

Style: 20C. Imperial Stout

Brewer: Beer-N-BBQ by Larry
Brew Date: October 23, 2022Brew System: Blichmann BrewEasy, 10 Gal, Electric, 75% Power - High Grav
Chiller: JaDeD Scylla Fermenter(s): Kegmenter

Grain Bill, Adjuncts, & Sugars		
Type	Qty lb	% of Bill
Pale Malt: Brewers Malt, 2-row (Briess)	32.00	71.1%
Munich Malt: Munich Malt Type 2 (Weyermann)	4.00	8.9%
Caramel Malt: Caramel Malt 80L (Briess)	2.00	4.4%
Caramel Malt: Caramel Malt 120L (Briess)	2.00	4.4%
Flaked Oats (Briess)	2.00	4.4%
Chocolate Malt: Dark Chocolate Malt (Briess)	1.50	3.3%
Roasted Malt: Midnight Wheat Malt (Briess)	0.50	1.1%
Munich Malt: Dark Munich Malt (Avangard Malz)	1.00	2.2%

Recipe Outputs		BJCP Guide	
Design	Actual	Min	Max
Extract Eff.: 60.0%	61.2%		
Brewhouse Eff.: 55.5%	#VALUE!		
O.G.: 1.087	1.092	1.075	1.115
F.G.: 1.017	1.020	1.018	1.030
Ferm Vol: 42.0			
Batch Vol: 40.0			
App Atten: 81.0%	78.2%		
IBUs: 36	37	50	90
ABV: 9.1%	9.3%	8.0%	12.0%
SRM: 41	42	30	40
Calories per US Pint: 413			

Water Information		
Chicago (Lake Michigan)		
ppm (mg/L)	Orig.	Adj.
Calcium	37	110
Magnesium	12	22
Sodium	9	9
Chloride	16	123
Sulfate	25	99
Alkalinity	102	
Cl/SO ₄ Ratio	0.64	1.24

Total Water Required									
Design	69.8	qt	77.0	°F	Actual	70.0	qt	77.0	°F
Mash Schedule & Water Infusions									
Step #	Schedule		Strike Water (Preheated Tun)				Mash		Mash pH
	Temp °F	Time min	Design qt	°F	Actual qt	°F	Actual °F	Design	
1	156	90	38.3	176	38.0	172.0	154.0	5.4	
2	172	10							
3									
4									
5									

Hop Bill & Schedule					
Species	Type	Alpha (%)	Qty oz	AAU	Time (min)
CTZ	Pellet	15.1	1.50	22.7	60
Northern Brewer (U.S.)	Pellet	8.6	1.00	8.6	10
CTZ	Pellet	15.1	0.50	7.6	10



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Other Ingredients/Additions	Amount	When
Whirlfloc tablets	2	15 min
Yeast Nutrient	2 tsp	15 min
Dry yeast (See yeast info for strain)	4 pkg	pitch
oak chips, American heavy toast	4 oz	post-ferment
bourbon	see notes	post-ferment

NOTES:

- Optionally, to avoid astringency, either add roasted grains late in (~15 min left) mash or make a cold steeped tea in advance and add to boil.
- Ferment out and rest (~14 days).
- While fermenting, soak oak chips in just enough bourbon to cover them for ~2 weeks or longer. Use air tight jar.
- Rack to another vessel, and add soaked chips and most (or all) of the bourbon for a couple of weeks or longer. Taste over time to ensure it doesn't become too oaky. Use a sanitized mesh bag to keep tubing from clogging during transfer later. A bag also allows removal if flavor gets to become too strong. Or, if not using bag, rack again to get beer off oak if necessary.
- Keg. Use closed system transfer if possible to prolong shelf life since it may take to while to drink all of this.
- Brew Day notes: Maxed out 15 gal blichmann mashtun. no more water nor grain can be added. 1.5mm orifice insufficient for recirculation. use larger next time.
- Post Ferm Notes: Although the calculated ABV reports only 9.3%, it does not account for the added bourbon (Woodford Reserve) which will make the final ABV higher. Used ~11.7 oz 90 proof bourbon which will add ~.5% ABV to 10 gallons for a total of ~9.8% ABV.

Water Additions (grams)		
	Mash	Sparge
Gypsum	2.0	1.7
Cal Chloride	8.0	6.9
Epsom Salt	4.0	3.5
Slaked Lime	0.0	0.0
Baking Soda	0.0	0.0
Chalk	0.0	0.0
Lactic Acid	0	mL

Yeast Information		
Fermentis		
SaflAle US-05		
Ferm Temp:	64-82	°F

Forced Carbonation		
CO2 Volume	2.3	
Temperature	38.0	°F
Pressure	9.1	PSI

Lautering Process (Wort Separation)						
	Design		Actual		Corrected	
	qt	°F	qt	°F	qt	°F
No Sparge	Sparge Water Req'd	33.1	172.0	32.0	172.0	32.0
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
	-	-	-	-	-	-
Grains Only Contribution	Wort Collected	52.5	172.0	52.6	172.0	52.6
	Grain Absorb Rate	0.38	qt/lb	0.35	qt/lb	
	S.G. Hydrometer	1.075		1.077	68.3	°F
	Refractometer	18.3	° Brix		° Brix	
	Mash Extract Efficiency	60%		61.2%		

Boil Process						
	Design		Actual		Corrected	
	qt	°F	qt	°F	qt	°F
Boil	Start Volume	53.3	qt	52.0	qt	
	Time	90	min	90	min	
	End Volume (w/ IC)	47.2	qt	46.2	qt	
	Boil off Rate	5.4	qt/hr	3.9	qt/hr	
Post Boil	Chilled Volume	43.5	qt	44.4	qt	44.4
		75	°F	77.4	°F	75
O.G.	Hydrometer	1.087		1.091	76.6	°F
	Refractometer	21.0			° Brix	

Fermentation & Clarification						
	Design		Actual		Corrected	
	qt	°F	qt	°F	qt	°F
Into Fermenter		42.0	75.0			
Into Bright Tank or Aging Vessel						
F.G.	Hydrometer	1.017		1.021	63.0	°F
	Refractometer	4.2	° Brix		° Brix	
Packaged Beer		40.0	qt		qt	