

Bitter

- Gravity **12.6 BLG**
- ABV **5.1 %**
- IBU **34**
- SRM **13.6**
- Style **Special/Best/Premium Bitter**

Batch size

- Expected quantity of finished beer **12 liter(s)**
- Trub loss **5 %**
- Size with trub loss **12.6 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **15.2 liter(s)**

Mash information

- Mash efficiency **60 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **11.1 liter(s)**
- Total mash volume **14.8 liter(s)**

Steps

- Temp **64 C**, Time **15 min**
- Temp **72 C**, Time **45 min**

Mash step by step

- Heat up **11.1 liter(s)** of strike water to **71.3C**
- Add grains
- Keep mash **15 min** at **64C**
- Keep mash **45 min** at **72C**
- Sparge using **7.8 liter(s)** of **76C** water or to achieve **15.2 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Ale (W)	2 kg (54.1%)	85 %	7
Grain	Pilzneński (W)	1.3 kg (35.1%)	81 %	4
Grain	Crystal Medium (Crisp)	0.3 kg (8.1%)	72 %	270
Grain	Abbey (W)	0.1 kg (2.7%)	75 %	45

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Magnat PH 2019	20 g	30 min	12 %
Whirlpool	challanger 2020	60 g	0 min	6.1 %

Yeasts

Name	Type	Form	Amount	Laboratory
Wyeast - 1728 Scottish Ale	Ale	Slant	200 ml	Wyeast Labs

Extras

Type	Name	Amount	Use for	Time
Water Agent	gips	3 g	Mash	60 min

Water Agent	chlorek wapnia	1 g	Mash	60 min
Fining	whirflock	1 g	Boil	5 min