

GMT

- Gravity **11 BLG**
- ABV **4.4 %**
- IBU **37**
- SRM **11**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

Batch size

- Expected quantity of finished beer **8.5 liter(s)**
- Trub loss **5 %**
- Size with trub loss **8.9 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **10.8 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.1 liter(s) / kg**
- Mash size **5.8 liter(s)**
- Total mash volume **7.7 liter(s)**

Steps

- Temp **65 C**, Time **65 min**
- Temp **75 C**, Time **5 min**

Mash step by step

- Heat up **5.8 liter(s)** of strike water to **72.3C**
- Add grains
- Keep mash **65 min** at **65C**
- Keep mash **5 min** at **75C**
- Sparge using **6.9 liter(s)** of **76C** water or to achieve **10.8 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Briess - Rye Malt	0.2 kg (10.6%)	80 %	7
Grain	Briess - Pale Ale Malt	1.6 kg (85.1%)	80 %	7
Grain	Briess - Black Barley	0.03 kg (1.6%)	55 %	1300
Grain	Caramel/Crystal Malt - 30L	0.05 kg (2.7%)	75 %	59

Hops

Use for	Name	Amount	Time	Alpha acid
Aroma (end of boil)	Fuggles	25 g	25 min	5.9 %
Boil	Fuggles	15 g	10 min	5.9 %

Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	5 g	Safale