

SakeOne-01

Understanding Sake



**Not as complicated,
but more important,
than you might
think.**

Myths To Squash



1. Sake is not distilled.

a) It is brewed, similar to beer.

2. Sake is not only served hot.

a) Premium sake is best served chilled. Hot sake is typically cheap liquid.

3. Sake is not only for Japanese food.

a) Premium sake pairs incredibly well with a wide range of world cuisines.

4. Sake is not only made in Japan.

a) Premium sake is made in Japan, the U.S., Australia, and British Columbia.

5. Sake is not only for Japanese/Asian accounts.

a) French, Italian, BBQ, South American restaurants are adding sake.

Myths To Squash

6. Sake is best served in square wooden cups or little shot glasses.

- a) The best vessel for serving sake is a wine glass. The Masu, or square cup, is a nice piece of history and tradition but it does nothing for the sake.

7. Sake is for dropping into pint of beer.

- a) Sake bombs are for chugging beer, not enjoying sake.

8. Sake is hangover free.

- a) Sorry but anything with alcohol in it that is consumer in copious amounts is going to cause a hangover. Sake just happens to be easier on you.

9. Sake is wine.

- a) Nope, it's sake. Sake. Sake.



Is It Beer or Wine?

Saké purists will say that saké is saké. It is not wine or beer. It is its own unique beverage and deserves its own identity. That is certainly true, but in a world that is trying to understand saké, it is not easy to be so definitive and may not be a good idea.



Saké is like beer in that it is a brewed beverage made from a grain (rice), water and yeast. Unlike beer, or spirits, the grain is not malted to convert starch to sugar and no hops are involved.

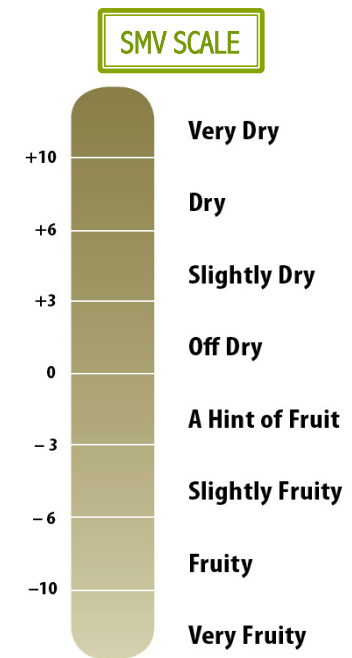
The finished beverage is like grape wine and often carries some similarities in flavor. While purists would also have you sipping saké from traditional o-chokko's (little shot-like cups), saké, like wine, is best experienced from stemware. Any white wine glass will do, however, there are saké specific glasses made by such companies as Riedel.

Bone Dry – Fruit Sweet

Like wine, saké can be bone dry with steely crisp apple and pear notes or sweet and fruity carrying tropical and stone fruit flavors. Aroma can range from faint citrus to deep earthy floral sweet tones.



Saké is not measured by residual sugar but on a scale that measures the density of saké compared to water. This scale is called Saké Meter Value (Nihonshu-do for those who speak Japanese), or SMV, and is found on most labels showing a plus or minus number. The higher the positive number the drier the saké. The lower the negative number the sweeter the saké. While the SMV number provides a glimpse at sweetness it can be misleading due to the flavor impact of acid, water hardness and temperature. A saké can be rated a +6 but taste fruity and somewhat sweet, what you might consider a -2. Use the SMV scale as a guide but be sure you taste the saké to be sure you know if it is dry and crisp or fruity sweet.



Handling Sake

Saké should be stored in a cool dark space with little temperature fluctuation. Actually, the colder the better down to freezing. Cold storing slows the aging process and allows even unpasteurized saké to hold up longer.



Don't age it in the typical wine cellar and don't hold it for years thinking it may improve. Saké is bottled ready to drink. Saké is best enjoyed young and has a 12 – 18 month shelf life if not stored cold. At about a year, saké begins to show more rapid flavor changes as it gets more earthy and mushroomy in aroma and flavor with an increasingly dense body. It's not going bad but is changing from the expected.

