

## **“Dad, what’s sodium bicker-bonnet?”**

**Don Mercer**  
**Associate Professor, Food Science**  
**Kemptville Campus University of Guelph**

I have always been a compulsive food ingredient line reader. Perhaps it’s my food background, or maybe I just don’t get out enough. Either way, they are interesting, informative, and sometimes provide a surprise or two.

This habit seems to have been passed down to our children, which is not necessarily a bad thing. I remember the older of our two daughters who had just learned to read studying the ingredients on the side of a box. With a rather puzzled look on her face, she asked in a matter-of-fact manner, “Dad, what’s sodium bicker-bonnet?” I must confess that I had never encountered that particular ingredient. Anxiously checking it out, I had to hold back my laughter as her finger pointed to the words “sodium bicarbonate”. Now, more than twenty years later, I still find myself smiling whenever I encounter this ingredient, or while teaching a class where we are discussing the chemical functions of good-old baking soda.

Ingredient lines can tell you a lot about the product. They are quite important and are strictly regulated. First, ingredients are listed in the order of their percentage by weight in the product. If you see a lot of sugars near the top of the list, this may be a message to you. Sometimes the sugars are listed by their proper names like sucrose, glucose, and fructose. Perhaps you may see invert sugar, which is simply a mixture of fructose and glucose obtained by breaking down sucrose into its two component parts to enhance its sweetness.

Ingredient lines may also alert us to substances to which we may have some degree of sensitivity. Potential allergens, such as tartrazine (a colouring agent) or sulphites (a preservative), are listed, often in bold type, to draw attention to them. You may also notice brackets after a particular ingredient to indicate what is present in it. This may be the case with chocolate chips where the components of the chocolate are given in parentheses.

There are some ingredients which have rather peculiar names. One of my personal favourites is “tetrasodium pyrophosphate”. Spotted on a bag of marshmallows, it sent me scrambling to find out what strange tasks it might actually perform. It was obvious that there were four sodiums in the molecule, and that there was a phosphate group present. What was really mysterious was the “pyro” part of the name. Was this the ingredient that caused my marshmallows to burst into flame while roasting them over a campfire? Where did this fiery name originate, and what did it mean? All of the other things listed made sense, but this one stood out like the proverbial sore thumb.

The on-line Health Canada Food Additive Dictionary indicated that tetrasodium

pyrophosphate is a very busy additive. It functions as an emulsifier that helps disperse tiny droplets of oil in water, or droplets of water in oil, so that they do not separate. It can be used to adjust the pH of a food to give it the proper acidity for developing the correct flavour and texture. Among several other functions, it can also act as a plasticizing agent in gums, and work as a foaming agent.

I was unsuccessful at finding the origin of the name “pyrophosphate”, but then again, I didn’t really look very hard. To me, even though I know better, the real function of tetrasodium pyrophosphate is as an initiator for combustion when roasting marshmallows - even if it isn’t listed as such on the Health Canada website.



**Marshmallows contain some rather interesting ingredients**