# Recipe Details

| | | |
|---|---|---|
| Recipe Name: | | Batch Number: |
| Recipe Number: | | Date Brewed: |
| Style: | | Brew Method: |
| OG Range: | Target OG: | Batch Size: |
| IBU Range: | Target IBU: | Boil Time: |
| SRM Range: | Target SRM: | Exp. Efficiency: |
| Target Characteristics of the Beer: | | |

# Grain Bill & Fermentables (See the Recipe Formulation Guide for Grain Bill and MCU Procedures)

| Percent of Grain[3] | Grain or Fermentable[2] | °L* | Potential | Gravity Units[4] | Mash Efficiency[5] | Pounds Needed[6] | MCU[7] |
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| 100% | | | | GU[1] | | lbs. | MCU |

* °L refers to degrees Lavabond, not degrees Lintner.

# Hops & Bittering (See the Recipe Formulation Guide for Hop Bill Procedure)

| Weight | Hop or Bittering Addition | Alpha Acid % | Time of Addition | Utilization % | IBUs Contributed |
|---|---|---|---|---|---|
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| | | | | | |
| oz. | | | | | IBUs |

## Estimating Mash pH

Equation: $pH = 5.8 + (0.028 \times [(Total\ Alk(ppm\ CaCO3) \times 0.056) - (Ca(ppm\ Ca)\ x\ 0.04) - (Mg(ppm\ Mg) \times 0.033)])$

*To complete this calculation for any water, begin by providing the appropriate values for each constituent in column A as described below:*

Total alkalinity in ppm or mg/L of CaCO3: _____ x 0.056 = _____ (line 1)

Calcium content in ppm or mg/L of Ca: _____ x -0.04 = _____ (line 2)

Magnesium content in ppm or mg/L of Mg: _____ x -0.033 = _____ (line 3)

Sum of column B, lines 1, 2, and 3: _____ (line 4)

Multiply line 4 by 0.028: x 0.028 (line 5)

pH adjustment value (product of lines 4 and 5): _____ (line 6)

Add to the mash pH achieved with distilled water: + 5.8 (line 7)

Mash pH predicted with source water (sum of lines 6 and 7): _____ (line 8)


## Total Water Volume Calculation

Batch size: _____ gallons

Trub and hob debris losses; add: _____ gallon (0.5 to 1 gallon)

Final boil volume (a.k.a. "Finished volume"): _____ gallons (batch plus loss)

Shrinkage; divide by 0.96: _____ gallons (4% shrinkage)

Evaporation; divide: _____ ( = 1 – [evap. rate x boil
length in hours)

*Note: the evap. rate is typically 5%, or 0.05*

Equals pre-boil volume: _____ gallons

Equipment losses; add: _____ gallon (brew house value)

Spent grain losses; add: _____ gallon (= grain weight x 0.2)

Equals total water required: _____ gallons

## Salt Additions

| | | |
|---|---|---|
| Desired pH (typically 5.2 to 5.8): | | Current estimated, or actual pH: |
| Corrective Measures: | | |

If the actual pH is less than desired (more acidic), add Chalk ($CaCO_3$). If the actual pH is higher than desired (more basic), add Calcium or Magnesium (gypsum or epsom salts).

## Finning Agents

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|---|---|
| Did you use finning agents? | |
| If so, what did you use and what quantity? | |

## Yeast

| | | |
|---|---|---|
| Type: | | Starter Size: |
| Average Attenuation: | | Expected ABV%: |
| Optimum Temperature: | | |

## Planned Mash Schedule

Initial Mash Thickness: _____ qt/lb

| Name/Step | Temperature Target | Infusion Temperature | Infusion Volume | Time to Next Step |
|---|---|---|---|---|
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## Brew Day Notes & Metrics

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|---|---|---|
| Pre-Boil Gravity: | | Original Gravity: |
| Pre-Boil Volume Collected: | | Volume of Wort in Fermenter: |
| Overall Mash Efficiency: | | |

## Fermentation Notes

| Name/Step | Date | Temperature | Notes |
|-----------|------|-------------|-------|
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|           |      |             |       |
|           |      |             |       |
|           |      |             |       |

## Final Metrics

| | |
|---|---|
| Final Gravity: | Final Volume Packaged: |
| Actual Attenuation: | Conditioning Method: |
| ABV%: | Carbonation Level: |

Tasting Notes and Reviews:

Notes on Potential Improvements: