

## ? Where can I buy Coopers Home Brew products?

Our Micro Brew Kit is available at BIG W, K MART and On-line. Our Original Series, International Series and Brewing Sugars are available at Supermarkets, Variety Stores (Big W and K Mart), Homebrew Specialist stores and On-line. Our Thomas Coopers Premium Selection, Brewmaster Selection and Malt Range are only available through Homebrew Specialist Stores and On-line.

## ? Is my brew fermenting?

Many homebrewers wrongly assume that the yeast is not working because there is no bubbling through the airlock.

The airlock is fitted to allow gas to escape and prevent micro-organisms and wild yeasts from entering the fermenter. Do not rely on the airlock as an indicator of fermentation activity.

Rather than becoming “mesmerised” with the airlock, look for condensation inside the lid, a scum ring at the top of the wort, sediment on the bottom, cloudy / turbid / foamy brew from the tap and the specific gravity dropping (use a hydrometer).

## ? Why is my brew is foaming over in the fermentation tub?

Plenty of foam, although messy, is not a bad thing as it indicates healthy yeast and a strong fermentation. Excess foaming is more likely to occur when using ale yeast with darker brews and higher fermentation temperatures. Also seasonal variations may affect the barley (main ingredient in beer apart from water) causing more foam.

To avoid foaming over allow for extra headspace by using a bigger fermenting tub or fill to a lower level (around 18-20 litre mark) then top up with cool boiled water after initial foaming has subsided (normally after a day or two).

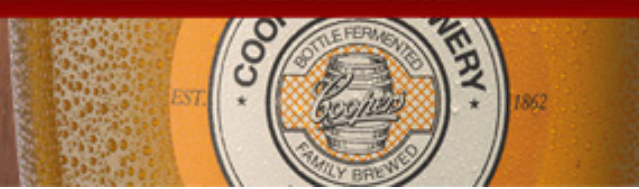
## ? Why use a hydrometer?

Many brewers don't use a hydrometer and have never had exploding bottles. One day their luck will run out! Brewers Yeast is a living organism and, as such, may perform differently from brew to brew. We recommend the use of a hydrometer for checking that fermentation is complete before bottling. The hydrometer is a simple device which, when floated in a sample, gives an indication of the density of the brew. Two separate samples over 24hrs with the same reading indicates that fermentation is complete (Final Gravity - FG). Once FG is achieved, have a taste and a smell of the brew (an infection is usually a sour taste). If it tastes and smells like beer you can bottle confidently in the knowledge that the correct amount of priming will produce the right amount of fizz with no explosions!

## ? Should I use plastic or glass bottles?

The Coopers Micro-Brew Kit contains thirty 740ml PET bottles. These bottles are also widely available as a separate item (in boxes of fifteen). PET stands for polyethylene terephthalate, which is the same plastic used to make soft drink (soda pop) bottles.

In 2000 we decided to include these bottles in our Kit rather than the traditional crown seals and capper because it was becoming increasingly difficult for new brewers to obtain the old crown seal bottles. The single use glass that commercial beer is sold in these days is too thin to stand up to the rigours of continual washing and capping.



The majority of PET bottles are porous (a beverage held in PET will eventually go flat). However, Coopers PET bottles have a nylon barrier that helps to prevent both the ingress of oxygen and the loss of CO<sub>2</sub> for up to 18 months. If you want to make a big ale or stout and age it for 2 years or more, you may choose to use good quality glass bottles.

The re-usable caps have a tamper evident collar that breaks off after the first use. This does not affect the airtight seal. When the caps eventually wear out, replacement caps can be purchased separately.

Many home brewers use soft drink bottles. All you need to do is work out the amount of priming sugar that is required for the size of the bottle. We recommend a priming rate of 8g per litre and one teaspoon is about 6g. All PET is temperature-sensitive and therefore cannot be cleaned using hot water.

