




Munich Madness

Method: **All Grain**
Style: **Märzen**
Boil Time: **90 min**
Batch Size: **5.75 gallons** (*fermentor volume*)
Pre Boil Size: **8.2 gallons**
Post Boil Size: **6.3 gallons**
Pre Boil Gravity: **1.042** (*recipe based estimate*)
Post Boil Gravity: **1.054** (*recipe based estimate*)
Efficiency: **75%** (*brew house*)
Source: **Brewing Classic Styles**
Hop Utilization Multiplier: 0.91
Calories: **179 calories** (Per 12oz)

Original Gravity: **1.054** Final Gravity: **1.015** ABV (alternate): **5.27%**
IBU (tinseth): **27.53** SRM (morey): **11.13**  Mash pH: **n/a**

Fermentables

Amount	Fermentable	PPG	°L	Bill %
5 lb	American - Pilsner	37	1.8	38.5%
4 lb	American - Munich - Light 10L	33	10	30.8%
3 lb	American - Vienna	35	4	23.1%
1 lb	German - CaraMunich III	34	57	7.7%
13 lb	Total			

Hops

Amount	Variety	Type	AA	Use	Time	IBU
56.7 g	Hallertau Hersbrucker	Pellet	4	Boil	60 min	21.13
28.35 g	Hallertau Hersbrucker	Pellet	4	Boil	20 min	6.4

Hops Summary

Amount	Variety	Type	AA
85.05 g	Hallertau Hersbrucker	Pellet	4
3 oz	Total		

Mash Guidelines

Amount	Description	Type	Temp	Time
--		Infusion	151 °F	60 min
Starting Mash Thickness: 1.75 qt/lb				

Yeast

Imperial Yeast - L17 Harvest

Amount: 1
Attenuation (avg): 70% **Flocculation:** Medium
Optimum Temp: 50 - 60 °F **Starter:** Yes
Fermentation Temp: 55 °F **Pitch Rate:** 1.5 (*M cells / ml / ° P*) 435 B cells required

Priming

CO₂ Level: 2.65 Volumes

Target Water Profile: Munich (Dark Lager)

Ca ⁺²	Mg ⁺²	Na ⁺	Cl ⁻	SO ₄ ⁻²	HCO ₃ ⁻
82	20	4	2	16	320

Quick Water Requirements

Water	Gallons	Quarts
Total mash water needed	9.86	39.5
Strike water volume at mash thickness of 1.75 qt/lb	5.69	22.8
Remaining sparge water volume	4.18	16.7
Grain absorption losses	-1.63	-6.5

Amount going into kettle	8.24	33
Boil off losses	-1.88	-7.5
Kettle dead space	-0.25	-1
Hops absorption losses	-0.11	-0.5
Misc. losses	-0.25	-1
Amount going into fermentor	5.75	23
Total:	9.86	39.5

Batch Performance

<p>Efficiency:</p> <p><i>Conversion Efficiency N/A</i></p> <p>Pre-Boil: 90% 31.7 ppg</p> <p><i>Ending Kettle Efficiency N/A</i></p> <p>Brew House: 76% 26.7 ppg</p>	<p>Wort Volume:</p> <p>5.5 Gallons</p> <ul style="list-style-type: none"> Expected 5.75 Gallons of fermentable wort. Adjust your equipment profile and calibrate your equipment to dial this in. Expected OG: 1.054 Actual OG: 1.063
<p>Alcohol and Attenuation:</p> <p><i>Pending - N/A</i></p> <p>Requires Brew Day Complete and Fermentation Complete log entries with gravity readings.</p>	<p>Amount Packaged:</p> <p><i>Pending - N/A</i></p> <p>Requires Packaged log entry with a volume reading.</p>

Latest Brew Log

Date	Days Event	Gravity Volume	pH	Temp Updated	Comment
2019-09-01	-0 Pre-Boil Gravity	1.050 33 Quarts	5.5	9/1/2019 12:13 PM	
2019-09-01	-0 Brew Day Complete	1.063 5.5 Gallons		9/1/2019 4:09 PM	

This recipe is not shared.

Last Updated: 2019-08-31 11:35 MDT

Snapshot Created: 2019-08-31 11:35 MDT