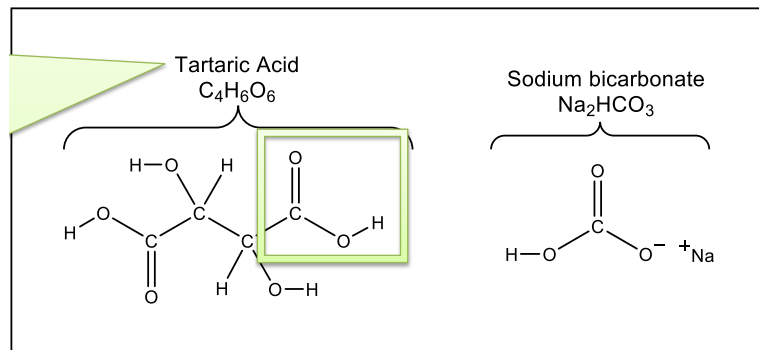
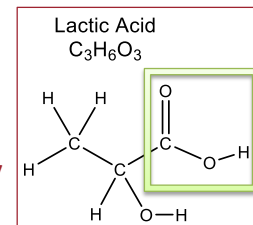
What bonds were broken and formed

By definition, an *acid* gives up H^+ when in water



Chemical leavening with modern ingredients

Modern recipes for baked goods don't typically use soured milk in place of yeast! Although, buttermilk is a popular ingredient...



A basic baking powder is a mixture of sodium bicarbonate (Na_2HCO_3) and cream of tartar (a.k.a. tartaric acid, $C_4H_6O_6$).

Modern, commercially available baking powders mix sodium bicarbonate (baking soda) with sodium acid pyrophosphate or monocalcium phosphate – both *acids*.