

## How Nigari is Made

Recently various nigari made through different processes have appeared in Japan. Make sure you know what sort of processes there are and what the levels of concentration are before making a purchase.

### The processes of making nigari

Nigari is made by drawing up and letting seawater evaporate by exposing it to sunlight and heat. When seawater or saltwater taken from a saltpan is allowed to evaporate, first of all calcium sulfate (also known as gypsum, which is used in cement and is known to cause kidney stones) begins to crystallize. Calcium sulfate thus needs to be removed.

When the seawater has been reduced down to less than 1/10th, sodium chloride begins to crystallize. Finally, small amounts of magnesium sulfate, magnesium chloride and potassium chloride begin to form crystals. However we don't let the process go that far, because when sodium chloride crystallizes, the liquid at this point contains a large number of minerals such as magnesium chloride, magnesium sulfate and potassium chloride, and is in fact nigari. Nigari has a distinct bitter taste (the word "nigari" is related to the Japanese word for bitterness, "nigai"). In particular magnesium sulfate gives it the bitter taste.

In making nigari, crystals form in the following order:

- Calcium sulfate (gypsum)
- Sodium chloride
- Magnesium sulfate
- Magnesium chloride
- Potassium chloride



### The different ways of making nigari

#### *Sun dried (natural nigari)*

Natural nigari taken from the time-honored process of making salt by putting seawater into a saltpan and letting it dry in the sun. Nigari made by this process still contains large amounts of magnesium sulfate and hence has a very bitter taste. Nigari produced by this process is almost all non-Japanese.

#### *Kettle-boiled (natural nigari)*

Natural nigari taken from the water on top of the sodium that crystallizes on the bottom when seawater is boiled down in a large kettle. Almost all the nigari in Japan is produced by this method.

#### *Reverse Osmosis*

A process used in the making of deep ocean water.

When changing seawater to freshwater the “reverse osmosis” filter is used. With this reverse osmosis filter all the mineral elements as well as the impurities contained in seawater are removed, making this close to pure fresh water. The nigari taken from the reverse osmosis filter is added to this pure water, making deep ocean water. In other words, nigari water.

But this nigari, made from the reverse osmosis filter, is condensed seawater and is extremely high in salt (sodium) content. Rather than call it nigari, isn't this just concentrated sea water, or strong saline? Basically nigari ought to be a solution of condensed seawater with the sodium largely removed, so that the sodium content is 1/5th of the magnesium content. The companies using this type of nigari cannot get it in large amounts so almost all of them either dilute it with water or adjust it by adding powdered magnesium. The right balance of minerals is very important for natural nigari.

### *The Ion Exchange Dialysis Method (natural nigari)*

The ion exchange filter consists of double-membrane filters (80,000 yen each), with each block having 250 filters, there being hundreds of such blocks. Here sand-filtered seawater is ionized with electrical current, removing only the minerals. At this point PCBs, dioxins, poisonous mineral arsenic, mercury, lead and other such substances are removed. Currently no other system is able to deal with PCBs or dioxins. Also, as the salt water from ion exchange dialysis processed seawater contains almost none of the strong bitter-tasting ion sulfates and the calcium and magnesium sulfates do not crystallize out the resulting liquid is easy to drink. Natural nigari made by this process is very high in mineral content, quality, safety and comes with a reasonable price. This nigari is Japanese made.



### ***Others***

Great deals of chemically synthesized nigaris have appeared due to the recent boom of nigari in Japan. There are substances used as coagulants for tofu with calcium chloride and magnesium chloride added, as well as calcium chloride from non-Japanese sources. Magnesium chloride dissolved in water is also being sold as nigari. This is not unrefined magnesium chloride of seawater but simply unrefined magnesium chloride. We don't take particular issue with the sale of unrefined magnesium chloride, but it is an extremely important that real nigari has a good balance of minerals.

As nigari itself is a byproduct of the production of salt and hence not easily obtainable in large amounts, there are retailers who sell it diluted with water. Liquid Nigari has a naturally high level of concentration and so should be consumed 3-5 drops at a time, rather than in spoonfuls. There are also dealers who sell unchanged seawater as nigari. Nigari should have roughly five parts magnesium chloride to one part sodium chloride yet there are some products with nearly three times as much sodium chloride as there is magnesium chloride.

## How to Choose Nigari

With so many different types of nigari available at different prices, how does one choose between them?