To Be Hot Or Not To Be Hot



American's, with a brief saké history, are accustomed to it served hot in the little pitchers (tokkuris) and cups (o-chokkos). They are accustomed to drinking it fast, like a shot and not really thinking about its flavor. What they don't know, is that their hot saké is bulk, cheap, mass produced and if not hot, probably doesn't taste too good. Think bulk, box wine – the cheapest of the jugs. While in Japan there are some styles that are wonderful when served warm in the winter, very few are available in the states.

The premium saké of today is best served chilled, not ice cold, but chilled. About where you'd serve your Pinot Gris, or Sauvignon Blanc (48 – 55 F). As you taste various saké start them out cold, then let them warm in the glass and taste as it warms. The flavor will change and the ideal point for presentation will be clear. Note this and show each saké at the temperature you find the most flavor present.

Serving Sake



We've already established that the best vessel to sip saké from is a wine glass. While we would like to stand firm on that as the only way to serve saké, we do understand that many restaurants want an authentic vibe to their presentation. For that, the Tokkuri (pitcher) and o-chokko (little cup) are the best method. For special presentation they may want to consider a masu cup (square cup).

It is important to talk about the serving options with your account. Some, like many of the non-Asian restaurants who are adding saké, may find the cost of the traditional vessels prohibitive to adding sake to their list. They need to know that they already have the best drinking vessel for saké; their wine glasses. No further investment needed except the saké.

To Bomb Or ‘Tini

The lack of understanding saké, combined with our penchant to innovate and explore, has brought about some interesting concepts like the sakétini and the saké bomb. One is viable, the other simply sad from a saké enthusiast’s perspective.



Sakétinis evolved as a means to get Americans to drink saké in any form possible. Sakétinis were a tasty and easy option. Some wonderful cocktails were created and today we find the nation’s leading mixologists promoting the idea due to the lower alcohol, calorie and glucose option. We have found that saké adds character (body & flavor) to a cocktail with spirits and when mixed in balance with fresh fruit and herbs, the saké flavor becomes a delicious component of a cocktail. Properly made sakétinis are about balance and respect the nature of saké.

Dropping a “shot” of saké into a pint of beer (saké bomb) with a ritual of chanting is fun for a youthful crowd. It is not, however, about drinking saké – more about drinking beer, fast. Some accounts promote saké bombs because they are profitable. We’ll not take that away, but promoting responsible, appropriate consumption is a priority to moving saké forward in America.

Drink sake, not bombs.

The background is a solid green color. On the left side, there are several overlapping circles of varying shades of green, creating a layered effect. The circles are positioned vertically, with the largest one at the top and smaller ones below it.

Saké Brewing

A peek into the process of brewing saké.

Saké is brewed from rice (no other grain) with water, yeast and koji being the only other ingredients. What makes it very unique in the realm of beverage are two things:



Uniqueness

- **Koji:** *Aspergillus Oryzae* – a mold that is applied to the rice grains.
- **Multiple Parallel Fermentation:** Saccharification and fermentation taking place at the same time.

Rice, the foundation of saké, comes in many varieties but, like grapes are to wine, only a few are good for brewing saké.

Varieties have been cultivated for centuries and today there are about a dozen that are highlighted for saké brewing due to their hardness (impacts milling), aroma and flavor.

Regional varieties of rice differ and are the source of local pride, allowing a sense of terroir.

It is important to know the variety of rice used in the saké you drink but not critical. Back labels & brochures are sources of rice clarity.

Names that you will most commonly see include Yamadanishiki, Gohyakumangoku, Akita Komachi, Miyamanishiki, etc.