## ? How do I get my brew to hold a head?

Head retention is adversely affected by the following:

1. Glassware has residual detergent or grease.
2. Young beer can produce a large foamy head that quickly dies away.
3. Too much simple sugar (sucrose or dextrose) in the brew.
4. Low carbonation level in the beer.
5. A racing ferment due to high temperature.

To check your glassware, get some clear (crystal type) plastic glasses from the supermarket. Pull one straight out of the plastic wrap and place it beside your favourite glass. Fill both with the same brew and compare head retention.

Head retention can usually be improved by adding around 300g of maltodextrin to the wort. Replacing some of the sugar/dextrose with malt extract will have the same affect, with the added bonus of extra malt flavour.

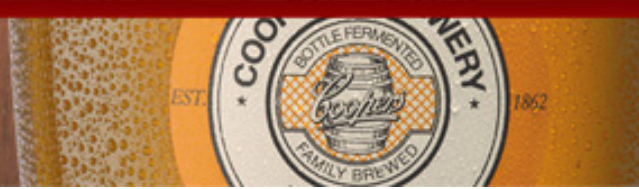
## ? Kegging beer

There are a couple of options open to you when it comes to kegging. If you are in a hurry for the beer (a party on the weekend) and it will be consumed within a couple of months, then artificial carbonation is the best option. Natural conditioning will give you a better beer in our opinion but the conditioning period is much longer (several weeks as opposed to several days). Well made, naturally conditioned beer will last as long in the keg as it does in bottles (at least two years or so).

Artificially carbonated beer will deteriorate after a few months.

## ? Natural Conditioning

1. Clean and sanitise the keg thoroughly.
2. Prime with sugar at the rate of 4g per litre.
3. Rack via a piece of sanitised, flexible tubing so that the beer runs to the bottom of the keg.  
Leave 5 – 10 cm of headspace at the top.
4. Seal the keg then invert and give it a shake to mix the sugar and check that the seal is good.
5. Store at 18C or above for a week, then allow the beer to condition for at least two weeks.
6. Refrigerate for a day or two, momentarily release the keg pressure, then connect the gas at required pouring pressure 35 – 100 kPa, depending on your system. (Fifty litre kegs through a temprite or miracle box may require up to 300 kPa).



## ? Artificial Conditioning

1. Clean, sanitise, purge (purge by connecting the CO<sub>2</sub> bottle to force the air out of the keg) and rack as per the natural conditioning procedure, without the priming sugar.
2. If you are in a hurry for the beer, seal the keg, pressurise to 300 kPa and shake it about 100 times (for an 18 – 20 litre keg) with the gas connected. If there is no rush or you're not feeling energetic, leave the gas connected with the regulator set at 300 kPa for 2 – 3 days. CO<sub>2</sub> will be absorbed more quickly if the beer is refrigerated.
3. Place in the fridge for several days then adjust to pouring pressure. The beer will be drinkable as soon as it is cold, but will improve for several weeks in the fridge.

For crystal clear beer, rack into a sanitised, airtight, food grade container (flush with CO<sub>2</sub> first) and refrigerate for a week. Once the beer is clear, keg and carbonate artificially.

## ? Troubleshooting

Degassing the keg over a day or two will usually rectify over-carbonation. Agitate the keg and release the CO<sub>2</sub> several times a day until the beer has reached the desired level of carbonation. If the beer is pouring badly but appears to have little or no carbonation, check to ensure that there are no kinks or holes in the beer and gas lines. Contrary to logic, heady beer can be a result of low gas pressure and increasing the pressure via the regulator will often fix the problem. A short beer line may also be the cause of heady beer. Look to use about 3m of 5mmID line, 2m of 4mmID line or an in-line restrictor

## ? Why is the BEST BEFORE date on the can okay but the yeast is out of date?

The code on the yeast sachet is a Julian Date, representing the date that the yeast was packaged rather than a "Use By" or "Best Before" date. e.g. a sachet with 25007 was packaged on the 7th of September, which is the 250th day of 2007. While the can of home brew containing this yeast sachet may have been produced on Thursday the 13th of September 2007, carrying a Best Before date of 13/09/09.