Here are some guidelines:



Q What are the main ingredients of nigari?

magnesium  sodium

A

Nigari = "Bittern; a concentrated solution of various salts remaining after the crystallization of salt from seawater." (New Oxford Dictionary of English)  
The main ingredient should be magnesium chloride. The amount of magnesium chloride should be over four grams per 100mls. There ought to be little sodium chloride. There are cases in which sodium chloride is the main constituent, as when nigari is made from deep sea water. However, we employ the ion exchange dialysis method to make nigari, which removes most of the sodium.

Q How do you keep nigari?

at room temperature  refrigeration

A

Nigari is best preserved at room temperature. If placed in a refrigerator, crystals are more likely to form. Nigari mixed with water should also be refrigerated. Nigari is thus convenient to preserve.

Q What method does use to remove dioxins and heavy metal?

The ion exchange dialysis method  other method

A

Only the ion exchange dialysis method removes dioxins and heavy metals. In the ion exchange filters there are extremely fine pores 1/100th of a millimeter (001 microns) small, which allows magnesium, calcium and potassium to pass through but not large molecules such as PCBs (dioxins) or heavy metals (mercury, arsenic, etc.). The result is nigari that is completely free of dioxins and heavy metals.

## **Coping with oceanic pollutants**

Nigari is made from condensed seawater, but these days seawater is increasingly polluted and present a health hazard. In particular, dioxins and heavy metals (mercury, lead, arsenic, aluminum etc.), if not completely removed, may be absorbed into the body. Our company uses the ion exchange dialysis method. The result is nigari that is completely free of dioxins and heavy metals. Our company's mineral-abundant nigari has been made with your health in mind.

## **Why the difference in prices?**

Nigari is after all made from the liquid left over from salt making, and hence not very expensive. As our company mass produces nigari, it is possible to offer low prices. With the current boom in Japan, various nigaris can be seen in the shops and some low priced products have appeared, but as the levels of concentration and production methods vary greatly, we advise you to check the list of ingredients. There are products on sale made from powdered nigari dissolved in water, but powdered nigari is nothing more than magnesium chloride. It is highly important that real nigari contains a balance of various minerals.

## **I've heard that there are diluted nigaris, how about the level of strength?**

There are companies that sell nigari diluted in water, but our company sells nigari in its natural liquid form. There are those who assume that a high price means a high level of strength, but this is not so. Our nigari is comparatively low in price but this is because it is mass produced. Due to production with the ion exchange filters, the tiny-sized ions give an extremely high level of strength. Constituent analysis is also regularly carried out.

## **A difference in service**

As previous customers already know, those who buy our nigari receive a free empty mini portable bottle, as well as a reference sheet explaining in detail the uses of nigari as well as other information about nigari. We began to implement these services after receiving feedback on such points as the difficulty of pouring one drip at a time or not knowing how best to use nigari.

## Production Process of Nigari

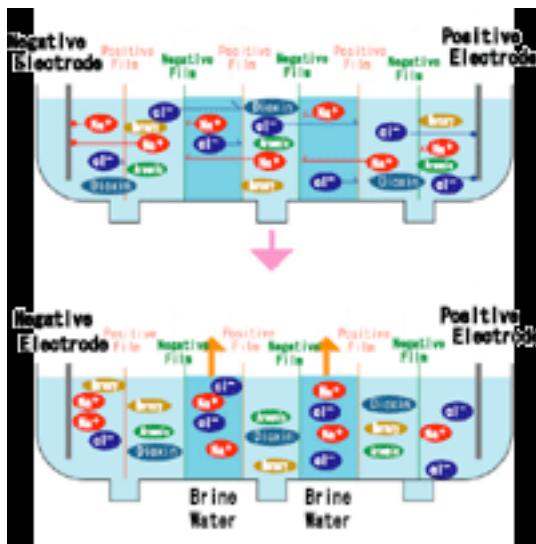
### *The Ion Exchange Filter method of production*

This method employs the ion exchange dialysis method to make nigari. This is a method of filtration using electrodes with several hundred blocks, each containing 250 filters. Three percent of seawater consists of positive ions such as salt, sodium, magnesium, calcium and potassium, as well as negative ions such as chloride, sulfuric acid and so on. After this seawater has been drawn up and sand-filtered, it is put into the ion exchange filter blocks where an electrical current run through it. The sodium chloride in the seawater is separated into sodium ions and chlorine ions. The sodium ions are attracted by the negative electrodes and pass the positive filter but not the negative filter, while the chlorine ions are attracted by the positive electrodes and pass the negative filter but not the positive filter. With filter dialysis, saline with a 23% level of concentration is achieved by letting only the ion salts pass through. The liquid taken from this saline after having the sodium chloride removed is nigari.