Rice





Polishing aka Milling

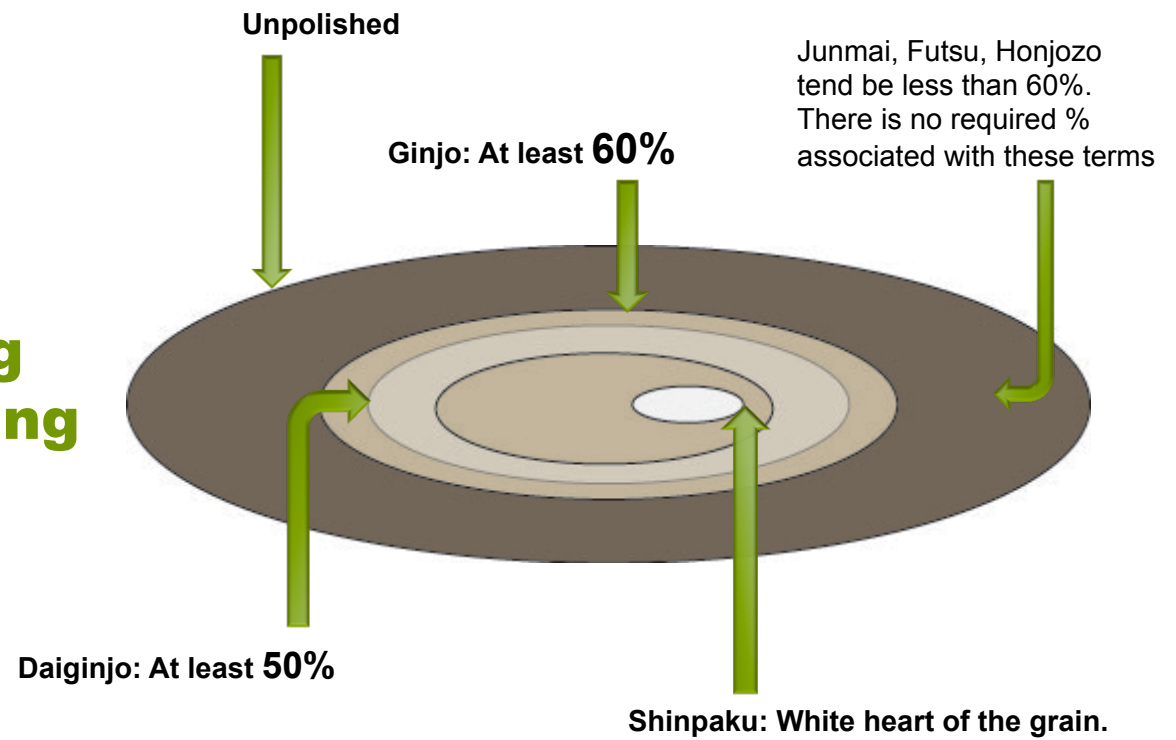
Once rice is harvested and the hull removed, it is up to the brewer to define how much of the grain they want polished off. It is here that saké quality is measured, by how much of the grain is kept.

Specialty millers manage the polishing process to the exacting standards of the brewer. A key goal is to minimize cracking and breakage of the grain which will negatively impact the Koji process by allowing Koji mold to grow too quickly into the grain.

Milling/Polishing in another term: *Seimaibuai*.
The Japanese term shows up frequently today so don't be caught off guard. Seimaibuai = Milling/Polishing.



Polishing aka Milling



Once the rice is polished it must be washed to remove all residual flour.

Next, the rice gets a good soak. The length of soaking time is defined by the rice strain and water saturation goals. A stopwatch is used to be precise in timing down to the millisecond. Such precision is necessary to ensure to maximized koji growth and penetration into the grain.



Washing & Steaming



The final step in prepping rice for either Koji or straight to brewing, is to steam. This is done at about 195° Celsius in either a belt steamer or kettle. If in a kettle, the rice is separated from the steel with thick cotton cloths and carefully layered to allow the steam to find its own path allowing for even steaming. A belt steamer moves the rice through a flat pressure steamer and provides even, steady steam for enhanced quality.

Once upon a time in a not too distant past, a critical step in making saké was to chew the rice and spit it into a bucket. This gathered enzymes that aided in breaking down the grain.

Thankfully, that step is no longer needed but the process of making koji is still considered the most sacred step in production.



Koji
Aspergillus Oryzae



Enter Koji (*aspergillus oryzae*), a mold that grows on the steamed, but cooled, rice and in doing so digests it with enzymes that convert the starch into sugars.

Koji spores are applied to the steamed rice which is then carefully managed with temperature and humidity controls. Slight shifts in temperature, length of time, or humidity can mean the difference between perfectly fragrant and rich yeast food and old smelly sneakers.

Koji also adds a good deal of flavor to saké.

Like beer and wine, saké needs yeast to ferment. It is to create food for the yeast that rice is polished, washed, steamed and covered with Koji. In doing this we convert the hard grain into soft, sweet kernels, perfect for consumption by yeast.



Yeast

There are about 14 commercial yeast strains available to brewers. Each has its own aroma and flavor profile and interacts with the rice in different ways. Yeast is selected for the desired end result.



