Neipa low ABV

American IPA (21 A)

Type: All Grain
Batch Size: 5,50 gal
Boil Size: 8,50 gal
Boil Time: 90 min
End of Boil Vol: 6,25 gal
Final Bottling Vol: 5,00 gal
Fermentation: Ale, Two Stage

Date: 10 Jan 2021
Brewer:
Asst Brewer:
Equipment: Arne's HERMS 5Gal
Efficiency: 72,00 %
Est Mash Efficiency: 78,5 %
Taste Rating: 30,0

Taste Notes:

Prepare for Brewing

- ◯ No yeast starter used
- ◯ Clean and Prepare Brewing Equipment
- ◯ Total Water Needed: 9,37 gal
- ◯ Mash Water Acid: None

Mash or Steep Grains

Mash Ingredients

Amt	Name	Type	#	%/IBU	Volume
1,80 kg	Pilsner (2 Row) Ger (2,0 SRM)	Grain	1	57,7 %	0,31 gal
0,45 kg	Oats, Flaked (1,0 SRM)	Grain	2	14,6 %	0,08 gal
0,45 kg	Wheat, Flaked (1,6 SRM)	Grain	3	14,6 %	0,08 gal
0,40 kg	Cara-Pils/Dextrine (2,0 SRM)	Grain	4	12,8 %	0,07 gal
0,01 kg	Carafa II (412,0 SRM)	Grain	5	0,3 %	0,00 gal

Mash Steps

Name	Description	Step Temperature	Step Time
Saccharification	Add 15,70 L of water at 72,4 C	68,9 C	40 min
Mash Out	Heat to 75,6 C over 10 min	75,6 C	10 min

- ◯ Sparge Water Acid: None
- ◯ Fly sparge with 5,23 gal water at 75,6 C
- ◯ Add water to achieve boil volume of 8,50 gal
- ◯ Estimated pre-boil gravity is 1,023 SG

Boil Ingredients

Amt	Name	Type	#	%/IBU	Volume
13,00 g	Tahoma [6,60 %] - Boil 60,0 min	Hop	6	11,0 IBUs	-

Steeped Hops

Amt	Name	Type	#	%/IBU	Volume
40,00 g	Cream Soda [8,00 %] - Steep/Whirlpool 15,0 min, 90,2 C	Hop	7	11,2 IBUs	-
40,00 g	Tahoma [6,60 %] - Steep/Whirlpool 15,0 min, 90,2 C	Hop	8	9,3 IBUs	-

- ◯ Estimated Post Boil Vol: 6,25 gal and Est Post Boil Gravity: 1,033 SG

Cool and Transfer Wort

- ◯ Cool wort to fermentation temperature
- ◯ Transfer wort to fermenter
- ◯ Add water if needed to achieve final volume of 5,50 gal

Pitch Yeast and Measure Gravity and Volume

Fermentation Ingredients

Amt	Name	Type	#	%/IBU	Volume
1,0 pkg	Vermont Ale (Escarpment Labs #)	Yeast	9	-	-

◯ Measure Actual Original Gravity _____ (Target: 1,033 SG)
◯ Measure Actual Batch Volume _____ (Target: 5,50 gal)

Fermentation

◯ 10 Jan 2021 - Primary Fermentation (4,00 days at 19,4 C ending at 19,4 C)
◯ 14 Jan 2021 - Secondary Fermentation (10,00 days at 19,4 C ending at 19,4 C)

Dry Hop and Bottle/Keg

Dry Hop/Bottling Ingredients

Amt	Name	Type	#	%/IBU	Volume
60,00 g	Cream Soda [8,00 %] - Dry Hop 5,0 Days	Hop	10	0,0 IBUs	-
60,00 g	Tahoma [6,60 %] - Dry Hop 5,0 Days	Hop	11	0,0 IBUs	-

◯ Measure Final Gravity: _____ (Estimate: 1,008 SG)
◯ Date Bottled/Kegged: 24 Jan 2021 - Carbonation: Keg with 0,86 bar
◯ Age beer for 30,00 days at 18,3 C
◯ 23 Feb 2021 - Drink and enjoy!