### *Treating dioxins and heavy metals*

In the ion exchange filters there are extremely fine pores 1/100th of a millimeter (001 microns) small, which allows magnesium, calcium and potassium to pass through but not large molecules such as PCBs (dioxins) or heavy metals (mercury, arsenic, etc.). The salt water taken from the ion exchange dialysis device contains almost no bitter-tasting sulfuric acid ions, and since calcium sulfate (gypsum) and magnesium sulfate do not crystallize out, flavor is improved. The resulting salt water is processed to form salt crystals in a vacuum style vaporization canister. The remaining liquid with these sodium chloride crystals removed from it is Liquid nigari.

With this filtration/condensation process we use electricity to produce salt water, but we use natural seawater and the safest production process in the world (a process independent to Japan), incorporating no materials that could affect the environment. There is no other process in the world able to deal with dioxins or heavy metals



## How to Use Nigari

### *For Drinking:*

Take nigari as a nutritional supplement, drinking it 5 times a day, “3 drops to 100cc”

Every person is different, so use the above as a guide while searching for the best amount for you. It tastes like slightly salty water, so if you dislike the taste, you can try putting it in coffee, juice or even miso soup.



### *In Cooking:*

Rice: 3 cups rice, 600mls water, 10 drops (0.5cc) nigari

Crispy fried chicken: 300g chicken, 20 drops (1cc) nigari

\*Add seasonings last

Miso soup (for 4): 800mls water, 10 drops (0.5cc) nigari

\*Add with other large ingredients

Beef curry stew: 120ml water, 30 drops (1.5cc) nigari

\*Add with water

Making use of nigari brings out the real flavors of the original ingredients.



### *In the Bath:*

Roughly 1/4-1/2 a cup of nigari (100-180mls) into a standard household bath.

Use nigari diluted to about 1/1000th. Bathing with nigari removes built-up waste matter from your skin.



### ***For Your Skin:***

Pour about 20 drops of nigari into 100mls of water.

As each person's different, experiment to find the right amount for yourself, using the above as a guide. After shaking well sprinkle onto areas of concern. It's best to start using a small amount at first.



### ***How to make nigari mineral water:***

(1) Put 3-5 drops of nigari into a glass (one drop = 0.05cc)

(2) Add 100cc of water or juice and it's ready to drink



About five cups a day is reasonable

For greater mineral absorption, drink nigari with lemon or other citric acid containing substances.

\*As nigari stimulates the blood's metabolism, those with kidney problems should avoid its use.



\*As our company's nigari is of high, natural concentration, the methods of use differ substantially from those of other companies.

***How to drink nigari water (to increase absorption drink with fruits or other organic matter.)***

When to drink: Preferably on an empty stomach

Amount: 180cc

Temperature: 8°

## ***Making nigari lotion***

For sprinkling on the face, arms and legs.

(1) Dilute one part nigari to 100 parts water. Put it into a spray bottle and shake well. Because the strength of nigari can sometimes excite the skin, so start with a high dilution and slowly lessen it.

(2) Lightly spray nigari onto your face or the palms of your hands.

\*Start with a dilution of 1:100 and gradually adjust it to suit yourself.

As it moistens the face and hands so well, nigari water should work well to keep your skin looking beautiful.

Warning: Directions for usage vary with different nigari companies. Read the directions.

## ***Nigari deep cleansing***

Liquid Nigari particles are ultra-fine due to the ion exchange dialysis process. These ultra-fine particles can permeate deeply into the skin. Nigari lather removes skin debris in the pores, because magnesium bonds with skin debris.

The rate of natural cell rejuvenation slows as one ages. Whereas natural cell rejuvenation takes twenty-eight days for a person in their twenties, it takes forty days for a person in their fifties. As longer natural cell rejuvenation slows, the color of one's skin darkens because the keratin layer of the epidermis becomes thicker. Hon Liquid nigari cleansing can remove the excess keratin which plugs up your pores.



# Skin Care



Before using liquid nigari with soap:

1



Make lather with your favorite facial soap.

2



Apply lather to face.

3



Squeeze 5 drops of Nigari onto the remaining lather in your hands.

4



Rub hands gently a few times. (Rubbing too hard will create too many flakes.)

5



Continue to wash your face. Pay special attention to the area around the nose, and to blemishes.

6



You will feel the flakes on the skin, leave on as a nigari-pack for about a minute.

7



Apply new facial soap and wash clean. Oil, bacteria, dirt and excess keratin are removed.

8



Your skin is now refreshed and is smooth as a baby's skin.

