

# Bitter Challenger

- Gravity **12.4 BLG**
- ABV ---
- IBU **42**
- SRM **9.3**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

## Batch size

- Expected quantity of finished beer **21 liter(s)**
- Trub loss **5 %**
- Size with trub loss **22.1 liter(s)**
- Boil time **60 min**
- Evaporation rate **13 %/h**
- Boil size **25 liter(s)**

## Mash information

- Mash efficiency **80 %**
- Liquor-to-grist ratio **3 liter(s) / kg**
- Mash size **13.5 liter(s)**
- Total mash volume **18 liter(s)**

## Steps

- Temp **68 C**, Time **60 min**
- Temp **77 C**, Time **15 min**

## Mash step by step

- Heat up **13.5 liter(s)** of strike water to **76C**
- Add grains
- Keep mash **60 min** at **68C**
- Keep mash **15 min** at **77C**
- Sparge using **16 liter(s)** of **76C** water or to achieve **25 liter(s)** of wort

## Fermentables

Type	Name	Amount	Yield	EBC
Grain	Pale Ale -Malteurop	3 kg (66.7%)	80 %	4
Grain	Biscuit - Castel Maltng	0.25 kg (5.6%)	79 %	50
Grain	Fawcett - Crystal	0.25 kg (5.6%)	70 %	130
Grain	Strzegom Pale Ale	1 kg (22.2%)	79 %	6

## Hops

Use for	Name	Amount	Time	Alpha acid
First Wort	Challenger	30 g	60 min	8.3 %
Boil	Challenger	20 g	20 min	8.3 %
Aroma (end of boil)	Challenger	25 g	1 min	8.3 %

## Yeasts

Name	Type	Form	Amount	Laboratory
FM10 O czym szumią wierzby	Ale	Liquid	1000 ml	Fermentum Mobile

## Extras

Type	Name	Amount	Use for	Time
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Fining	mech irlandzki	5 g	Boil	15 min
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