

# BEERWORKS<sup>®</sup>

## All Grain Beer Kit Instructions

### American Pale Ale

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#### Ingredients

##### Grain:

Marris Otter 4.5 kg

##### Yeast:

US West Coast 20 gm

1 x Protofloc Tablet

##### Hops:

Cascade 20 gm 75 minutes at start of boil,

Cascade 50 gm flame out,

Cascade 50 gm dry hop

#### Specifications

OG - Start Gravity:	1047
FG - Finish Gravity:	1011
ABV:	4.60 %
BU:	22.24
Mash Water:	15.7 ltr
Mash Temperature:	66° c
Mash Time:	90 Minutes
Sparge Water:	15.9 ltr 78° c
Boil Time:	75 Minutes

Make sure all equipment is thoroughly cleaned and sterilised before starting.

1. Take the mash water volume and bring up to temperature. Add all the grain slowly and mix well as its being added. Once well mixed boil for the required time.
2. Lift the grain from the liquid and slowly add the sparging water. Try to spread the water evenly over the grain (avoid making channels in the grain). A watering can hose effect is perfect.
3. Dispose of the grain and return the boiler to the boil position. Once up to temperature boil for the required length of time.

4. Add hops at desired time (75 mins will be at the start, 60 mins will be for the last 60 mins, 30 mins for the last 30 mins and so on) and continue with the rolling boil.
5. When the boil has finished, add the “flame out” hops. These will be left until the brew has been cooled ready for fermentation. Normally this will take 20 minutes or so depending on your equipment. Remove hops (easily done if a sparging basket or muslin bag has been used otherwise strain the liquid).
6. Dry hops should be added to the cooled wort before adding the yeast. This can be left in during fermentation.
7. Add the yeast and leave until the fermentation has achieved the gravity indicated above (or shows approximately the same reading for 2 days).
8. Bottle or barrel your beer using priming sugar approximately one level teaspoon per 500 ml bottle.