## Replenishing your Minerals with Nigari Water

There are so many different kinds of mineral water around it is hard to know which is which, but now you can make mineral nigari water in your own home.



Most of the mineral waters on the market have a high content of calcium, which is necessary for the calcium-deficient people of today. However these types of mineral water are not useful in all cases. For example, if you put mineral waters like these into tea the tannin combines with the calcium and settles to the bottom of the cup. In cooking rice the calcium forms a film over the rice blocking the water from soaking in properly, causing the rice to harden.

But there is a type of mineral water that acts as a supplement but also goes well with tea or cooking rice - mineral water made with nigari. The magnesium in nigari is being called a miracle mineral these days. It is a difficult substance to find in most supplements or mineral waters, but now you can easily make a high-magnesium mineral water by adding quantities of nigari to water. Nigari water works effectively to burn body fat, eliminate waste matter and excess water, remove excess salt and more. Not only does it rid the body of excess water but it also works on the bowels to relieve constipation. The removal of waste matter and backed-up feces from the bowel also leads to better looking skin. Furthermore the minerals not only help the metabolism but also improve the immune system, acting as a barrier to cold, flu and other such external viruses. Taking nigari water together with the citric acid found in fruits works to further increase the rate of mineral absorption.

These days a lot of people are asking which water is good for drinking nigari with. As a result of trials at the nigari research center we have learned that alkali ion water is the most effective against the symptoms of various illnesses. Hence the best water for insuring the spread of minerals to every part of the body is alkali ion water. Many people affected with hay fever who had found nigari with tap water to be ineffective against their symptoms reported that nigari with alkali ion water caused a significant improvement in their condition.

## Adding a little nigari to your cooking will make it taste great!

The magnesium in nigari has great permeability, and whether you're cooking meat, fish or vegetables, the minerals in nigari removes elements that cause bad smells or bitterness, leaving a clear broth.



When you're preparing fish, just add nigari and salt and leave it for 30 minutes. The saltiness penetrates to the core while impurities are removed, allowing you to make lovely, crisp grilled fish. Also, if you prepare fish this way and freeze it, it can be thawed out and used later, still tasting great.

Plus, when making stewed vegetables, stewing them for a long time causes the vegetables to lose shape. This is because the pectin, which holds the vegetables together, is destroyed during the cooking process. The magnesium in nigari will prevent the pectin from being destroyed and also makes the flavor soak right through the vegetables in record time!



Finally, you've heard that using natural salt in cooking improves the taste, but in actual fact this is the nigari in natural salt working to bring out the best flavors! In fact, nigari is poised to become the sixth seasoning, after sugar, salt, vinegar, soy sauce and soy bean paste.





1) Nigari-added water and nigari-less water both boiled in the same style pans on the same heat.



2) Let's experiment by adding pork.



3) We can see that in the left-hand "nigari-added" pan the scum has come to the top leaving a clear soup. On the right-hand "nigari-less" side, the scum is only gradually appearing, being still largely spread through the soup.



4) The nigari-added pan has boiled quickly, with the meat giving off its remaining bad elements as steam-like vapor.

5) The nigari-less pan has yet to boil. The meat is still red, mostly untouched by the heat.

## Mineral Deposits

Something is building up down there.....

Sometimes crystals form on the bottom of the PET bottle. These are called “carnallite” or hydrated potassium magnesium chloride. This is to be expected with natural nigari – in fact, their non-appearance would be a sign that the nigari was not natural. The crystals are more likely to appear when the temperature drops, which is why we recommend storing it at room temperature. Sedimentation is likely to occur in winter if you store it in a place with varying temperatures.



Is it safe to use?

It is not harmful as such, but due to the high concentration of the crystals, licking or drinking them can cause the body to over-absorb too many minerals, so we recommend either removing it at last or using it as bath salts.

For a normal size bath we recommend 100-180cc (1/4-1/2 cup), but since in this case there is a higher concentration, please use slightly less. Your skin will feel soft and moist after a bath with this! For your winter baths, nigari is just the thing.

## Ishigaki Island Liquid Hon Nigari

From Okinawa, Japan



Highly concentrated. With PCBs (dioxins) and heavy metals such as mercury arsenic and lead removed, Natural Nigari is completely free of impurities. Safe and packed full of minerals.

Item # 99004  
Masu Liquid Nigari .52 Gallon \$ 35.99

Item # 99007  
Masu Liquid Nigari 120ml/5 Oz. \$ 11.79

Purchase at [www.simply-natural.biz](http://www.simply-natural.biz)