## ? What is a Carbonation Drop?

Coopers Carbonation Drops look like boiled lollies and contain the equivalent of 3g of sugar. Use them instead of measuring out white sugar to speed up the bottling process. The drops will dissolve within an hour and plume through the brew so there is no need to invert the bottles.

## ? How long can a brew be left in the fermenting tub?

A brew is most at risk of spoilage when the yeast is not active. This may be at the start of the ferment (prior to or just after the yeast is pitched) or at the end of the ferment (when the yeast has sedimented to the bottom of the brew). A brew, fermented with the lid on or clingwrap, should have a protective layer of CO<sub>2</sub> gas and may be perfectly fine for several days until fermentation is complete. However, the majority of homebrewers cannot produce a completely sterile environment for their brew so the longer the brew is left to sit the greater the risk of spoilage. Sample the brew prior to bottling - if it smells like beer and tastes like beer it is probably okay to bottle.



## ? **Is there a home brew suitable for diabetics? How do I make low alcohol beer?**

A low alcohol beer (approx 2.9% abv) can be made by using a 1.7kg can of Home Brew mixed to 23 litres and no other sugars. However, please consult your GP on this topic.

## ? **How do I make a low carbohydrate beer?**

Carbohydrates in beer are in the form of alcohol and residual sugars. To reduce the amount of carbohydrates in the brew the amount of fermentable materials in the recipe should be reduced. An enzyme (available at Home Brew Specialist stores) can be added to the brew to help the yeast metabolise the sugars more thoroughly.

## ? **How do I make beer suitable for gluten intolerant people?**

All Coopers Home Brew kits contain malt extract - derived from malted barley - and, as such, are not suitable for gluten intolerant people.

## ? **The airlock bubbles occasionally (once every couple of minutes or so), is it okay to bottle?**

Don't trust the airlock! Rather, the brew is okay to bottle once the specific gravity (measured with a hydrometer) is stable over 2 days.

## ? **Is Brew Enhancer supposed to be added as well as sugar?**

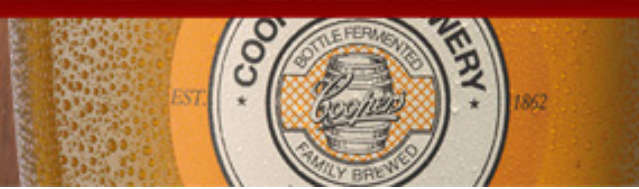
Coopers Brew Enhancer 1 contains Dextrose and Maltodextrin while Coopers Brew Enhancer 2 contains Dextrose, Light Dry Malt and Maltodextrin. They are intended to be used instead of white sugar or dextrose. For more consistent carbonation levels, Coopers Carbonation Drops or normal white sugar should be used for priming the bottles.

## ? **Will the brew be okay to make if the can is past the 'Best Before' date?**

Coopers Home Brew cans contain hopped liquid malt extract. Liquid malt extract darkens over time and develops toffee/molasses like aromas. This process is accelerated when temperature is increased. This is not such a bad thing with intentionally dark brews but may be undesirable with lighter styles. If you wish to persist with making up a brew past its Best Before date (out of curiosity or otherwise) it's worth getting fresh yeast from a Home Brew Specialist store to ensure that the brew ferments thoroughly.

## ? **Should I boil the kit to remove break?**

We brew beer, malt extract and home brew worts in the same way. All worts are boiled and produce hot break, which is then removed in the whirlpool. Rather than being cooled down for fermentation, the malt extract and home brew worts are centrifuged and transferred to evaporators where all but around 20% of the water is removed. At this stage the malt extract and home brew is packaged then cools down but does not throw cold break material because the extract is too dense for it to precipitate.



