Standardization of sodium thiosulphate pdf



Technically salt can be any ionic compound formed by reacting an acid and a base, but most of the time the word is used to refer to table salt, which is sodium, but the two chemicals aren't the same thing. Sodium is a chemical element. It is very reactive, so it isn't found free in nature. In fact, it undergoes spontaneous combustion in water, so while sodium is essential for human nutrition, you wouldn't want to eat pure sodium. When you ingest salt, the sodium available for your body to use. Sodium is used to transmit nerve impulses and is found in every cell of your body. The balance between sodium and other ions regulates the pressure of cells and is related to your blood pressure, too. Since sodium you eat or drink has important implications for your health. If you are trying to regulate or limit your intake of sodium, you need to realize the quantity of salt you eat is related to the amount of sodium but is not the same. This is because a sodium ion and a chlorine ion don't weight the same amount. For example, here is how to calculate the amount of sodium in 3 grams of salt. You will notice 3 grams of salt from sodium, nor is half the mass of salt from sodium, so 3 grams of salt does not contain 1.5 grams of sodium: Na: 22.99 grams/mole Cl: 35.45 grams/mole 1 mole of NaCl = 23 + 35.5 g = 58.5 grams per mole Sodium is 23/58.5 x 100% = 39.3% of salt is sodium. Just multiply 0.393 times the mass of the salt and you will have the mass of sodium. While table salt is an obvious source of sodium, the CDC reports 40% of dietary sodium comes from 10 foods. The list may be surprising because many of these foods don't taste particularly salty: BreadCured meats (e.g., cold cuts, bacon)PizzaPoultrySoupSandwichesCheesePasta (usually cooked with salted water)Meat dishesSnack foods Sodium hydroxide (NaOH), or lye, is a common ingredient in many science projects, particularly chemistry experiments, as well as in homemade soap and wine. It's also a caustic chemical, so it's not as easy to find in stores as it used to be. Some shops carry it as Red Devil lye with laundry supplies. It's also found, usually in an impure form, in solid drain cleaners. Craft stores carry lye for soapmaking. There is also food-grade sodium hydroxide, sold in some specialty cooking stores. You can find sodium hydroxide, sold in some specialty cooking stores. your project, you may be able to substitute potassium hydroxide (KOH), which has similar chemical properties and is easier to find. However, these two chemicals aren't the same, so if you make the substitution, expect slightly different results. If you can't purchase sodium hydroxide, you can use a chemical reaction to make it. You will need: Table salt (sodium chloride, nonionized) 2 Carbon electrodes (from zinc-carbon batteries or graphite pencil leads) Alligator clips Water Power supply (such as a 9-volt battery) In a glass container, stir salt into water until it dissolves. Do not use an aluminum container or aluminum utensils because sodium hydroxide will react with and damage them. Place the two carbon rods in the container (do not allow them to touch). Use alligator clips to connect each rod to a terminal of the battery. Let the reaction proceed for about seven hours. Place the setup in a well-ventilated space, as hydrogen and chlorine gas will be produced. The reaction proceed for about seven hours. you can evaporate it off the water to concentrate the solution or obtain solid lye. This is an electrolysis reaction, which proceeds according to the chemical equation: 2 NaCl(aq) + 2 H2O(l)  $\rightarrow$  H2(g) + 2 NaOH(aq) Another way to make lye is from ashes, as follows: Boil ashes from a hardwood fire in a small amount of distilled water for about half an hour. Getting a large amount of lye requires a lot of ashes. Hardwood ash (such as oak) is preferable to softwood ash (such as pine) because softer woods contain a lot of resin.Let the ashes sink to the bottom of the container. Skim the lye from ashes is relatively impure but should be good enough for many science projects or to make a crude soap. To make a crude soap from homemade lye, simply combine lye with fat. Once you have lye, use it in a variety of science projects. You can make a sodium hydroxide solution to use as a base, homemade soap, or water glass for homemade "magic rocks," or try the gold-and-silver "magic" pennies experiments. Salt serves several functions in food (six, to be exact)—as a preservative, to add texture, enhancer. This is why nearly every recipe includes salt on its ingredient list. When cooking, we mainly include salt to enhance the flavor of the food. Salt brightens the foods' flavors and facilitates a balance