

# The science behind baking soda, powder and cream of tartar

Many folks would assume that while standing in the lobby of the arena waiting for your son to come out of the dressing room, especially in a game where he scored two goals (congrats Alex!), you might be chatting with your friend about the game. No. Of course not. We were chatting about baking. Now generally, baking is mom's domain; I'm the cook, she's the baker. Although we cross the lines frequently, that is where our passion lies. But I will attempt to clear up the question at hand.

What are baking soda, baking powder and cream of tartar? Can you substitute and why are they needed in the recipes? Big question. Let's start with what they are.

Baking soda (also known as sodium bicarbonate) and baking powder are both leavening agents. They are primarily used in baking to help the batter or dough rise. Baking soda requires an acidic compound to kick-start the reaction— either cream of tartar, lemon juice, yogurt for example. When the sodium bicarbonate and the acid react, they create carbon dioxide, which causes the dough to rise.

Baking powder was invented in the 1800s so that the sodium bicarbonate and the acid were already combined in one compound. Generally, baking powder consists of two parts baking soda and one part cream of tartar (the acid) mixed with some flour or starch to reduce the reaction.

So, if there is sufficient acid in the recipe already, then baking soda can be substituted for baking powder and a sufficient reaction will take place. However, if the recipe has fairly high acidity (which can be caused by buttermilk, lemon, yogurt, citrus or honey) then baking soda is called for because if baking powder is used then the mixture may become excessively acidic and some of the acids will remain unconsumed in the chemical reaction and there



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will be an unpleasant chemical taste to the food. Most baking powders are "double acting". This means that they contain two acids that react separately. One reacts at a low temperature (as soon as the batter is prepared) and the other at a higher temperature (once it goes in the oven). If a baking powder is called "single acting", then it only reacts at the lower temperature.

Many recipes like cakes, cookies, etc., call for the butter and sugar to be creamed together at the start of the recipe. This is important because when this happens, it creates tiny seed bubbles in the batter which the leavening gas will further expand when the leavening agent is added.

Cream of tartar (not to be confused with the tartar sauce you put on your fish) is a white, odorless powder that is created during the fermentation of wine. When the wine ferments, there is a crust left on the inside of the barrels which is purified and this acidic powder then becomes cream of tartar. Cream of tartar is used primarily in combination with baking soda to create baking powder. However, it is also used as a stabilizer for egg whites. It can be used to prevent sugar syrups from crystallizing and is found in combination with potassium chloride in sodium-free salt substitutes.

The moral of the story is don't mess with the recipe when you are baking. Baking is a science and steps that may seem small (like creaming the butter or measuring the baking soda correctly) are key in ensuring that the delicate chemical reactions are completed properly and your food will come out as intended. Would I substitute baking powder and baking soda— probably not, I'd head to my neighbour's to borrow!

At this time, I could not find any information about the shelf life of these products. If you do not use them regularly, my suggestion

would be to buy them in small quantities from the bulk food store rather than in the large containers that are sold in the grocery stores.

Cook's note: when your baking soda is getting tired, you can use it as a natural air-freshener in the fridge— it absorbs odours (apparently this works in the litter box as well). It also works well in putting out grease fires (but hopefully you'll never have to find that out for yourself).

Have fun and keep cooking!

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## Crock Pot Borscht

### Ingredients

- 1 lb stewing beef
- 1 pkg fried French onion soup mix
- 1 carrot, diced
- 8 medium beets, peeled and diced
- 1 can (3.5 oz) tomato paste
- 2 tsp dried dill
- 12-16 cups beef stock
- 2 cooking onions, chopped
- 1 1/2 cups green cabbage, chopped
- 2 tsp freshly ground pepper
- coarse salt to taste
- sour cream for garnish



### Method

1. Cut stewing beef into bite-size pieces and trim any visible fat. Put in crock pot.
2. Dissolve onion soup mix in hot beef broth. Start with 12 cups and top up after vegetables are added, to make sure the crock pot is full. Stir in tomato paste until well blended.
3. Add the carrots, beets, onion and cab-

bage. Stir to distribute.  
4. Top up the crock pot with more stock if necessary. Add pepper.  
5. Cook on high for seven hours. Add salt to taste after seven hours.  
6. Serve with a dollop of sour cream on top.

*Cook's note: Instead of using all beef stock when I make the recipe, I used a couple of cups of beet broth. In the fall, when I have cooked beets for pickled beets, I froze several containers of the juice. This adds extra beet flavour to the borscht.*

# A GOOD REASON TO SHOP LOCAL



When asked to name our favorite restaurant, cafe, or shop, we almost always cite a unique local business (look at the results in our Readers' Choice as proof). We embrace the idea of distinctive businesses with local character, but often forget their survival depends on our patronage. It is easy for us to get so consumed by efficiency that we forget how much of our lives we spend eating out, shopping, and doing other business. We owe it to ourselves to consider the quality of our experience, and ask if we benefit when we choose a community-based business. Local owners with much of their life savings invested in their businesses have a natural interest in the long-term health of the community. Community-based businesses are essential to charitable endeavors, frequently serving on local boards, and supporting a variety of causes. Yes, there are some corporate chains that give back to towns in which they do business, but anyone who raises funds for local non-profits will tell you that independents are their base of support. So... support your neighbors... support our community, shop smart... shop our local stores!

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