Once you add water, the wort becomes thin enough for the break material to precipitate. This break material is completely harmless to the brew and will settle out during fermentation.

If boiled the break material may clump together giving the impression, incorrectly, that it is hot break. Boiling home brew (hopped malt extract) will only darken the brew and drive off hop aroma.

However, if you are following a specific recipe and using additional hops, you may like to boil some of the malt extract to achieve the expected hop utilisation for correct aroma, flavour and bitterness in the finished beer.

## ? Is my brew infected?

Comment - from time to time a Home Brewer may experience an infected brew.

Fact - all home brewed beer carries some level of infection.

Fortunately, infection is only apparent once the off flavours and aromas reach a certain threshold (perceivable level). Some of us are more sensitive to this than others.

An infected brew may produce the following symptoms:

- Appearance; a scum ring inside the bottle and haziness (not due to yeast)
- Aroma; vinegar, medicinal or solvent smell
- Taste; sour, sharp or harsh flavour

Remedy - clean and sanitise all equipment that will come in contact with the brew to minimise the symptoms of infection.

To clean:

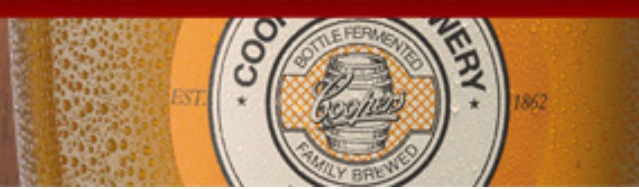
- Soak equipment in water until caked on residue is softened.
- Remove residue with a soft cloth and rinse thoroughly.
- Pay attention to 'hard to get at' areas.
- Remove and clean the tap, particularly the threads.

NOTE: Do not use any cleaning aid that may scratch the plastic.

To sanitise using Coopers Sanitiser:

- Dissolve 4 capfuls of Coopers Sanitiser in the fermenting tub with a litre of hot water.
- lace all equipment in the fermenting tub, fill to the brim with cold water and let soak overnight (or at least 2 hours).
- Drain the fermenting tub through the tap and rinse all equipment with hot water.
- The fermenting tub lid need only be cleaned then rinsed with hot water.
- To sanitise using Unscented Household Bleach:
  - Place ¼ cup of unscented household bleach in the fermenting tub.
  - Place all equipment in the fermenting tub, fill with cool water and let soak overnight.
  - Rinse out with hot water to remove all traces of chlorine smell.
  - The fermenting tub lid need only be cleaned then rinsed with hot water.

Bottles – Clean bottles may be filled with sanitising solution drained from the fermenting tub after soaking for 2 hours, left to soak for a further 2 hours, then drained from the bottles. Coopers PET bottles and soft drink bottles should be sanitised and rinsed with cold/warm solution.



## ? What can I do to control the temperature of my brew?

Most home brewers find it easier to keep warm (with insulation) rather than cooling their brew because the brew generates heat as it ferments.

Non-electrical temperature control

- Wrap the fermenting tub in a 0°C-5°C rated sleeping bag, blankets or an old jacket.
- Place the fermenter in a large esky, insulated box, non-working fridge or freezer.
- Sit the fermenting tub in a laundry tub with frozen PET bottles.
- Place the fermenter in a cellar or on a cool bare concrete floor.
- Partially roll a towel and place in the lid of the fermenter, fill the well of the lid with cold water and drape the towel over the side of the fermenter allowing the water to wick down the towel.

Electrical temperature control

- Heat pad or heat belt
- Tea chest, box, cupboard, old fridge etc. with a 25W-40W incandescent lamp controlled by a thermostat, dimmer switch or timer switch.
- Place in an air-conditioned room.
- Place in a working fridge or freezer with modified thermostat.
- Place near an inside storage hot water system.
- Wet towel method with an electric fan blowing over it.

