

Bitter

- Gravity **14.7 BLG**
- ABV **6.1 %**
- IBU **36**
- SRM **12.8**
- Style **Extra Special/Strong Bitter (English Pale Ale)**

Batch size

- Expected quantity of finished beer **15 liter(s)**
- Trub loss **5 %**
- Size with trub loss **15.8 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **19.3 liter(s)**

Mash information

- Mash efficiency **59 %**
- Liquor-to-grist ratio **3.7 liter(s) / kg**
- Mash size **20.8 liter(s)**
- Total mash volume **26.5 liter(s)**

Steps

- Temp **67 C**, Time **52 min**
- Temp **72 C**, Time **18 min**

Mash step by step

- Heat up **20.8 liter(s)** of strike water to **73.4C**
- Add grains
- Keep mash **52 min** at **67C**
- Keep mash **18 min** at **72C**
- Sparge using **4.1 liter(s)** of **76C** water or to achieve **19.3 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Viking Pale Ale malt	2.5 kg (44.4%)	80 %	5
Grain	Viking Red Active malt	0.38 kg (6.7%)	80 %	35
Grain	Viking Munich dark malt	2.5 kg (44.4%)	80 %	22
Grain	Strzegom Karmel 150	0.25 kg (4.4%)	75 %	150

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	Challenger	38 g	50 min	6.1 %
Boil	Admiral	19 g	5 min	12 %

Yeasts

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

Notes

- Chłodzenie chłodnicą do 21 stopni.
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