



Distilled Spirits Aotearoa (NZ) Incorporated

Certificate of Incorporation: 2716891

Registered office: 16d Sunley Street, Westown, New Plymouth 4312, New Zealand

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## ***Distilled Spirits Aotearoa – Frequently Asked Questions***

### **Alcohol Legislation, Testing and Chemistry – as at November 2022**

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#### Calculator to convert kilos of water/ethanol mix to litres

An Excel calculator with alcohol weight to litres with adjustable kg and abv as required fields.

[Ethanol- Water- Mixtures - Steffen's Chemistry Pages \(science-and-fun.de\)](http://www.science-and-fun.de)

#### Measuring the alcoholic strength of a liqueur

How do I measure and prove the alcoholic strength of a liqueur I am wanting to manufacture? The liqueur will be made from a neutral cane spirit with a known ABV. For the purposes of bottling and excise duty, can the final products ABV be calculated or will each batch of product need to undergo a lab test?

Opinion: We haven't found anything written down about frequency of testing. We think the key thing here is that you need to understand where the critical control points are in your process and



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have the records and systems in place to control variability. Based on the assessment of your process you can make the call as to where and how often you need to test. You record this method in your management plan and training material:

All distilleries need to be registered under the Food Act 2014. National Programme 3 is for medium-risk food businesses including manufacturers of alcoholic and non-alcoholic drinks.

<https://www.mpi.govt.nz/food-safety/food-act-2014/national-programmes/steps-to-national-programme-3/>

You will need to: 1. Create a food plan, following good safety practices, with written records. This includes batch tracking and complaint handling. 2. Engage a verifier from your local council or an independent agency 3. Register with MPI or your local council 4. Have the verifier do an audit. You need to renew your registration every 2 years

You need your test records if challenged for excise duty payments

### What is difficult with Liqueur testing?

With respect to Liqueurs, because of all the additional solids (sugar, fruit etc) the only way to accurately test is by distilling all the alcohol out of the liqueur, then testing the distillate for ABV and calculating back by volume to the initial ABV.

However if the liqueur is simply made by mixing a certain volume of ethanol with sugar and a flavour then it should be able to be calculated accurately by the volumes going in. It's only an issue that needs testing if you are making an infusion where the fruit or whatever might absorb some alcohol and change the original ABV which you then can't measure by the normal Hydrometer methods because of the solids in the infusion... We test our infusions (1/batch) by distilling a sample and then adjust the final ABV from the test result... We don't retest the final product, we rely on the calculations for that.

### Test Equipment for alcohol

The bottle label statement you make must be accurate to within 0.5% alcohol by volume; (See Section 2.7.1)

<https://www.legislation.gov.au/Details/F2020C00723>

If you go over 0.5% for too long and Customs & Excise picks up on it, you may need to change your label declaration or you may be prosecuted.

You need to measure to 2 decimal points for Excise, using a reliable calibrated instrument – best is something like an Anton Paar, if you have funds to move up from a hydrometer.

<https://www.anton-paar.com/us-en/products/details/snap/>



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To save lab costs for liqueurs maybe you can set yourself up with distillation equipment.

Your NP3 plan should indicate what you do if your test results are not expected (out of specification), especially greater than +/- 0.5% of your label declaration. It's always a good idea to keep a retention sample from each batch in case you have complaints/ excise queries/ want to keep an eye on your physical stability.

## Standard Drinks Calculation

The calculation for standard drinks is  $0.789 \times \text{the alcohol content} \times \text{the volume of the container}$  (in litres). Rounding for less than 10 standard drinks must be declared to 1 decimal place. Rounding for more than 10 standard drinks must be declared to the nearest whole number.

## Volume of Spirits that can be served in a large jug etc

Spirits NZ obtained legal advice (Nov 2021) on the serving of spirits in jugs or carafes at a table, as part of the Spirits Normalisation project. In summary: the service of a spirit in small vessels (under 500ml) with a secondary vessel (exceeding 500ml but without spirits) would not offend the law.

The interpretation of Section 254 of the [Sale and Supply of Alcohol Act 2012](#) (2012 Act) is that premixed cocktails or similar below 23% ethanol by volume could be served in vessels over 500ml. This would be products premixed by a manufacturer, not those premixed by an on-licence retailer. Having said that, if issues arise with behaviour of patrons at premises that are adopting this practice it could be prohibited by the 2012 Act.

However, it is generally accepted that spirits (mixed or not) cannot be served in vessels over 500ml, and therefore volumes (as above) >500ml has not yet been challenged in court.

Background:

Section 169 of the [Sale of Liquor Act 1989](#) (1989 Act) states:

169 Sales of spirits otherwise than in a glass

- (1) Every person commits an offence and is liable on conviction to a fine not exceeding \$2,000 who, being the licensee or a manager of any licensed premises or an employee of the licensee, sells or supplies any spirits to any person, for consumption on the licensed premises, otherwise than in a drinking vessel of a capacity not exceeding 500 millilitres.
- (2) Subsection (1) does not apply to the sale or supply of any spirits to a person who is a lodger on the licensed premises for consumption in that part of the licensed premises in which that person lodges.

