

bitter

- Gravity **11.9 BLG**
- ABV **4.8 %**
- IBU **41**
- SRM **11.5**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

Batch size

- Expected quantity of finished beer **25 liter(s)**
- Trub loss **5 %**
- Size with trub loss **26.3 liter(s)**
- Boil time **60 min**
- Evaporation rate **10 %/h**
- Boil size **31.7 liter(s)**

Mash information

- Mash efficiency **75 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **21 liter(s)**
- Total mash volume **27 liter(s)**

Steps

- Temp **55 C**, Time **10 min**
- Temp **63 C**, Time **30 min**
- Temp **72 C**, Time **30 min**

Mash step by step

- Heat up **21 liter(s)** of strike water to **60C**
- Add grains
- Keep mash **10 min** at **55C**
- Keep mash **30 min** at **63C**
- Keep mash **30 min** at **72C**
- Sparge using **16.7 liter(s)** of **76C** water or to achieve **31.7 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Strzegom Pilzneński	5 kg (83.3%)	80 %	4
Grain	Pszeniczny	0.5 kg (8.3%)	85 %	4
Grain	Strzegom Karmel 300	0.5 kg (8.3%)	70 %	299

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Iunga	30 g	60 min	11 %
Boil	Sybilla	20 g	30 min	6.9 %
Aroma (end of boil)	Sybilla	30 g	2 min	6.9 %

Yeasts

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