between sweetness and acidity. But since it is somewhat easy to oversalt and therefore ruin a dish, home cooks tend to under-season, which results in a bland meal. In turn, those who are eating often use a heavy hand with the salt shaker, which doesn't improve the dish and only makes the dish taste salty. When watching professional chefs cook, you will notice they salt (referred to as "season") the food at several stages and not just at the end will add texture as well as another layer of taste. The Spruce / Maritsa Patrinos Salt, or sodium chloride, changes its composition when it comes into contact with water. It breaks down into two parts—positive ion and negative ion—allowing it to deeply penetrate the food and simultaneously draw water out of the food (which is why salt is a component of brining). This twopronged process enhances the food's flavor while preventing spoilage. The salt penetrates the food more slowly when cold but still moves at somewhat of a slow pace when heat is added, creating a more even flavor, which is why it is best to add salt toward the earlier stages of cooking versus just at the end. The sodium portion of salt masks any bitterness by decreasing the sourcess of acid and increasing the sweetness of sugar. By guashing the unpleasant flavors, the favorable tastes are able to come to the forefront, making the cooking process. The instructions may be to include with certain ingredients and then later to "season to taste," or "check seasoning and add salt if needed." It is important to follow this guidance as salt will affect food differently at different stages of cooking. Since salt takes a while to penetrate the food, pulling out its natural flavors, it needs time to do so, hence why adding salt toward the beginning of the cooking process is ideal. Simply adding at the end doesn't provide enough time for the salt to do anything but just add a salty taste. For example, when you salt raw vegetables before they go in the oven to roast, the salt has time to penetrate the food while it cooks, masking its bitterness and bringing out the natural sweetness. Then a sprinkling of salt at the end adds that bit of saltiness that we all crave, complementing the sweet and nutty flavors of the vegetables and meats may differ depending on the recipe you are making. Some may direct you to salt vegetables before adding to other ingredients to remove the liquid from them, as in a coleslaw or cucumber salad. Meat can be a little more complicated as there is a window of time when it is not recommended to salt. Salting meats first brings the juices to the surface, so if you cooked the steak, for example, while there is this salted juice on the outside, the meat would steam, not form a nice outer crust, and be dry inside. However, if you wait several hours, this salting liquid will be reabsorbed, adding flavor and tenderness to the meat. So, you either need to salt meat way ahead of time or salt right before cooking. You will find that some recipes call for a specific type or grind of salt beyond ordinary table salt. In some cases, it will not matter if you use table salt, but in others, it can make or break the dish. Your best bet is to follow the recommendation of the recipe to achieve the desired result. For example, most baking recipes will call for table salt because it dissolves easily, strengthens gluten, and controls yeast growth. process, so it isn't ideal to use when seasoning food. The best salts to add during the cooking process are kosher salt and sea salt. Just keep in mind that these salts are more irregularly shaped than table salt, so the same measurement will result in less kosher and sea salt than table salt and you will need to adjust accordingly. A good rule of thumb is 1 tablespoon of kosher salt equals 2 teaspoons table salt. Finishing salt used to be something only chefs would sprinkle on top of a dish, but now that we have more access to "gournet" ingredients, the home cook can enjoy implementing this flavoring technique. A favorite of chefs is fleur de sel as it is pure in flavor and enhances sweetness, which is why it is used often in desserts. If a recipe simply states, "salt to taste," you may be wondering what a good amount to begin with is. Use this general guide to help you measure correctly and bring out the food's natural flavors to their fullest. 1 teaspoon per 4 cups flour for dough1 teaspoon per 2 cups liquid for cooked cereal1 teaspoon per 2 cups water for boiled vegetables1 tablespoon per 2 quarts water for basides make more of the recipe without salt and add to the first batch. Adding potatoes will remove some of the salt, but not enough to really make a difference.

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