Section 254 of the Sale and Supply of Alcohol Act 2012 (2012 Act) [This act is intended to capture straight spirits and spirits mixed at the time of service] states:



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### 254 Sales of spirit in vessel exceeding 500 ml

(3) The licensee or a manager of any licensed premises, or an employee of the licensee, who sells or supplies any spirit to any person, for consumption on the licensed premises, in a vessel exceeding 500 ml commits an offence.

(4) A person who commits an offence against subsection (1) is liable on conviction to a fine of not more than \$2,000.

(5) Subsection (1) does not apply to the sale or supply of any spirit to a person who is a lodger on the licensed premises for consumption in the part of the licensed premises in which that person lodges.

The Sale of Alcohol text states:

“A “vessel” is simply a hollow container used to hold liquid. That, in the context of this section, will include glasses, jugs, bottles and yard glasses, amongst other containers used for consuming spirits on the premises in question. The section is aimed at the quantitative sale in excess of 500mls for on premises consumption.”

The 2012 Act has the following definition of “spirit” in section 5:

“... any whisky, brandy, rum, gin, vodka, and tequila, that contains at least 23% ethanol by volume measured at 20°C, produced by distillation of fermented liquor derived from food sources, so as to have the taste, aroma, and other characteristics generally attributable to that particular spirit.”

### Irresponsible promotion of alcohol – free giveaways and prizes

There is clear legislation around spirits giveaways, competitions, and prizes, remote sales of alcohol and advertising.

The Sale and Supply of Alcohol Act 2012 describes the various ways alcohol is irresponsibly promoted.

- Anything that encourages, or likely to encourage, people to drink excessive amounts of alcohol either in a licensed premises or any other place.
- Promotes or advertises alcohol discounts of, or gives the impression of discounts, 25% or more below its ordinary price.
- Promotes or advertises alcohol that is free of charge.
- Offers any other goods or service on the condition alcohol is bought.
- Promotes or advertises alcohol in a manner aimed at, or has special appeal to, minors.



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- Under the Gambling (Prohibited Property) Regulations 2005 it is an offence to offer or use alcohol as a prize for gambling activities, for example raffle prizes. It is prohibited to offer goods and services or the opportunity to win a prize on the condition that alcohol is bought.

It is also an offence to allow someone to become intoxicated on your premises

Local licensing officers are likely to keep tabs on your social media and pull you up for advertising and supply infringements.

Links:

[Sale and Supply of Alcohol Act 2012 No 120 \(as at 12 April 2022\), Public Act 237](#)  
[Irresponsible promotion of alcohol – New Zealand Legislation](#)

[Alcohol Resources — Sale and Supply of Alcohol Act 2012](#)

[Sale & supply of alcohol | New Zealand Ministry of Justice](#)

[nzw-guidance-on-advertisement-and-promotion-of-alcohol-at-alert-level-3-and-4.pdf](#)  
[\(nzwine.com\)](#)

## Sampling Plan and Volume measurement for your Distillery

As a manufacturer or retailer your packaged goods must meet the requirements of the Weights and Measures Act 1987. The Average Quantity System (AQS) is how Trading Standards Officers assess whether pre-packaged goods comply with the Weights and Measures Act.

<https://trademeasurement.tradingstandards.govt.nz/for-business/packaging-and-or-selling-goods-by-quantity/the-average-quantity-system-aqs/>

When filling bottles, you should check yourself against the AQS - a sample of packages taken from a batch must meet these following requirements:

1. The average quantity of a sample must not be less than the stated quantity marked on the packages.
2. A small number of packages may contain less than the quantity stated on the package. The deficiency can be more than the tolerable deficiency (T1), but not more than twice the tolerable deficiency (T2). These are referred to as 'non-standard packages'.
3. No individual package is allowed a deficiency greater than twice the allowed tolerable deficiency. These packages are referred to as 'inadequate – packages' (T2).



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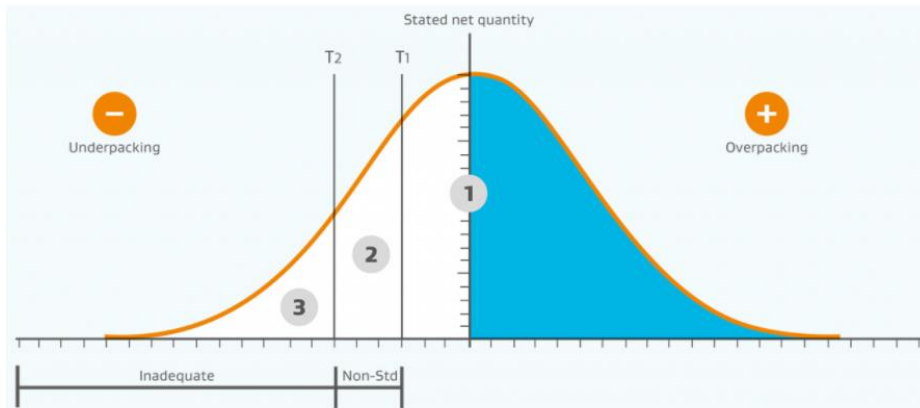
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The AQS applies a tolerance to the sample known as a 'tolerable deficiency'. Packages are permitted to be equal to, or greater than, the stated quantity minus the tolerable deficiency specified in the regulations.