Some of the older brewers in Japan also use proprietary yeast that has been cultivated at their kura for decades or centuries. This provides the kura with uniqueness and when combined with local rice and water provides a definition of terroir for saké.

It might seem obvious that water is a necessary ingredient since rice has no juice to press out, but it is often overlooked. Sake is about 80% water.

Ideal brewing water is low in minerals with little to no iron. Iron will cause saké to darken and create undesirable aromas and flavors. It is also known to hasten the aging process.



Water



Manganese interacts with light causing saké to become discolored and dampen the overall look and character.

Good elements in brewing water include potassium, magnesium and phosphoric acid. These aid propagation of yeast and development of Koji.

The flavor of the water is also very important as the water used in brewing is also used in diluting sake. A majority of all sake is diluted to reduce alcohol and mellow flavors.

The first place that steamed rice, Koji rice, yeast and water come together is the moto tank (first tank).

Here, yeast begins to feed on the sugars and starches and the natural processes begin to do their thing.

After a few days, the moto is added to a larger brewing tank where more Koji rice, steamed rice and water is added as desired.

The sakémaster's role now is to carefully manage brewing temperature, food and time. A brew that is too warm will go to quickly, one that is too cool will be slow and could stop short of desired alcohol levels. Manipulating temp and time will help define flavor and body in the finished saké.



Moto & Brewing



The Magic Of Multiple Parallel Fermentation

In beer or winemaking, saccharification and fermentation are sequential, but in sake, multiple steps take place at the same time – **Multiple & Parallel**. This is because the koji rice is in the fermenter at the same time as the yeast, both are functioning simultaneously. What is magical is that the enzymes are slowly releasing sugar to the yeast, which is in turn slowly eating the sugar. This natural management process allows the yeast to digest sugars over time instead of rapidly, therefore allowing alcohol levels to be much higher than beer or wine. Saké actually has the highest fermented alcohol level of all fermented beverages.



Moto & Brewing



Unless the saké is to be “**Nigori**,” the remnants of brewing need to be removed.

As noted, real old school pressing is simply allowing it to free run from a hanging cloth sack. This is called “**Shizuku**,” or free drip.

“**Funashibori**” is another old traditional style using a wood box filled with sacks of saké mash that are pressed with weight. There are three phases of this style. The first being “**Arabashiri**,” where saké flows freely from the sacks. “**Nakadori**,” is drawn from the first press. And, “**Seme**” is the last of the saké drawn out by hard squeezing to get the last drop.



Pressing



The **Yabuta** press is a modern machine that pumps the saké through screens that catch the sediment and clarify the saké. About 90% of all saké is pressed this way. Also known as “**Asakuki**.”



Filtration

For saké, filtration is very much like the fining process in winemaking. The heavy bits have been removed leaving a fairly clear liquid but retaining small bits that can cause the liquid to be hazy. To remove this, an optional charcoal filtration is implemented. This stage is referred to as “**Orisagé,**” and is used to strip out particulates and coagulated proteins. Filtration may be done multiple times depending on the need or desired impact. This process can also remove desirable flavors so it’s use is managed carefully.

Muroka is a style of saké that has not been filtered. It is often hazy, yellowish and to old ideals it less than perfect. To Western standards it may taste richer and fruitier compared to it’s filtered version.

Long before Louis Pasteur “invented” pasteurization, Japanese saké brewers were heat treating their brews to stabilize them and make sure they would not go bad too quickly.

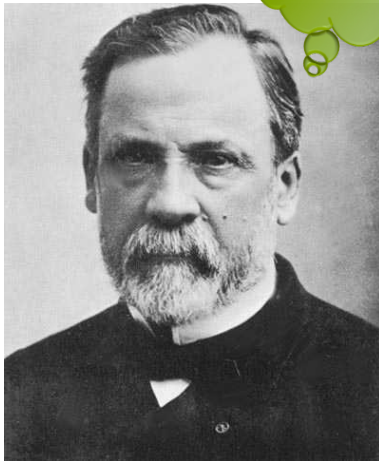
Today, saké is typically pasteurized twice, once after filtration and once at bottling. Some high-end saké are bottled between pasteurizations and then pasteurized in bottle.

This step allows saké to be stored for longer periods of time. Without this process it would quickly change in flavor and density.



Pasteurization

Louis
Who?





