Everything You Wanted to Know About Salt

Table Salt vs Kosher Salt vs Sea Salt

What are the differences between table salt, kosher salt, and sea salt?

Basically, all three salts contain sodium chloride (NaCl). What makes them different? Most culinary experts will tell you “it’s the taste.” Table salt is highly refined and has additives to prevent it from caking, making it free flowing. As well, table salt generally has iodine added (largely due to the iodine insufficiency and resulting thyroid disorder found in landlocked areas). Many people believe table salt has a more metallic taste than Kosher or sea salt, possibly due to the iodine.

Kosher salt typically contains no additives, just NaCl. The grain size is usually coarser than table salt and differs among kosher brands (Diamond Crystal is a coarser grain than Morton's.) Kosher salt can be used in nearly all applications, but it is not generally recommended for baking with recipes that use small amounts of liquid (wet ingredients). If there is not enough liquid, the kosher salt will not dissolve sufficiently, and this can result in small bits of salt in the resulting product; in certain applications this is undesirable. In recipes where there is enough liquid to dissolve all the salt, table salt can be replaced by kosher salt, but the volume must be adjusted.

Sea salt contains many varieties of "salts", the main one being, of course, NaCl. These "salts" are ionic compounds, meaning they are soluble in water (e.g., Magnesium Chloride, Sodium Iodide, Aluminum Sulphate). Sometimes called "impurities," these salts actually mimic, to some degree, the variety of salts in the human body. Sea salt made by dehydrating sea water in the sun will contain many other impurities, such as insoluble things like dirt, dead fish parts, bug debris, etc. Sea salt made by using pure water and filtration methods will contain less impurities, but will roughly be the same in terms of the constituent "salts" if the seawater comes from the same source. The impurities that travel with the NaCl are what make sea salt a different product. They add flavor, which can differ based on the source of the sea salt.

How do you gauge equivalency with the different salts?

When comparing salts, the initial difference will be taste...iodine affected taste in table salt vs. purer NaCl in kosher salt vs. “impurity” effect of sea salt. Grain size will also affect equivalency when measuring by volume: a tablespoon of DC Kosher salt will hold less salt than the same measure of table salt. Also, because of the coarser grain, kosher salt won't dissolve as quickly as table salt (that’s why pickling salt exists...it is a very fine grain salt that will dissolve readily in the pickling solution.) Another advantage to coarser grain salt: It is easier for a chef/cook to pinch up a measure of salt and distribute it over the food.
For those individuals with an inquiring mind, you can gauge salt equivalencies in a very scientific fashion. Simply take five different salts and weigh 1/4 cup of each. Using an Excel spreadsheet, create a table. Using ratios, you can determine how much volume of each salt to use. In a completely theoretical example using just two salts, 1/4 C of the one salt weighs 50 grams. The other weighs 75 grams. Therefore 1 TBSP of the first salt would be equivalent to 2/3 TBSP of the second, because the first salt weighs 2/3 as much as the second salt. Theoretically speaking....

According to a contributor on a cooking website, the following equivalency for kosher salts and table salt is the following:
1/4 c table salt = 1/2 cup Morton’s kosher
1/2 cup Morton’s kosher = 1 cup Diamond Crystal brand kosher

There's no direct equivalency on sea salt because it varies by producer/region of production. Some are definitely milder than others.

**What is the composition of sea salt?**

Sea salt is primarily composed of the following ions listed in order of descending abundance by weight:

<table>
<thead>
<tr>
<th>Ion</th>
<th>Abundance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chloride (Cl⁻)</td>
<td>55.03%</td>
</tr>
<tr>
<td>Sodium (Na⁺)</td>
<td>30.59%</td>
</tr>
<tr>
<td>Sulfate (SO₄²⁻)</td>
<td>7.68%</td>
</tr>
<tr>
<td>Magnesium (Mg²⁺)</td>
<td>3.68%</td>
</tr>
<tr>
<td>Calcium (Ca²⁺)</td>
<td>1.18%</td>
</tr>
<tr>
<td>Potassium (K⁺)</td>
<td>1.11%</td>
</tr>
<tr>
<td>Bicarbonate (HCO₃⁻)</td>
<td>0.41%</td>
</tr>
<tr>
<td>Bromide (Br⁻)</td>
<td>0.19%</td>
</tr>
</tbody>
</table>
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<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Borate (BO$_3^{3-}$)</td>
<td>0.08%</td>
</tr>
<tr>
<td>Strontium (Sr$^{2+}$)</td>
<td>0.04%</td>
</tr>
<tr>
<td>Everything else</td>
<td>0.01%</td>
</tr>
</tbody>
</table>

Although the salinity of sea water varies quite a bit worldwide, the relative abundances of the constituent ions remain the same.

**Salt substitutes**

Salt intake can be reduced by simply reducing the quantity of salty foods in a diet, without recourse to salt substitutes. Salt substitutes have a taste similar to table salt and contain mostly potassium chloride, which will increase potassium intake. Excess potassium intake can cause hyperkalemia. Various diseases and medications may decrease the body's excretion of potassium, thereby increasing the risk of hyperkalemia. Those who have kidney failure, heart failure or diabetes should seek medical advice before using a salt substitute. One manufacturer, LoSalt, has issued an advisory statement that those taking the following prescription drugs should not use a salt substitute: amiloride, triamterene, Dytac, spironolactone (Aldactone), and eplerenone (Inspra).

**One Recipe to Share: Soy Sauce Substitute**

No, it's not real soy sauce. But I think you might be surprised how little you'll notice the difference from the 300 mg or more per tablespoon stuff. This recipe originated from a Better Homes and Gardens low sodium cookbook. It’s okay to make a double or triple batch. It keeps well in the refrigerator.

2 T Sodium Free Beef Bouillon  
2 t Red Wine Vinegar  
1 t Molasses  
1/8 t Ground Ginger  
dash Black Pepper  
dash Garlic Powder  
3/4 c Water

In small sauce pan, combine and boil gently uncovered about 5 minutes or til mixture is reduced to 1/2 cup. Store in refrigerator. Stir before using.
Is sea salt better for your health than table salt?

Answer

from Katherine Zeratsky, R.D., L.D.

Sea salt and table salt have the same basic nutritional value — both mostly consist of two minerals — sodium and chloride. However, sea salt is often marketed as a more natural and healthy alternative. The real differences between sea salt and table salt are in their taste, texture and processing, not their chemical makeup.

Sea salt is produced through evaporation of seawater, usually with little processing, which leaves behind some trace minerals and elements depending on its water source. These insignificant amounts of minerals add flavor and color to sea salt, which also comes in a variety of coarseness levels.

Table salt is mined from underground salt deposits. Table salt is more heavily processed to eliminate trace minerals and usually contains an additive to prevent clumping. Most table salt also has added iodine, an essential nutrient that appears naturally in minute amounts in sea salt.

By weight, sea salt and table salt contain about the same amount of sodium chloride. Your body needs only a couple hundred milligrams (mg) a day to stay healthy, but most people get far too much — mostly from sodium in processed foods. So regardless of which type of salt you prefer, keep sodium consumption between 1,500 and 2,300 mg of sodium a day if you're a healthy adult. People with high blood pressure, African-Americans and anyone middle-aged or older should aim for the low end of that range.