

Stout wytrawny

- Gravity **11.7 BLG**
- ABV **4.7 %**
- IBU **32**
- SRM **26.5**
- Style **Dry Stout**

Batch size

- Expected quantity of finished beer **16 liter(s)**
- Trub loss **5 %**
- Size with trub loss **17.6 liter(s)**
- Boil time **70 min**
- Evaporation rate **10 %/h**
- Boil size **21.4 liter(s)**

Mash information

- Mash efficiency **70 %**
- Liquor-to-grist ratio **3.5 liter(s) / kg**
- Mash size **14.4 liter(s)**
- Total mash volume **18.5 liter(s)**

Steps

- Temp **66 C**, Time **40 min**
- Temp **72 C**, Time **10 min**
- Temp **78 C**, Time **1 min**

Mash step by step

- Heat up **14.4 liter(s)** of strike water to **72.5C**
- Add grains
- Keep mash **40 min** at **66C**
- Keep mash **10 min** at **72C**
- Keep mash **1 min** at **78C**
- Sparge using **11.1 liter(s)** of **76C** water or to achieve **21.4 liter(s)** of wort

Fermentables

Type	Name	Amount	Yield	EBC
Grain	Weyermann - Pale Ale Malt	3.2 kg (78%)	85 %	7
Grain	Carafa II	0.1 kg (2.4%)	70 %	812
Grain	Jęczmień niesłodowany	0.5 kg (12.2%)	75 %	2
Grain	Jęczmień palony	0.3 kg (7.3%)	55 %	985

Hops

Use for	Name	Amount	Time	Alpha acid
Boil	minstrel	15 g	60 min	7 %
Boil	Souther cross	5 g	60 min	14 %
Aroma (end of boil)	minstrel	15 g	10 min	7 %
Aroma (end of boil)	souther cross	5 g	10 min	14 %

Yeasts

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