Pasteurization

Variations of the Theme

Raw, unpasteurized saké is “**Nama**” (technically speaking it is Hon-Nama). If stored cold, it can age gracefully for several years. At room temperature, it changes rapidly and ends up earthy, overly nutty and off-tasting. Nama is a dynamic style that is often more dense in body, fruitier, sweeter and a bit effervescent.

Nama Chozo or **Nama Zumé** have had a single pasteurization. They can be stable for months but are best drunk young.



Maturing

Once sake is brewed and pressed it is held in large stainless steel tanks until bottling. The length of time sake is stored is defined by the desired flavor profile.

Young sake (1-3 months) tends to be more fruity, sweet and fresh tasting. Sake with some age (4-6 months) begins to balance and have a more streamlined profile. Additional aging brings out an earthiness that is accentuated with hints of mushrooms.

Various approaches will have sake aging at sub freezing temperatures for years at a time. This keeps a fresh fruity profile but brings in a subtle aged appeal.

Aging is defined by the desire of flavor and body and varies by style, brewery and brewer.

Standard Japanese bottles are 720 ml and 300 ml with a large format bottle as a 1.8 L.

In the U.S., saké is bottled in the standard wine size of 750 ml but then it varies with both 300 ml and 375 ml being offered and some 1.8 L options.

While there are some standard sizes, saké is also found in 180 ml, 200 ml, 500 ml bottles, aseptic boxes, large 18 L boxes (mostly for restaurants).

There is currently a trend in 300 ml bottles both on and off-premise as this size helps facilitate sampling and allows larger saké lists/sets.