Notes

EZ Water Calculator Spreadsheet 3.0 - METRIC

Step 1: Enter Starting Water Profile

	Calcium (Ca ppm)	Magnesium (Mg ppm)	Sodium (Na ppm)	Chloride (Cl ppm)	Sulfate (SO_4 ppm)	◉ carbonate (HCO_3 ppm) ○ kalinity ($CaCO_3$ ppm)
A. Profile						
Starting Water Profile:	0	0	0	0	0	0
(ppm = mg/L)						

If your water report gives Sulfate as Sulfur (SO_4-S) such as a Ward Lab's report, multiply by that by 3 to get SO_4

B. Volume	Mash Water	Sparge Water
Volume (liters):	18,9	54
(gallons):	*4,99*	*14,27*
% that is Distilled or RO:	0%	0%

Step 2: Enter Grain Info

	Select Grain Type	Weight (kg)	Color (°L) (Crystal Malts Only)	*Distilled water Mash pH (from chart)*
Crystal Malt: *Caramel malts, Cara Munich, Cara Aroma, etc.*	Base - Pilsne	1,8		*5,75*
Roasted/Toasted Malt: *Roasted Barley, Black Patent, Carafa, etc.*	Roasted/Toa	0,01		*4,71*
	Crystal Malt	0,4	3	*5,20*
Acidulated Malt: *Enter in Step 4a.*	Base - Other	0,9		*5,70*
	- Select Grai	0		
	- Select Grai	0		
	- Select Grai	0		
	- Select Grai	0		
	- Select Grai	0		
Total Grain Weight (kg):		***3,11***		
(lbs):		*6,9*		
Mash Thickness:		***6,08 l/kg***		
		2,91 qt/lb		

grain types	*dist water pH*
1 - Select Grain -	
2 Base - 2-Row	*5,70*
3 Base - 6-Row	*5,79*
4 Base - Maris Otter	*5,77*
5 Base - Munich	*5,43*
6 Base - Pilsner	*5,75*
7 Base - Wheat	*6,04*
8 Base - Vienna	*5,56*
9 Base - Other	*5,70*
10 Crystal Malt	*calculated*
11 Roasted/Toasted	*4,71*

The above values are used to calculate mash pH. They may vary depending on maltser or other factors - for example Rahr 2-Row has been found to be 5.56. Modify if necessary.

Step 3: View Mash pH

Note: When measuring actual mash pH with a meter, keep in mind that it can take up to 15 minutes for mash pH to stabilize.

Effective Alkalinity ($CaCO_3$ ppm)	Residual Alkalinity	**ESTIMATED Room-Temp Mash pH**	*Desired Room-Temp Mash pH*
-62	-124	**5,43**	*5.4 - 5.6*

There are varying opinions on the optimum range here. Consider doing your own research and/or experimentation to determine what's best for you.

Step 4a: Adjust Mash pH DOWN (if needed)

	Gypsum $CaSO_4$	Calc. Chloride $CaCl_2$	Epsom Salt $MgSO_4$
add at dough-in or prior.			
Mash Water Additions (grams):	0	4,8	4,3
Adjusting Sparge Water? (y/n):	☒	☒	☒
Sparge Water Additions (grams):	**0,0**	**13,7**	**12,3**

add to boil, or to sparge water prior to sparging, or combine with mash salts when treating all water combined prior to brewing.

Acidulated Malt	
acid content:	2,0%
grams:	0
oz:	0,0
	(0% of total wt)

Lactic Acid	
acid content:	88%
ml:	1

Typically 2.0%. Revise if necessary.

Some recommend keeping this under 3%

Step 4b: Adjust Mash pH UP (if needed)

Calculations for chalk's true affect on pH are very complex and may require an acid to fully dissolve. This spreadsheet uses half of chalk's full potential based on experimental data w/o acid addition. Results may vary.

	Slaked Lime $Ca(OH)_2$	Baking Soda $NaHCO_3$	Chalk $CaCO_3$
add at dough-in or prior.			
Mash Water Additions (grams):	0	0	0
Adjusting Sparge Water? (y/n):	☒	☒	☒
Sparge Water Additions (grams):	**0,0**	**0,0**	**0,0**

add to boil, or to sparge water prior to sparging, or combine with mash salts when treating all water combined prior to brewing.

Step 5: View Resulting Water Profile

	Calcium (Ca ppm)	Magnesium (Mg ppm)	Sodium (Na ppm)	Chloride (Cl ppm)	Sulfate (SO_4 ppm)	Chloride / Sulfate Ratio
Mash Water Profile:	69	21	0	123	89	1,38
Mash + Sparge Water Profile:	**69**	**21**	**0**	**123**	**89**	**1,38**
Palmer's Recommended Ranges:	*50 - 150*	*10 - 30*	*0 - 150*	*0 - 250*	*50 - 350*	*Above 1.3 may enhance maltiness*

There are varying opinions on these ranges. Consider doing your own research and/or experimentation to determine what's best for you.

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References:

Portions of the Alkalinity, RA, and pH calculations are based on information and experiments from:
Kai Troester, "The effect of brewing water and grist composition on the pH of the mash" 2009
Recommended mineral ranges are from:
John Palmer, "How to Brew"
Recommended Cl to SO4 ratio ranges are from:
John Palmer's RA spreadsheet

Created by: TH

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Check for Updates