## ? The quoted Home Brew bitterness and colour figures seem very high!

The figures we quote for colour and bitterness are specified for the product inside the can at the time of packaging. Of course, the product is concentrated, hence the seemingly high figures. The figures become more realistic once they are plugged into a formula for estimating the colour and bitterness of the reconstituted and fermented brew.

To calculate the bitterness of the brew: multiply the quoted product bitterness by the weight of the product (1.7kg)\* and divide by the total brew volume (normally 23 litres).

\* We use the weight because our quoted colour/bitterness figures are based on a weight/volume dilution.

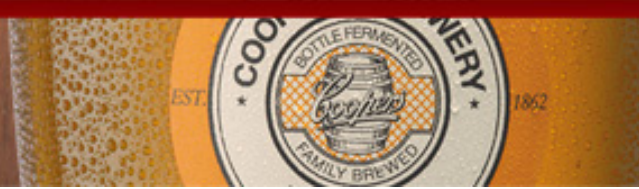
Product bitterness x 1.7 / Brew volume = Total bitterness before fermentation

As an example, if a brew is made with Mexican Cerveza up to a volume of 23 litres:

$270 \times 1.7 / 23 = 20$  IBU (International Bitterness Units)

This figure represents the brew bitterness prior to fermentation. Generally, fermentation reduces colour and bitterness by between 10 to 30%. So final bitterness of the fermented brew may be anything from 14 to 18 IBU.

Colour may be calculated in the same way. Ensure to add the colour contribution of all ingredients together. Colour figures are quoted for liquid extract at the time of packaging as these products will darken with time. The darkening process is accelerated by exposure to elevated temperature.



## ? Why is the non-alcoholic Ginger Beer not left in the fermenting tub to ferment like other brews?

The non-alcoholic version of Coopers Ginger Beer only undergoes a single ferment. This ferment occurs in the bottle while the fermenting tub is used only for mixing the brew. The ferment in the bottle serves to carbonate the brew. Of course, with any fermentation, some alcohol is produced (approx 0.7% ABV) but not enough to be considered as an alcoholic beverage (< 1.15% ABV). Being a primary fermentation, there will be a small deposit around the fill line of the bottle as well as the normal sediment at the bottom.

## ? Can I use normal sugar with non-alcoholic Ginger Beer instead of carbonation drops?

As some may not have scales to measure out the correct amount of sugar, carbonation drops are suggested for no other reason than convenience. For a volume of 20 litres, 160g (a rate of 8g per litre) of sugar may be added during “Step 1”(initial mixing of ingredients), negating the need for carbonation drops.

## ? Having trouble keeping the temperature between 21-27. Can I still make beer?

Yes, beer can be made at temperatures outside of 21C-27C!

Yeast will ferment above 32C (lager yeast perishes beyond 37.5C), although, in our opinion, it won't make the best beer at such high temperatures. Conversely, yeast will continue to ferment, albeit slowly, as low as 16C (some lager yeast strains will keep working as low as 10C)!

Generally, our instructions suggest a temperature range between 21C-27C. We also suggest that a wort outside of 21C-27C but within the range of 18C-32C should not be left to sit. Rather, add the yeast promptly and then look to draw the temperature within the 21C-27C range.

As a brewer develops more precise temperature control, experimentation at more specific temperatures (normally at the lower end of the recommended range) may be conducted to determine what suits appropriate beer style and/or personal taste.

## ? The bottling valve is missing its spring?

The bottling valve, supplied with the Coopers Micro-Brew Kit, does not have a spring!

Yes there is a bottling valve on the market, identical in looks, containing a metal spring.

We chose to supply a bottling valve without the spring for the following reasons:

- The weight from the column of fluid shuts the valve off.
- Fluid will drip from the valve, spring or no spring, once the bottle is drawn away - it's just been immersed in beer!
- The spring is prone to corrosion and is a source of contamination.
- It's commonplace for brewers to lose the spring when disassembling for cleaning.