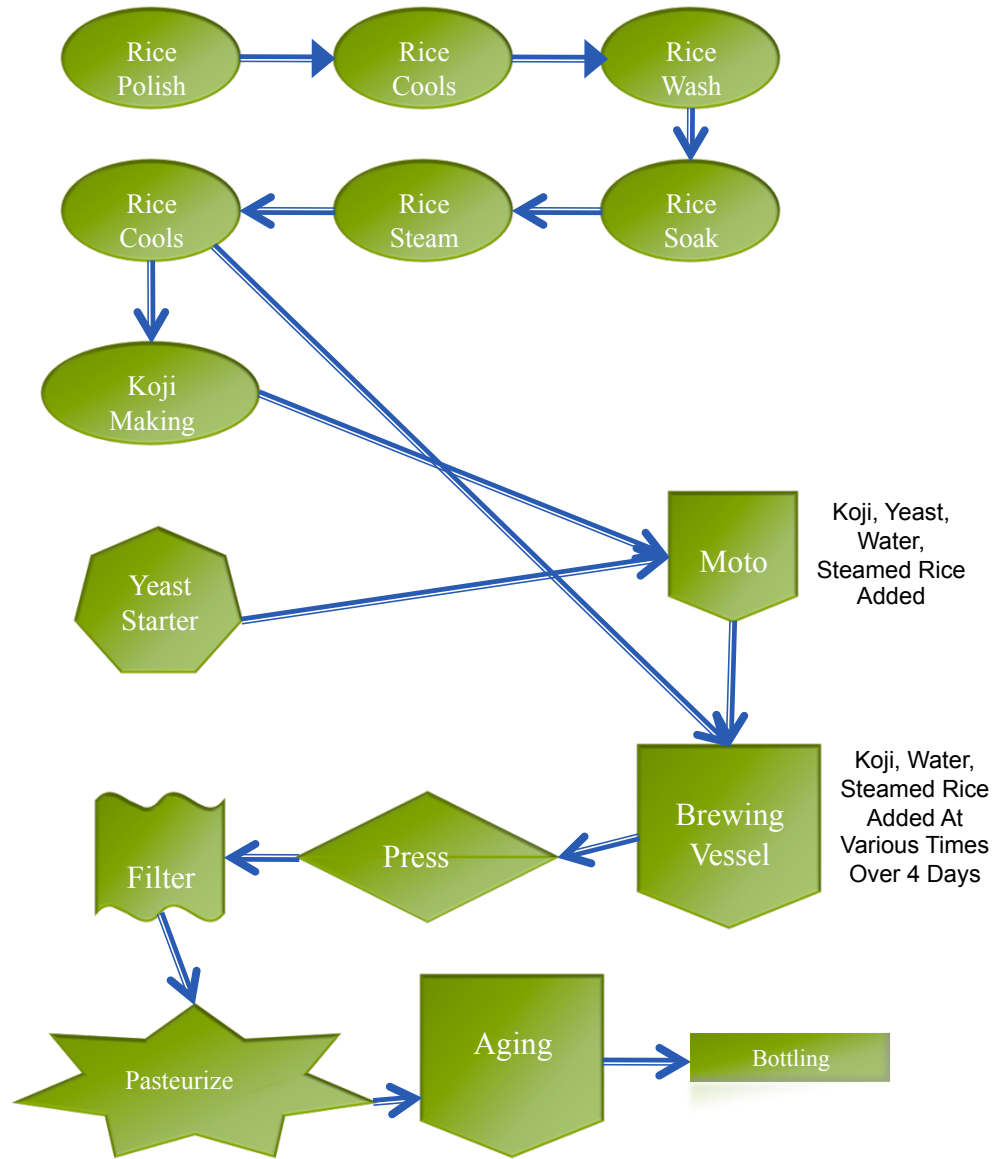


Bottling





The Flow

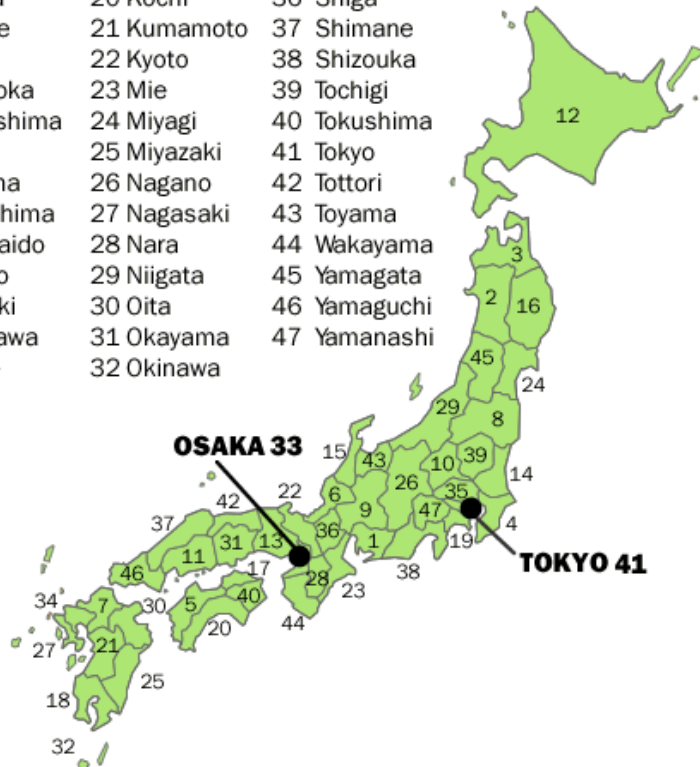


Quick Summary Of Brewing



- Rice is polished to desired amount remaining.
- Rice is washed, soaked and then steamed.
- Koji spores are added to steamed rice and the mold is allowed to grow on the grain, converting starch into sugar.
- Koji rice, steamed rice, yeast and water are added to a moto tank for the first brew.
- A finished moto is added to a larger brewing vessel to which more Koji rice, steamed rice and water are added.
- After brewing, the saké is filtered and pasteurized, generally twice.
- Bottled and ready to go.

- | | | |
|--------------|--------------|--------------|
| 1 Aichi | 17 Kagawa | 33 Osaka |
| 2 Akita | 18 Kagoshima | 34 Saga |
| 3 Aomori | 19 Kanagawa | 35 Saitama |
| 4 Chiba | 20 Kochi | 36 Shiga |
| 5 Ehime | 21 Kumamoto | 37 Shimane |
| 6 Fukui | 22 Kyoto | 38 Shizuoka |
| 7 Fukuoka | 23 Mie | 39 Tochigi |
| 8 Fukushima | 24 Miyagi | 40 Tokushima |
| 9 Gifu | 25 Miyazaki | 41 Tokyo |
| 10 Gunma | 26 Nagano | 42 Tottori |
| 11 Hiroshima | 27 Nagasaki | 43 Toyama |
| 12 Hokkaido | 28 Nara | 44 Wakayama |
| 13 Hyogo | 29 Niigata | 45 Yamagata |
| 14 Ibaraki | 30 Oita | 46 Yamaguchi |
| 15 Ishikawa | 31 Okayama | 47 Yamanashi |
| 16 Iwate | 32 Okinawa | |