Packages > 500 to <= 1 000 ml cannot be more than 15 ml of the stated quantity (convert it to g, adjusting for density if you are measuring it on a scale)

## Excise declaration

<https://www.customs.govt.nz/business/excise/what-is-excise/>

Excise duty is generally payable on anything removed from or consumed in the licensed area, including:

- tasting samples
- promotional give-aways
- donations
- free supplies
- bonus supplies

Legitimate manufacturing samples, eg for laboratory/quality control testing, are exempt from excise duty.

## Yeast Nutrition in fermentation - How do I measure YAN in my wash?

Yeast Assimilable Nitrogen is a measure of the Nitrogen levels in a wash (YAN = Ammonia Concentration + Primary Amino Acid Concentration given in the units: mg N/L (read: milligrams of nitrogen per litre). Molasses and sugar washes (Rum) in particular are nitrogen deficient so getting the nutrient regime for your yeast correct is important for both yield and flavour.



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Many Rum distillers don't worry about nutrient levels because they use their dunder from previous runs in future ferments to stabilize acids and increase further esterification. While not directly adding further nutrients it stabilizes ferments. The use of Dunder comes with pros and cons. It can have quite a high mineral content which can stress yeasts and affect fermentation. The PH drop can often require buffering. While it has generally positive effects on the flavour for rum that will age, it can impact yield. Even with Dunder, DAP (diammonium phosphate = "yeast food") can still be required and excess DAP can cause issues as well. At the *start of fermentation*, you want to avoid adding DAP or complex nutrient additions that contain DAP when hydrating your yeast. Some distillers don't use DAP unless they really need to, suggesting it tends to make a rather bland product. Another option is an organic yeast food called Fermcontrol. It is particularly good at maximising what YAN is available so you need less YAN to get the ferment dry, and makes a clean, tasty ferment.

### [Starting your fermentation right: nutrient supplementation](#)

Whilst there are general guides for the amount of DAP to add per litre, if you want to be more accurate the only way to do that is measure how much YAN is in there before and during the ferment.

YAN is challenging to measure. For about \$50 you can send your solution to Pacific Rim Oenology and they will measure it for you. You want about 250ppm of YAN if you want to ferment around the 23 brix mark. Nearly double that if fermenting 25 to 27 brix.

## Does anyone put much "weight" on botanical weight ratio to alcohol?

Is it just a guide to upscale your recipes or does it have a deeper meaning like the higher the ratio the more intense the flavour? We have heard that one distillery uses around 90 gms. i.e weight of botanicals divided by volume of pure alcohol.

Opinion: We do measure and graph what we call 'botanical mass'. It is a guide only as no two botanicals represent flavour and aroma only but helps us balance early recipes. The more you work with individual botanicals the more you learn how best to balance their botanical ratios.

Opinion: The simple answer might be also: the higher your alcohol ABV the more "taste" (botanical) can be stored in the alcohol. Diluting it down you will find at different dilution levels different taste profiles from eg to hot down to watery. My simple equation is: in about 40% you will have a ratio between 30 to 50g of Botanicals, depending what you use and like.

## Is there a difference in flavours and mouthfeel depending on ethanol source?

Opinion: I noticed a difference in mouthfeel. Whye has a slightly dry, astringent quality that grain doesn't have. I find the grain is softer in the mouth. This can be balanced with adjusting the



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botanicals in the blend. I do like the bare slate quality of the Lactanol - or better to say it's a bare canvas and it does allow the botanicals to shine. They are the heroes of the blend, not the quality of the grain spirit.

Opinion: Of all the major flavour and aroma variables in the rectification of gin (whether botanical or production) I still find the subtle nuances between neutral spirits a very unrealistic influence. If it was vodka there may be more validity.

Opinion: You may want the base to feature as a significant part in the blend - part of the conceptual story you are developing.

Interesting article by one of the world's foremost experts

...[https://www.ginfoundry.com/insights/base\\_spirit/](https://www.ginfoundry.com/insights/base_spirit/)

### Is the negative perception of whey alcohol justified?

Opinion: No difference in the quality of the final product.

Opinion: Consideration of ethical choice of vegan friendly, vs animal by-product as the base spirit and alignment with values. Consumers care about traceability and origin stories.

Opinion: There is a concern with grain is that it is a primary food source, considering the resources it takes to grow, it could be put to better use than going into ethanol - whereas whey is a by-product of a source of protein. But then, saying that - there are certainly issues with the mono-culture of dairy production as well.

Maybe it's time to come up with some other spirituous drinks base eg corn and grape - all have their own characters - with a lighter footprint. Goal of finding a cost-effective solution with minimal environmental impact.

### Are there differences in the grades of whey alcohol?

Lactanol supply NS and XNS (extra neutral spirit) which is meant to be an even higher level of the standard accepted model.