

# bitter ale

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- Gravity **12.9 BLG**
- ABV **5.2 %**
- IBU **21**
- SRM **19.6**
- Style **Mild**

## Batch size

- Expected quantity of finished beer **19 liter(s)**
- Trub loss **5 %**
- Size with trub loss **19.9 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **24.1 liter(s)**

## Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **14.7 liter(s)**
- Total mash volume **19.6 liter(s)**

## Steps

- Temp **68 C**, Time **30 min**
- Temp **72 C**, Time **30 min**
- Temp **78 C**, Time **10 min**

## Mash step by step

- Heat up **14.7 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **30 min** at **68C**
- Keep mash **30 min** at **72C**
- Keep mash **10 min** at **78C**
- Sparge using **14.3 liter(s)** of **76C** water or to achieve **24.1 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Maris Otter Crisp	2 kg (40.8%)	83 %	6
Grain	Mild Malt	2 kg (40.8%)	80 %	8
Grain	Caramel/Crystal Malt - 120L	0.5 kg (10.2%)	72 %	236
Grain	Fawcett - Pale Chocolate	0.2 kg (4.1%)	71 %	600
Grain	Brown Malt (British Chocolate)	0.2 kg (4.1%)	70 %	128

## Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Fusion UK	30 g	50 min	4.57 %
Aroma (end of boil)	Fusion UK	20 g	20 min	4.57 %
Dry Hop	East Kent Goldings	30 g	7 day(s)	5.1 %

## Yeasts

Name	Type	Form	Amount	Laboratory
Safale S-04	Ale	Dry	11.5 g	Safale

## Extras

Type	Name	Amount	Use for	Time
Fining	mech irlandzki	11 g	Boil	15 min

## Notes

- ~10 dni fermentacja burzliwa  
~7 dni fermentacja cicha  
*Feb 26, 2018, 8:01 PM*