- Diversity of flavor and character is often defined by region, or more precisely by Prefecture. Each Prefecture has variation in rice, water, climate and yeasts. In many cases, Prefecture distinction is a source of pride and carries a seal of quality like the “Niigata OC” which defines ingredients and style. It was once said that, in general terms, saké brewed in the North is light and mellow while saké in the South is big and hearty. This is a rule of thumb and does not always hold true.



US Brewing



There are currently (Dec. 2009) six saké brewers in the U.S. (4 in California) with a majority of production being focused on the hot saké market. The first sake brewpub, Moto-I, opened in Minneapolis in 2008 and 2011 saw the opening of Texas Sake Company in Austin.

One Japanese brewer, Takara, has stepped up to produce a more diverse portfolio while SakéOne in Oregon began as a premium producer of Junmai Ginjo styles. It is from the efforts of SakéOne that craft saké, flavor infused saké, Genshu and Nigori styles have been elevated to prominent categories. Today, SakéOne's Momokawa Diamond is the leading Junmai Ginjo and Momokawa Pearl the leading Nigori Genshu. Their infused Moonstone brand leads its niche while G Joy dominates the Genshu category.

Storing Sake



Sake is bottled for consumption, not for aging. Unlike wine, more like Scotch.

However, unlike Scotch, sake does not hold up for a long time in the bottle, maybe 12 – 18 months at average room temperature. Longer if stored cold.

So, it is again, beer like. Freshness matters and buying to consume within a short amount of time should rule purchasing patterns. Should you choose to store it, put it in the fridge. If you put it in the cellar with your wine and allow it to age for a few years it may be better to simply leave it there. A recent tasting of a 5 year old, cellar aged, sake was an unpleasant event. What once once a great bottle of sake had gone very bad. A similar tasting of a 10 year old sake that was cold stored presented a very pleasant and surprising evening.

Stylistic Diversity



One of the least common things known about sake is that a single batch can be managed in dozens of ways to end up with dozens of styles. From one Junmai Ginjo could come a Nigori, a Yamahai, Shiburitate, Shizuoku, Genshu.....It's simply amazing.

Sake has 7 categories and from these come thousands of styles.

Luckily there are a set of core styles to focus on.

Classification



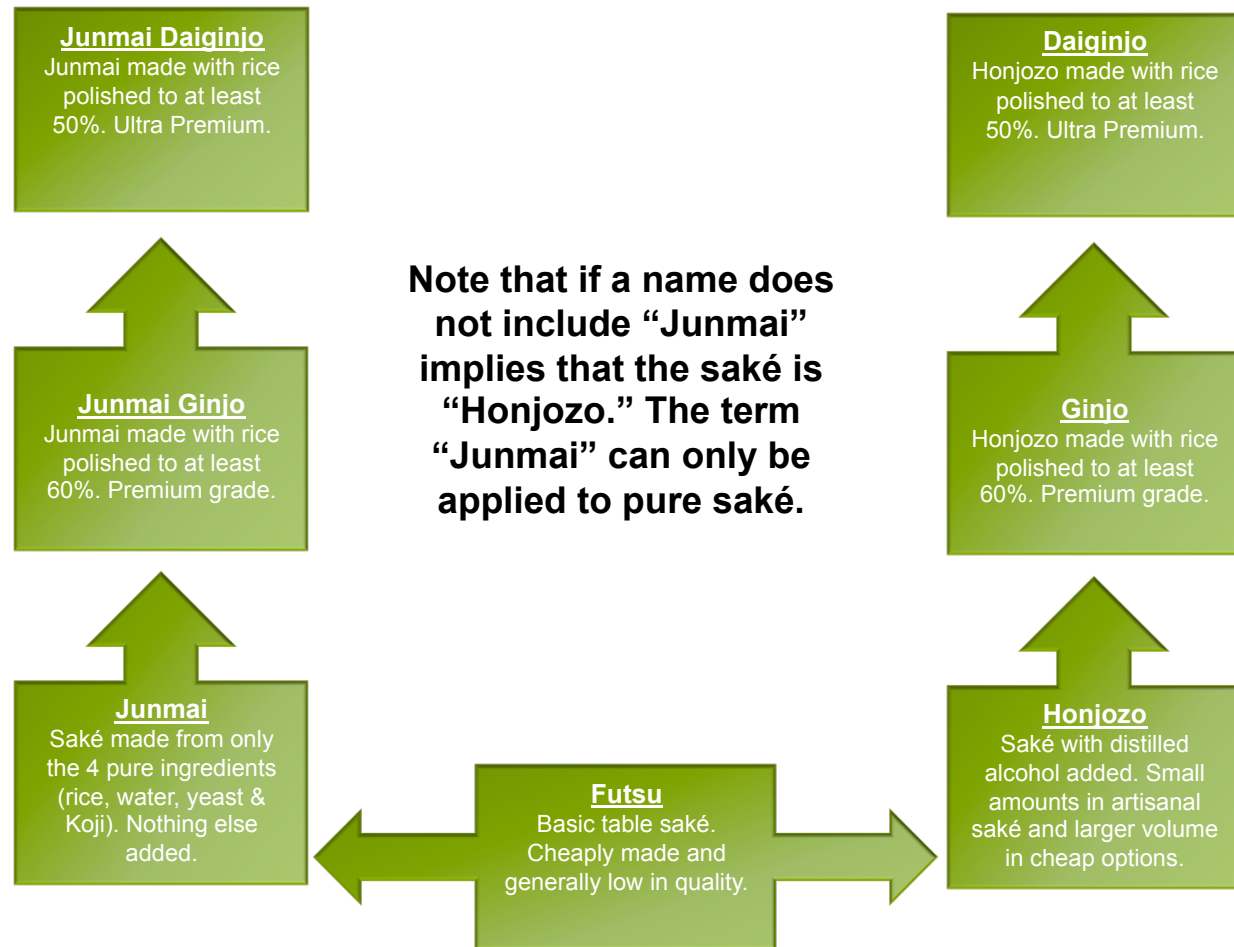
- **Futsu (Foo-tsu):** Basic, table sake made quick and cheap. Think bulk, industrial box wine.
- **Honjozo (Hon-jo-zo):** Sake that contains any amount of added spirits. Can be very little as in the case of artisanal sake or can be a large quantity as in the case of Futsu.
- **Junmai (June-my):** Pure sake, containing only rice, water, yeast and koji. Quality and flavors vary greatly.
- **Ginjo (G-in-jo):** Sake made from rice that is polished/milled to at least 60% of its original size. Has added spirits in small amounts.
- **Junmai Ginjo:** Sake made from rice that is polished/milled to at least 60% of its original size. Nothing added.

Classification



- **Daiginjo (Die-gin-jo):** Sake made from rice that is polished/milled to at least 50% of its original size. Has added spirits in small amounts.
- **Junmai Daiginjo:** Sake made from rice that is polished/milled to at least 50% of its original size. Nothing added.
- **Ginjo and Daiginjo can be either Honjozo or Junmai.** A label that does not state “Junmai” is Honjozo which is rarely stated on the label.

Sake Classification



Stylistic Variation



- **Infused:** An American addition but slowly showing up in Japan. Simply means flavor added whether as raw fruit or flavor concentrate.
- **Karakuchi:** Dry or very dry.
- **Genshu:** Undiluted.
- **Nama:** Raw, unpasteurized.
- **Nigori:** Partially filtered. Literally means “cloudy”

Stylistic Variation



- **Organic:** USDA certified organic sake is important in today's marketplace.
- **Shizuku:** Saké filtered by allowing it to slowly drip from cotton bags with no pressure applied. Often found with Daiginjo.
- **Tanrei:** Light clean and crisp style.
- **Tokubetsu:** Designates a “special” saké. Often made with rice milled more than standard.
- **Yamahai:** Lactic acid is allowed to interact with the yeast during fermentation leading to more wild and gamey flavors.

Putting A Name Together

The sake name is a string of descriptors that define what is in the bottle. By understanding the classifications and the main styles you can easily know what each saké is. Be careful though, not all terms go together like Junmai Honjozo, or Shizuku and Funashibori. Can't have both in one saké.



Junmai – Ginjo – Nigori – Genshu – Yamahai